# 3.0 Environmental Analysis

An environmental analysis was conducted to evaluate the potential impacts of the No-Build Alternative and the Preferred Alternatives. This chapter describes the data sources and methodologies used, along with the regulatory framework, to determine how the environment would be impacted by the No-Build Alternative and the Preferred Alternatives. Additionally, proposed mitigation and minimization of effects and any environmental commitments were identified to reduce potential impacts.

Each resource of potential concern within the project study area will be discussed within this chapter. The specific categories described are consistent with FHWA's Guidance for Preparing and Processing Environmental and Section 4(f) Documents (TA 6660.8A, October 30, 1987). Federal authorization is required for project construction to proceed and will not be granted until all necessary regulatory commitments have been successfully completed and approved.

KCMO, in coordination with MoDOT, will implement all required project and regulatory commitments once the final project construction limits are determined, even if all commitments are not specified within this chapter. Revising any design or construction could potentially change impacts that had not been originally evaluated in the EA. If revisions were to occur and changes in impacts resulted, the Project Partners must verify that the document will be reevaluated so that all determinations and commitments are still valid [Commitment 9].

In addition to other topics addressed, direct effects, as well as indirect and cumulative effects will be covered in this chapter. The Council on Environmental Quality (CEQ) Regulations for Implementing Procedural Provisions of the National Environmental Policy Act (40 CFR §§ 1500-1508) is used by the FHWA and other federal agencies to consider and address direct, indirect, and cumulative effects that a NEPA-related project will have.

## 3.1 Land Use and Zoning

The South Loop Project is located entirely within KCMO whose zoning regulations control development. Multiple land use planning documents have been completed which include downtown Kansas City, therefore, each in some way include the project study area. Existing documents, zoning and land use maps, and planned changes were collected, inventoried, and used to determine the current land use and zoning within the project study area. Those documents include:

***Connected KC 2050 (2020)*** is the current Long Range Transportation Plan (LRTP) for the nine-county Kansas City metropolitan region developed by the Mid-America Regional Council (MARC). *Connected KC 2050* serves as the Kansas City metro's regional transportation plan and is a blueprint for managing the region's transportation system. Adopted on June 23, 2020, according to MARC the plan is meant to "continue to facilitate integrated land use, transportation and environmental planning in areas with significant pedestrian activity and transit services". *Connected KC 2050*'s five main goals (access to opportunity, public health and safety, healthy environment, transportation choices, and economic vitality) support the change of land use within the project study area.

***Jackson County Development Plan (2012)*** is the current plan for coordinating and managing the growth strategies and future development within Jackson County, Missouri. Under the Urban

Development Tier of the *Jackson County Development Plan*, future land use maps indicate to designate the project study area as mixed use. Mixed use development aids in improving connectivity, improving air quality, and fosters environmentally sensitive travel alternatives.

***Greater Downtown Area Plan (2019)*** is the current plan for creating a better downtown Kansas City to live, work, and play. The five primary goals of the *Greater Downtown Area Plan* are to create a walkable downtown, double the population downtown and focus on density, double employment, increase visitors downtown, retain and promote safe, authentic neighborhoods, and promote sustainability. This plan specifically lists investigating alternatives to the existing highway system, including capping over I-670 south of the downtown loop.

The project study area is located entirely within MoDOT and KCMO transportation ROW and, therefore, does not have any other land use designation. There are six land use designations adjacent to the project study area, these consist of commercial, education/convention, parking/automobile, residential/hotel, industry, and activity/open space. The predominant land use type is parking/automobile. Due to the nature and density of the downtown development, some parcels may have multiple land uses. Land use types in the vicinity of the project study area are shown on **Exhibit 3-1**.

A variety of land uses surround the project study area. North of the project study area is dominated by education/convention, commercial, and parking/automobile land uses. The Bartle Hall Convention Center and the Grand Ballroom is built over I-670 in the western portion of the study area. Retail, entertainment, food and drink establishments, and other mixed uses are found in the Power and Light District bordering the project study area to the north. Other developments adjacent to the project area include a movie theater, multifamily apartment buildings, various restaurants, retail shops, other offices, and parking. Adjacent buildings and land use immediately south of the project study area includes additional parking areas, apartment buildings, restaurants, retail shops, and convention center-focused hotels.

The transportation ROW within the project study area falls within KCMO's zoning boundaries. The project study area and the immediate vicinity around it are zoned with a mix of downtown core, downtown mixed-use, manufacturing, and urban redevelopment districts as displayed on **Exhibit 3-2**. Zoning is predominantly manufacturing along the western portion of the project study area within the MoDOT ROW, while downtown core, downtown mixed-use, and urban redevelopment zoning districts are found adjacent to the project study area.

### 3.1.1 Land Use Impacts

No-Build Alternative Impacts
The No-Build Alternative would not change existing land uses or zoning within the project study area. Land uses would only experience changes if KCMO made modifications to land use planning documents and zoning district boundaries or regulations.

Preferred Alternative Impacts
Construction of either Preferred Alternative would not, by itself, change any land uses in or in the vicinity of the project study area primarily due to the lack of property acquisitions necessary to construct the project.

## 3.2 Demographics and Economics

The project study area is located within the corporate limits of KCMO, Jackson County, Missouri. The population in Jackson County and KCMO has steadily increased from 2010 to 2020, as shown in **Table 3-1**. The average growth rates in Jackson County and Kansas City are 0.6 percent and 1.0 percent, respectively, with the average growth rate exceeding the statewide average across the same years.

**Table 3-1: Population Trends**

| Year | State of Missouri | | Jackson County | | Kansas City | |
|---|---|---|---|---|---|---|
| | Population | Growth | Population | Growth | Population | Growth |
| 2010 | 5,988,927 | - | 674,158 | - | 459,787 | - |
| 2011 | 6,010,688 | 0.36% | 676,360 | 0.33% | 463,156 | 0.73% |
| 2012 | 6,021,988 | 0.19% | 677,377 | 0.15% | 464,346 | 0.26% |
| 2013 | 6,044,171 | 0.37% | 679,996 | 0.39% | 467,082 | 0.59% |
| 2014 | 6,063,589 | 0.32% | 683,191 | 0.47% | 470,816 | 0.79% |
| 2015 | 6,083,672 | 0.33% | 687,623 | 0.64% | 475,361 | 0.96% |
| 2016 | 6,093,000 | 0.15% | 691,801 | 0.60% | 481,360 | 1.25% |
| 2017 | 6,113,532 | 0.34% | 698,895 | 1.02% | 488,825 | 1.53% |
| 2018 | 6,126,452 | 0.21% | 700,307 | 0.20% | 491,809 | 0.61% |
| 2019 | 6,137,428 | 0.18% | 703,011 | 0.38% | 495,278 | 0.70% |
| 2020 | 6,154,913 | 0.28% | 717,204 | 1.98% | 508,090 | 2.52% |

Source: U.S. Census Bureau 2010-2020 (ACS 5-Year Estimates)

The racial makeup of the five block groups within the project study area consists mostly of white, non-Hispanic individuals. **Table 3-2** below identifies the percentage of each race for the project study area block groups in comparison to the percentage of each race for KCMO, Jackson County, and Missouri. Census Tract 153, Block Group 3 has the highest percentage of minority population with over 40 percent minorities. When comparing the block groups to KCMO, Jackson County, and Missouri, the percentages were similar.

**Table 3-2: Racial Makeup of the Project Study Area**

| Race | Missouri | Jackson County | Kansas City | Census Tract 11, Block Group 2 | Census Tract 153, Block Group 3 | Census Tract 157.01, Block Group 2 | Census Tract 157.02, Block Group 1 | Census Tract 158, Block Group 2 |
|---|---|---|---|---|---|---|---|---|
| White alone | 78.8% | 61.8% | 55.1% | 79.9% | 52.5% | 86.2% | 83.7% | 64.7% |
| Black or African American alone | 11.3% | 23.0% | 27.3% | 8.0% | 0.7% | 0.0% | 12.0% | 24.4% |
| Hispanic or Latino | 4.3% | 9.2% | 10.6% | 6.1% | 46.8% | 5.0% | 3.4% | 1.3% |

| Race | Missouri | Jackson County | Kansas City | Census Tract 11, Block Group 2 | Census Tract 153, Block Group 3 | Census Tract 157.01, Block Group 2 | Census Tract 157.02, Block Group 1 | Census Tract 158, Block Group 2 |
|---|---|---|---|---|---|---|---|---|
| American Indian and Alaska Native alone | 0.3% | 0.2% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 9.6% |
| Asian alone | 2.0% | 1.8% | 2.7% | 2.9% | 0.0% | 2.3% | 0.9% | 0.0% |
| Native Hawaiian and Other Pacific Islander alone | 0.1% | 0.3% | 0.2% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Some Other Race alone | 0.2% | 0.5% | 0.3% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Two or More Races | 2.9% | 3.2% | 3.5% | 3.0% | 0.0% | 6.4% | 0.0% | 0.0% |

Source: U.S. Census Bureau 2020 (ACS 5-Year Estimates) Table B03002

Household characteristics for KCMO and Jackson County are shown in **Table 3-3.** Most characteristics are similar for both KCMO and Jackson County, but Jackson County has a noticeably higher median age, percent of married couples, and number of households in comparison to KCMO.

**Table 3-3: Household Characteristics**

| Characteristic | Jackson County | Kansas City |
|---|---|---|
| Married Couple | 40.8% | 37.9% |
| With children under 18 | 14.2% | 14.3% |
| Cohabitating | 8.4% | 8.7% |
| With children under 18 | 2.0% | 1.6% |
| Male householder, no spouse/partner | 19.5% | 20.9% |
| With children under 18 | 1.0% | 1.2% |
| Female householder, no spouse/partner | 31.4% | 32.5% |
| With children under 18 | 6.4% | 6.1% |
| Average Family Size | 3.03 | 3.05 |
| Median Age | 37.0 | 35.1 |
| Median Household Income | $60,800 | $60,042 |
| People in Poverty | 12.9% | 13.4% |
| Total Households | 302,965 | 219,020 |

Source: U.S. Census Bureau 2021 (ACS 5-Year Estimates)

While economic statistics specifically for the project study area are not calculated, general economic data trends for KCMO and Jackson County can be used to paint a general picture of economic health. Employment trends for Jackson County and KCMO during the period of 2010 to 2020 are positive, as shown in **Table 3-4**. The average annual employment growth during that period for KCMO was 13.3 percent and the county was 8.8 percent.

**Table 3-4: Employment Growth Trends**

| Year | Jackson County | | | Kansas City | | |
|---|---|---|---|---|---|---|
| | Avg. Annual Employment | Growth | Avg. Annual Growth | Avg. Annual Employment | Growth | Avg. Annual Growth |
| 2000 | 315,967 | N/A | N/A | 212,016 | N/A | N/A |
| 2010 | 323,116 | 2.2% | 0.22% | 222,863 | 4.9% | 0.49% |
| 2020 | 354,384 | 8.8% | 0.88% | 257,087 | 13.3% | 1.33% |

Source: U.S. Bureau of Labor Statistics Annual Average Data (2000-2020)

The unemployment rate in Jackson County and Kansas City remained low from 2000 to 2020, as shown in **Table 3-5**. The average unemployment rate for Kansas City and Jackson County between 2000 and 2020 was 4.7 percent and 4.4 percent, respectively. It is important to note that data for 2020 reflects the effects of the worldwide COVID-19 pandemic.

**Table 3-5: Unemployment Trends**

| Year | Jackson County Average Unemployment Rate | Kansas City Average Unemployment Rate |
|---|---|---|
| 2000 | 3.8 | 4.2 |
| 2010 | 6.0 | 6.4 |
| 2020 | 3.3 | 3.4 |

Source: U.S. Bureau of Labor Statistics Annual Average Data (2000-2020)

Since the early 2000's, the area surrounding the project study area, north and south of I-670, has seen significant private and public sector investments. Examples of these improvements include the Power & Light District, T-Mobile Center, Loews Kansas City Hotel, Kaufmann Center for the Performing Arts, and the KC Streetcar. In addition to those specific developments, areas adjacent to the project study area contain substantial numbers of commercial retail, office, food and drink establishments, and mixed-use properties including major brand-name hotels, restaurants and bars, retail clothing boutiques, offices, and other commercial enterprises. There is very little undeveloped or vacant property in the existing corridor as most non-structural portions of property are paved and used for parking, circulation, and ingress or egress.

According to existing land uses and the future comprehensive land use plan for KCMO, most of the undeveloped land within and adjacent to the project study area is anticipated to remain as primarily high density, CBD-oriented commercial, commercial retail, office, and multi-family residential development.

### 3.2.1 Economic Impacts

No-Build Alternative Impacts

The No-Build Alternative, which does not include any construction improvements, is unlikely to have negative or positive economic impacts. The vicinity of the project study area and greater region will not receive an economic benefit from short term or long-term construction dollars entering the economy. Similarly, the region and vicinity of the project study area will not see local economic growth due to the creation of a new multimodal hub and green open space where people congregate.

Preferred Alternative Impacts

The implementation of either Preferred Alternative will likely result in new development or redevelopment of additional commercial and retail opportunities adjacent to the project study area. They will create new green, open space where people could congregate for passive park use and special events and will create new multimodal connections to the existing bicycle and pedestrian networks and new connections to the streetcar and bus transit network. The new multimodal connections, active-use green, open space, and repaired connection between the CBD and Crossroads Arts districts will likely create future conditions that make adjacent property desirable for development and redevelopment and thereby positively impact future economic conditions. Regional accessibility for local businesses would be enhanced by the new multimodal transportation activity nodes within and adjacent to the project study area.

Short-term economic impacts will likely result from roadway and bridge construction of either Preferred Alternative. Business disruptions may occur due to temporary traffic control, temporary access revisions, utility outages, and temporary roadway closures. Access to some businesses could be temporarily restricted or rerouted; however, some traffic lanes would remain open and access to businesses would be modified through temporary detours and provision of adjacent access locations. The impact of roadway construction on local business patronage can vary, depending on customers' preferences regarding shopping near construction sites. These decisions are typically based on whether alternate locations and/or products are available. In the long-term, these businesses would benefit from new multimodal activity nodes, events at the new green, open space, and repaired connections between the CBD and Crossroad Districts.

Construction of either Preferred Alternative could derive short-term economic benefits through an increase in construction-related employment and could lead to increased economic activity from those construction employees patronizing local businesses in the project study area. In the long-term, a larger number of people using and visiting the area, safer pedestrian and bicycle access and facilities, and improved access to businesses could increase economic activity.

## 3.3 Neighborhoods and Community Resources

Community resources such as schools, universities, places of worship, community centers, libraries, hospitals, and emergency response services are located adjacent to the project study area. Residential areas (apartments and condominium buildings), which utilize those community resources, are also located adjacent to the project study area. **Exhibit 3-3** displays the residential neighborhoods and community resources within a half mile the project study area.

The project study area is located within the Kansas City Public School District. Four school and educational facilities are located within a half-mile of the project study area, including:

- Crossroads Charter Schools – 1011 Central Street
- Crossroads Preparatory Academy – 816 Broadway Boulevard
- Crossroads Academy – Quality Hill – 1080 Washington Street
- Primitivio Garcia Elementary School – 1000 W. 17th Street

There are fifteen places of worship and religious administration facilities found within a half-mile of the project study area. They include:

- The Fount Church – 918 Baltimore Avenue, Floor 3

- Peace Christian Church – 1801 McGee Street
- Soka Gakkai International – USA – 1804 Broadway Boulevard
- Beggars Table Church & Gallery – 2010 Baltimore Avenue
- Christ Community Church – Downtown Campus – 208 W. 19th Street
- Church of Scientology of Kansas City – 1805 Grand Boulevard
- New Life City Church – 1717 McGee Street
- Center Church KC – 601 E. Truman Road
- Abundant Life – 1840 Cherry Street
- St. Mary's Episcopal Church – 1307 Holmes Street
- Catholic Diocese of Kansas City – St. Joseph – 20 W. 9th Street
- The Cathedral of the Immaculate Conception – 416 W. 12th Street
- Grace & Holy Trinity Cathedral – 415 W. 13th Street
- The Diocese of West Missouri – 420 W. 14th Street
- Resurrection Downtown – 1601 Grand Boulevard

There are three libraries located within a half-mile of the project study area. Libraries located within a half mile of the project study area include:

- The Kansas City Public Library: Central Library – 14 W. 10th Street
- Corps of Engineers District Library – 601 E. 12th Street #745
- Jackson County Law Library – 1301 Oak Street #706

There are three health care facilities located within a half-mile of the project study area. Health care facilities located within a half-mile of the project study area include:

- The University of Kansas Health System Urgent Care – 1403 Grand Boulevard
- Spira Care Crossroads – 1916 Grand Boulevard
- Concentra Urgent Care – 200 Southwest Boulevard

The Kansas City Police Department headquarters are located at 1125 Locust Street and Kansas City Fire Station No. 8 is located at 1517 Locust Street.

### 3.3.1 Neighborhood and Community Resource Impacts

No-Build Alternative Impacts
The No-Build Alternative would not directly impact any residential neighborhoods or community resource facilities adjacent to the project study area. The No-Build Alternative is not associated with construction activities, therefore no impacts to existing emergency services or routes would occur.

Preferred Alternative Impacts
The implementation of either Preferred Alternative on neighborhoods and community cohesion will likely have both a direct physical impact and an impact to social factors that could promote a bond between residents and their community. Community cohesion is a product of people sharing common neighborhood facilities and services that create a sense of place within their neighborhoods. The project study area is located completely within public ROW, therefore there are no community facilities within the direct impacts of the project study area.

After construction is complete, either Preferred Alternative could help create community cohesion between the previously separated CBD and Crossroads Arts District. Additionally, the Preferred Alternatives will likely enhance and create new multimodal connections for residents of the adjacent neighborhoods and the broader community. Reconnecting the two sides of I-670 through common shared community spaces and multimodal connections will potentially accelerate redevelopment within those districts.

Kansas City's City Council will develop a community benefits agreement with the Project Partners of the South Loop Project to explicitly document that this project will benefit areas beyond the project study area. This agreement will help to ensure that neighborhoods are not disproportionately impacted by the construction of the project [Commitment 10].

Construction of either Preferred Alternative may result in detours, intermittent lane closures, and other roadway closures that will be temporary and limited to the time required to complete the project construction. The detours and closures may temporarily impact community cohesion and create barriers to accessing community facilities. The exact location, timing, and duration of road closures will be developed during final design and pre-construction phases of the project. MoDOT will ensure a Traffic Management Plan (TMP) is included in the construction contract to respond to temporary disruptions in travel patterns and travel time. Once developed, the Project Partners in coordination with MoDOT will assess the impacts of the TMP within the framework of NEPA. If the TMP could result in impacts that were not previously reviewed under NEPA—such as new or additional road closures, access changes, or other circumstances that could cause new or modified impacts to resources, the Project Partners in coordination with MoDOT's environmental section will review these impacts prior to implementing the TMP [Commitment 11].

## 3.4 Socioeconomic Impacts

All federal agencies must comply with Title VI of the 1964 Civil Rights Act (Title VI) and Executive Order (EO) 12898: *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Under Title VI and related statutes, each federal agency is required to ensure that no person is excluded from participation in, denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion. EO 12898 states that "…each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…"

Pursuant to EO 12898, FHWA issued Order 6640.23A, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The Secretary of Transportation, along with heads of other federal agencies, signed a Memorandum of Understanding on Environmental Justice (EJ MOU) and EO 12898 confirming the continued importance of identifying and addressing these considerations in agency programs, policies, and activities.

As part of the EJ MOU, each agency agreed to review and update their EJ strategy as appropriate. The updated strategy relies upon existing authorities for achieving EJ as described by EO 12898, such as the NEPA, Title VI and related statutes, as well as the commitments and focus areas in the EJ MOU.

On December 16, 2011, FHWA issued a memorandum titled "Guidance on Environmental Justice and NEPA." The memorandum describes the process involved in addressing EJ during NEPA review, including documentation requirements. This guidance helps FHWA staff and NEPA practitioners ensure compliance with EJ requirements. FHWA issued Order 6640.23A, *FHWA Actions to Address EJ in Minority Populations and Low-Income Populations*, on June 14, 2012.

EO 14096 – "Revitalizing Our Nation's Commitment to Environmental Justice for All" was enacted on April 21, 2023. EO 14096 on environmental justice does not rescind EO 12898 which has been in effect since February 11, 1994 and is currently implemented through DOT Order 5610.2C. This implementation will continue until further guidance is provided regarding the implementation of the new EO 14096 on environmental justice.

FHWA administers its governing statutes to identify and avoid discrimination and disproportionately high and adverse effects on minority populations and/or low-income populations by:

1. Identifying and evaluating environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities;
2. Proposing measures to avoid, minimize, and/or mitigate disproportionately high and adverse environmental and public health effects and interrelated social and economic effects and provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by FHWA programs, policies, and activities, where permitted by law and consistent with EO 12898;
3. Considering alternatives to proposed programs, policies, and activities where such alternatives would result in avoiding and/or minimizing disproportionately high and adverse human health or environmental impacts, where permitted by law and consistent with EO 12898; and
4. Providing public involvement opportunities and considering the results thereof, including providing meaningful access to public information concerning the human health or environmental impacts and soliciting input from affected minority populations and/or low-income populations in considering alternatives during the planning and development of alternatives and decisions.

The data used to determine locations of potential EJ populations was pulled from the ACS using the same ACS tables utilized in the Environmental Protection Agency's (EPA) Environmental Justice Screening and Mapping Tool (EJScreen), Version 2.2. Data calculations were performed per methods shown in EPA's *Environmental Justice Mapping and Screening Tool: EJScreen Technical Documentation for Version 2.*2 (July 2023).

ACS Data 2021 5-Year Estimates from the U.S. Census Bureau was collected from ACS Table B03002: *Hispanic or Latino Origin by Race* to calculate the minority percentages for block groups within or adjacent to the project study area. EJScreen defines the People of Color/minority percentage as the "percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals." One block group within the project study area has a greater minority percentage than Jackson County and the City of Kansas City. **Table 3-6** identifies the minority percentages for the block groups within or adjacent to the project study area and **Exhibit 3-4** displays the block group locations and their minority percentages. The downtown loop (area bound by I-70, I-670, and I-35 in downtown Kansas City) is between ½ and

1 mile across, the ½ mile buffer chosen for the EJ analysis represented a reasonable area for analysis of EJ impacts adjacent to the project study area still within the downtown loop.

ACS Table C16002: *Household Language by Household Limited English-Speaking Status* data was utilized to identify block groups within or adjacent to the project study area with limited English-speaking households, also known as linguistically isolated households (LIHH). A block group was considered to have a LIHH if no one age 14 and over speaks English "very well" or the household occupants speak only something other than English. The percent of LIHH's within each block group of the project study area were compared to Jackson County and the City of Kansas City. Two block groups showed populations present with LIHH, however, there were no block groups with LIHH greater than Jackson County or the City of Kansas City.

EJScreen defines the low-income percentage as the "percent of a block group's population in households where the household income is less than or equal to twice the federal poverty level." Block groups were assessed for percentage of households below the poverty level utilizing data from ACS Table C17002: *Ratio of Income to Poverty Level in the Past 12 Months*. Only one census tract showed a low-income household percentage greater than Jackson County or the City of Kansas City. **Exhibit 3-5** displays the low-income percentage for block groups within or adjacent to the project study area. One block group within the project study area has a greater percentage of low-income households, as defined within EJScreen, than Jackson County and KCMO. However, two block groups have a greater percentage of households below the poverty level than Jackson County and KCMO. **Table 3-6** compares the block groups within or adjacent to the project study area to the City, County, and State. The state of Missouri is added as a general comparison to the project study area census area percentages.

EJScreen was utilized to assess the LEP data for the project study area block groups. EJScreen defines the LEP percentage as the percentage of all individuals over 5 years of age who speak a language other than English and speak English less than "very well". As of 2016, Table B16001 no longer includes the places, census tract, or block group geographies. The smallest geographical area that was available for the project study area within the ACS data was the Jackson County-Kansas City (Central) Public Use Microdata Area which has an LEP percentage of 9 percent. In comparison, the LEP percentages for Jackson County and the state of Missouri are 4 percent and 2 percent, respectively. **Exhibit 3-6** displays the Jackson County-Kansas City (Central) Public Use Microdata Area boundary and its LEP percentage.

**Table 3-6: Block Groups with Minority and Low-Income EJ Populations**

| Census Area | Percent Minority | Percent Below Poverty[1] | Percent Low-income Households | Percent LIHH | Percent LEP[2] |
|---|---|---|---|---|---|
| Census Tract 11, Block Group 2 | 15% | 19% | 23% | 1% | 1% |
| Census Tract 153, Block Group 3 | 45% | 5% | 7% | 2% | 7% |
| Census Tract 157.01, Block Group 2 | 13% | 0% | 0% | 0.0% | 2% |

| Census Area | Percent Minority | Percent Below Poverty[1] | Percent Low-income Households | Percent LIHH | Percent LEP[2] |
|---|---|---|---|---|---|
| Census Tract 157.02, Block Group 1 | 22.0% | 5% | 7% | 0.0% | 0% |
| Census Tract 158, Block Group 2 | 29% | 20% | 40% | 0.0% | 0% |
| State of Missouri | 22% | 13% | 30% | 1% | 2% |
| Jackson County, MO | 38% | 13% | 31% | 2% | 4% |
| City of Kansas City, MO | 44% | 15.0% | 33% | 2% | - |
| Project Study Area Half-Mile Buffer | 31% | 9% | 16% | 1 | - |

1. Taken from ACS calculations since EJScreen only reports the value for below 2x the poverty level.
2. EJScreen LEP data not available for areas outside of the individual block groups and ACS data is not available for the City of Kansas City.
3. EJScreen Community Report for half-mile buffer around the study area.

According to FHWA's Environmental Justice Reference Guide (2015), disproportionately high and adverse EJ impacts are adverse effects that are:

- "Predominately borne by a minority population and/or a low-income population; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population."

### 3.4.1 Disadvantaged Community Outreach

Engagement with EJ populations, key stakeholders, and the public is necessary throughout the planning, design, and construction phases of the South Loop Project in order to identify the best strategies to provide benefits to all of those who use I-670 and the adjacent roadway network.

Within the project study area the only LIHH and LEP populations identified were along the western-most edge, which still falls within I-670 ROW and does not contain any residential buildings. ACS LIHH data was collected at the block group level and then compared to Jackson County and KCMO and a lower percentage of LIHH populations were observed for all block groups within the study area. The LEP population percentages for block groups was obtained from EJScreen and compared to the ACS values for Jackson County and the Jackson County-Kansas City (Central) Public Use Microdata Area. The project study area is completely within the Jackson County-Kansas City (Central) Public Use Microdata Area, which is one of five Public Use Microdata Areas within Jackson County and has the highest LEP percentage of the five areas. **Exhibit 3-6** shows the location of the project study area in relation to the Public Use

Microdata Areas within Jackson County. The project team has and will continue to provide information to non-English proficient populations in the following ways:

- The project website will be available in seven languages: English, Spanish, French, German, Chinese (Simplified), Korean, and Vietnamese;
- All public meetings will include an option to request an interpreter. No requests were received thus far; and,
- All content publicly provided will be noted as available in alternative languages upon request. No requests for this service were received thus far [Commitment 12].

The project study team developed and implemented an extensive stakeholder outreach program to provide the opportunity for minority and low-income populations to provide input on the project. Neighborhood and civic group meetings and events, which the project study team attended, met with residents and businesses, or gave presentations to potential minority or low-income communities included:

- Downtown KC 2023 Annual Luncheon, April 14, 2023
- Crossroads Community Association Infrastructure Committee, April 17, 2023
- Red Zone NFL Draft Event, April 28, 2023
- Guadalupe Center Cinco de Mayo Celebration, May 5, 2023
- Mid-America Regional Council Committee, May 11, 2023
- River Market Community Association, May 11, 2023
- 6th Council District Monthly Meeting, May 12, 2023
- Downtown Neighborhood Association, May 23, 2023
- First Fridays, June 2, 2023
- 5th Council District Monthly Meeting, June 5, 2023
- Blue Springs Chamber of Commerce Legislative Affairs Task Force, June 9, 2023
- Hispanic Chamber of Commerce Coffee with Carlos, June 15, 2023
- Westside Neighborhood Association, June 15, 2023
- Historic East Neighborhood Coalition, June 16, 2023
- Juneteenth Festival, June 17, 2023
- Columbus Park Neighborhood Meeting, June 21, 2023
- KC Connect with KC Chamber, June 21, 2023
- Mattie Rhodes Center Tamale Fest, June 24, 2023
- KCPL Central Library, July 19, 2023
- City Market Farmers Market, July 22, 2023
- Paseo West Neighborhood Association, July 26, 2023

As the project progresses through development phases, the study team will continue outreach to various neighborhood, civic, and other organizations as requested and as necessary [Commitment 13].

### 3.4.2 Environmental Justice Impacts

No-Build Alternative Impacts

The No-Build Alternative would not have disproportionate direct impacts to EJ populations. Only routine maintenance and repair of the existing roadway and structures will occur with the No-Build Alternative.

Preferred Alternative Impacts

EJ requires federal agencies to identify and address disproportionately high impacts on minority and low-income communities. The entire project study area is located within the existing MoDOT and KCMO ROW that was acquired when I-670, Truman Road, and each of the cross streets (Wyandotte Street, Baltimore Avenue, Main Street, Walnut Street, and Grand Boulevard) were originally constructed and no land acquisition is expected to occur for this project. Since there will be no residential or commercial displacements, the replacement of the Walnut Street bridge by incorporation into the structural deck, or replacement outside of the structural deck, as a part of the Preferred Alternatives, is not anticipated to cause disproportionately high or adverse effects on any minority populations in accordance with the provisions of EO 12898 and FHWA Order 6640.23A as this is a replacement in kind at the same location, additionally the limits of the replacement do not impact any EJ communities.

Kansas City's City Council will develop a community benefits agreement with the developer of the South Loop Project to explicitly document that this project will benefit areas beyond the project area. This agreement will outline programs and support mechanisms to support EJ populations so they are not disproportionately impacted by the construction and operation of the project. This agreement outlines activities during construction and during park operations aimed at benefitting the broader community. During construction it will outline a focus on the inclusion of minority and women owned business in the design and construction process, fair wage and hiring practices, anti-displacement programs, and traffic management and planning guidelines to minimize impacts. During park operation it will outline programs to support small businesses, economic opportunities for minority and women owned businesses, creation of a community Ombudsman, educational opportunities for elementary and secondary schools, and resident attraction and retention programs [Commitment 10].

Construction activities associated with either Preferred Alternative may result in detours, intermittent lane closures, and other roadway closures that will be temporary and limited to the time required to construct project improvements. The detours and closures may temporarily impact community cohesion and create barriers to accessing community facilities and transit services used by EJ populations. The exact location, timing, and duration of road closures and the effects on transit services will be developed during later design and pre-construction phases of the project. The Project Partners in coordination with MoDOT will ensure a TMP is included in the construction contract to respond to temporary disruptions in travel patterns and travel time. Once developed, the Project Partners in coordination with MoDOT will assess the impacts of the TMP within the framework of NEPA. The TMP will minimize impacts during the construction phase of the project by managing traffic circulation during construction as efficiently as possible. If the TMP could result in impacts that were not previously reviewed under NEPA—such as new or additional road closures, access changes, or other circumstances that could cause new or modified impacts to resources, The Project Partners in coordination with MoDOT's environmental section will review these impacts prior to implementing the TMP [Commitment 11]. Transit services will be rerouted as necessary to maintain connections to community resources and employers [Commitment 14]. No minority or low-income populations identified are anticipated to be adversely impacted by the proposed project in accordance with the provisions of EO 12898 and FHWA Order 6640.23A.

Based on the above analysis, outreach, the public involvement process outlined in **Section 4.0,** and commitments, neither Preferred Alternative will cause disproportionately high and adverse effects on any minority or low-income populations in accordance with the provisions of EO 12898 and FHWA Order 6640.23A. No further EJ analysis is required.

## 3.5 Parks, Recreation, and Section 4(f) Resources

The U.S. Department of Transportation (USDOT) refers to publicly owned land from parks, recreation areas, and wildlife and waterfowl refuges, or land from historic sites that are listed or potentially eligible for listing on the National Register of Historic Places (NRHP), as "Section 4(f) properties" because they have special status under the provisions of Section 4(f) of the USDOT Act of 1966 (49 USC Part 303 and 23 CFR Part 774). Section 4(f) states that the administration may not approve the use of a Section 4(f) property unless a determination is made that 1) there is no prudent and feasible avoidance alternative to the use of the property and 2) the action includes all possible planning to minimize harm to the property; or if the use of the property, including any measures to minimize harm (avoidance, minimization, mitigation, or enhancement measures) will have a de minimis impact on the Section 4(f) property. In addition, any public park or recreation land that has used funds from the National Park Service's (NPS) Land and Water Conservation Fund (LWCF) for acquisition or development is protected under Section 6(f) of the LWCF Act.

There are seven public parks, one private park, one dog park, and one trail (located within a park) within a half mile of the project study area, however there are no Section 4(f) eligible parks or trails within the project study area as shown on **Exhibit 3-7**. The park resources are:

*City Hall Grounds*
The City Hall Grounds Observation Deck is located in City Hall between East 11th and East 12th Streets and Oak Street and Locust Street. The City Hall Grounds Observation Deck is open to the public three days a week from 8 am – 4 pm by request.

*Two Light Luxury Apartments Dog Park*
This 0.14-acre dog park is located south of the westbound lanes of Truman Road, between Walnut Street and Grand Boulevard and immediately above and north of I-670 on Truman Road ROW. Truman Road ROW is owned by the City of Kansas City. The property is leased by the Two Light Luxury Apartments Homeowners Association (HOA) for use as a dog park from the City of Kansas City. While the property is located on public ROW, it is leased exclusively for the use of Two Light Luxury Apartments HOA members and is not open for use by the general public. Gates to the dog park are locked and opened using a code provided to HOA members. This dog park is not a Section 4(f) resource as it is not open to the general public for use.

*West Terrace Park*
West Terrace Park stretches along Beardsley Road, northwest of the project study area. The park is approximately 32.39 acres and contains walking trails, a dog park, and a playground. The park is a compilation of multiple smaller parks including Andrew Drips Park, Ermine Case Junior Park, Mulkey Square Park, and Jarboe Park, which are all within a half-mile of the project study area. This park property qualifies as a Section 4(f) resource but is not within the project study area.

*Ilus Davis Park*
Ilus Davis Park is located between Oak Street and Locust Street between East 9th Street and East 11th Street. The park is approximately 5.2 acres and contains walking paths and a fountain. The park is located to the northeast of the project study area. This park property qualifies as a Section 4(f) resource but is not within the project study area.

*Barney Allis Plaza*
Barney Allis Plaza is located between Wyandotte Street and Central Street between West 12th Street and West 13th Street. The property is built on top of an underground parking garage and is approximately 1.25 acres. The property is located to the north of the project study area and it is not considered a Section 4(f) resource by the City of Kansas City.

### 3.5.1 Parks, Recreation, and Section 4(f) Resource Impacts

No-Build Alternative Impacts:
The No-Build Alternative would not impact existing parks or recreational areas as there is no construction associated with this alternative.

Preferred Alternative Impacts:
Neither Preferred Alternative would impact any Section 4(f) or 6(f) park resources, as there are none located within the project study area. However, the Two Light Dog Luxury Apartments Park, a non-Section 4(f) dog park located on property leased from the City of Kansas City, will be impacted. The property the dog park currently sits on will be incorporated into the structural deck and green open space above I-670, thus removing the ability of the property to function as a dog park. The City of Kansas City and the Two Light Luxury Apartments HOA will review the lease agreement to determine future actions related to the dog park [Commitment 15].

The newly created publicly owned property above I-670 will have many amenities including recreational walking paths, gathering spaces, an amphitheater, native planting spaces, a dog park, and pavilions, all which qualifies the property as a Section 4(f) resource. A publicly owned park or recreational facility that qualifies for Section 4(f) protections may restrict or provide complicating factors when contemplating future maintenance and improvements to the I-670 tunnel, or to I-670 itself. In consideration of this issue, MoDOT and KCMO will enter into an air rights agreement that allows the City to occupy the space above I-670 for 99 years. This agreement shall satisfy the requirements of 23 CFR 774.11(i) by reserving the property for future transportation use [Commitment 7]. In doing so, impacts from the future transportation improvements are not considered a Section 4(f) impact. Additionally, the Project Partners, which includes KCMO, will establish a nonprofit 501(c)(3) organization to manage the implementation and long-term operations of the property and to help raise and manage funding for the project. The property governance for the created property is discussed in **Section 2.6.2** [Commitment 8].

## 3.6 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities in or near the project study area include bicycle friendly roads, dedicated on-street bike lanes, sidewalks, and multi-use recreational trails. These facilities within a half-mile of the project study area are displayed on **Exhibit 3-8** and include:

*Sidewalks*
Sidewalks within the project study area are available and accommodating for bicycle or pedestrian use. Sidewalk widths in the project study area vary from 7 to 15 feet wide.

*Bike Routes*
Grand Boulevard is a bike route and has a dedicated northbound and southbound on-street bicycle lane to accommodate both bicycle and pedestrian activity. The Grand Boulevard bridge was constructed with the first barrier separated bike lane (southbound) in KCMO. This is the only

road in the project study area with dedicated bicycle lanes. Multiple other bike routes surround the project study area.

*Trails*
There are no trails within the project study area but three trails or trail systems exist within a half-mile of the project study area: Riverfront Heritage Trail, Ilus Davis Park Trail System, and the Oak Street Protected Trail. The trails are shown on **Exhibit 3-8**. **Table 3-7** summarizes the trails located within a half-mile of the project study area.

**Table 3-7: Trails Within a Half-Mile of the Project Study Area**

| Facility | Type | Trail Description |
|---|---|---|
| Riverfront Heritage Trail | Regional | Eight-foot-wide shared use path |
| Ilus Davis Park Trails | Park Loop | 15-foot-wide shared use path |
| Oak Street Protected Trail | Protected Lane | Protected bicycle and pedestrian lane |

Note: Trails are listed from west to east

*Riverfront Heritage Trail*
The Riverfront Heritage Trail is a 15-mile paved shared use regional trail that connects downtown Kansas City, Kansas to downtown Kansas City, Missouri. The trail connects communities, parks, venues, and public artworks. Additionally, there are historical markers throughout the trail that explain the history of the Kansas City region. The trail enhances Kansas City's historic, cultural, and recreational facilities, gives users access to the Kansas and Missouri Rivers, and improves the region's quality of life and economy. The Riverfront Heritage Trail is located within and between Ermine Case Junior Park, Mulkey Square Park, Andrew Drips Park, Jarboe Park, and West Pennway Street.

*Ilus Davis Park Trails*
The Ilus Davis Park contains three approximate 0.2-mile-long trails. The 15-foot-wide trail runs along the east and west borders of Ilus Davis Park and is maintained by KCMO.

*Oak Street Protected Trail*
The Oak Street Protected Trail is an approximate 0.4-mile-long trail located along Oak Street between East 18th Street and East 22nd Street. The trail is a protected two-way lane along Oak Street intended for shared bicycle and pedestrian uses.

### 3.6.1 Bicycle and Pedestrian Facilities Impacts

No-Build Alternative Impacts:
The No-Build Alternative would not impact existing bicycle and pedestrian facilities other than routine maintenance for those currently in place.

Preferred Alternative Impacts:
The Preferred Alternatives would positively impact existing bicycle and pedestrian facilities by increasing connections. Existing bicycle and pedestrian facilities within the project study area would be integrated with the proposed bicycle and pedestrian facilities included with the structural deck over I-670. The introduction of the structural deck would increase the useable area for leisure pedestrian and bicycle activity rather than transportation-specific pedestrian and bicycle use. The park would be at street level throughout much of the project, with an exception between Wyandotte Street and Baltimore Avenue. With the park at street level between Baltimore Avenue and Grand Boulevard, pedestrians and bicyclists would be able to enter the park at any

location. Pedestrian accommodations at intersections along Truman Road in both directions will be maintained in their current state. Intersections at Baltimore Avenue and Walnut Street will be converted from signalized to stop controlled, maintaining pedestrian accommodations under both Preferred Alternatives. Truman Road will be narrowed in both directions through a lane reduction, this will improve pedestrian safety by shortening the crossing distance. Either Preferred Alternative would be designed to accommodate paved shared-use paths and sidewalks over I-670 that would connect the two cultural districts (CBD and Crossroads Arts). These paths would also connect with current bicycle and pedestrian networks in the vicinity of the project study area. All pedestrian access to the park and across I-670 will be ADA compliant.

## 3.7 Right-of-Way and Displacements

The Preferred Alternatives will not require ROW acquisition from MoDOT on I-670, or along the City of Kansas City's ROW for the Truman Road (north or south of I-670), Wyandotte Street, Baltimore Street, Walnut Street, or Grand Boulevard corridors or any public or private properties within or adjacent to the project study area.

No-Build Alternative Impacts
The No-Build Alternative does not involve construction or ROW acquisition and would not have any displacements.

Preferred Alternative Impacts
Neither Preferred Alternative will require the permanent acquisition of property for ROW. However, temporary easements for construction activities, staging, and phasing may be required. Areas disturbed or occupied for construction purposes will be returned to previous conditions or improved. Property owners that incur temporary construction impacts will receive compensation as determined by the City of Kansas City, MoDOT, and FHWA guidelines and processes for acquisitions in accordance with the Uniform Relocation Assistance and Real Property Acquisition Act of 1970, as amended by the Surface Transportation Assistance Act of 1987 and 49 Code of Federal Regulations, Part 24 [Commitment 16].

## 3.8 Transportation

Within the project study area, I-670 is a six-lane barrier-divided interstate facility with a speed limit of 45 mph that sits below-grade between the westbound lanes of Truman Road (north of I-670) and eastbound lanes of Truman Road (south of I-670). The west side of the project study area includes westbound I-670 ramps to access I-35 north and I-35 south, to Broadway Boulevard, and to 12th Street. Ramps from I-35 north and I-35 south converge and join I-670 eastbound lanes in this area as well. The I-670 mainline facility serves approximately 105,000 vehicles per day (vpd) as of 2022, per MoDOT traffic volume maps.

At the city street network surface level, I-670 is crossed by (from west to east) Broadway Boulevard, Central Street, Wyandotte Road, Baltimore Avenue, Main Street, Walnut Street, and Grand Boulevard within the project study area boundary. Access to I-670 is provided by eastbound Truman Road to the east of the project study area. There are no other access points to I-670 provided within the project study area. As of 2022, westbound Truman Road serves an average of 4,600 vpd and eastbound Truman Road serves an average of 6,000 vpd within the project study area.

The transit network within the project study area includes a 300-foot segment of the Main Street route of the 2.2-mile Kansas City Streetcar (KC Streetcar) network. The KC Streetcar network connects the River Market, CBD, Crossroads Arts, and Crown Center districts into one corridor primarily using Main Street. Grand Boulevard, along the east boundary of the project study area, serves as a transit emphasis corridor as it is the primary north-south bus corridor serving downtown Kansas City. RideKC transit bus services in the project study area include:

- Main Street MAX BRT crosses through the project study area via Grand Boulevard.
- Routes 85, 201, 550, and 570 all cross through the project study area via Grand Boulevard.
- Route 47 crosses through the project study area via Grand Boulevard and runs adjacent to the north of the project study area via 12th and 13th Streets.
- Route 11 travels adjacent to the project study area via West 14th Street.
- Troost MAX crosses adjacent to the north and east of the project study area via 12th Street and Holmes Street.
- Routes 404, 519, 520, 563, 569, and 595 cross adjacent to the east of the project study area via Oak Street and run adjacent to the west of the project study area via I-35.

**Exhibit 3-9** displays the transportation network in and adjacent to the project study area.

### 3.8.1 Transportation Impacts

No-Build Alternative Impacts:
The existing roadway and bridge structures will not be impacted by the No-Build Alternative as there is no planned construction associated with this alternative. Routine maintenance and repairs of the existing roadways and structures, both on the Interstate system and local street network, will occur as planned and necessary in the future. However, there will be no additional improvements to roadways, bridges, ramps, or the transit network within the project study area as part of the No-Build Alternative. Travel patterns in and through the project study area are expected to remain unchanged.

Preferred Alternative Impacts
The Preferred Alternatives do not propose any changes to ramps or lane reconfigurations of I-670 within the project study area. A portion of I-670 will be placed in a tunnel as part of the construction of the structural deck. Lighting, signage and wayfinding, fire suppression, safety, and related systems will be included and constructed consistent with MoDOT and FHWA design criteria and NFPA Section 502 standard criteria for Category C tunnels [Commitment 29]. More information regarding required tunnel systems is found in **Section 3.22**.

The Preferred Alternatives propose to create an ‘eastern or western superblock’ of structural deck, which requires the removal of either the existing Walnut Street bridge or Baltimore Avenue bridge over I-670. The Walnut Street and the Baltimore Avenue bridges are two of seven existing bridges over I-670 in the project study area. The Walnut Street bridge was constructed in the 1960’s and rehabilitated in 2007. The Baltimore Avenue bridge was constructed in 1963 and replaced in 2021. To construct a structural deck with an expected 100-year life span, either the Walnut Street bridge or the Baltimore Avenue bridge will be removed and incorporated into the structural deck as part of the project. Both streets are part of the City of Kansas City’s local street network, and while they lie within the MoDOT I-670 ROW, they are jointly maintained by MoDOT and the City of Kansas City. The City of Kansas City is a member of the Project Partner

team and has concurred with the removal of either bridge and the construction of the structural deck in its place, removing the one bridge as a link in the City's transportation network. The six remaining bridges within the project study area would remain as they are with the additions of open green space and pedestrian and bicycle transportation accommodations, including enhanced sidewalks and crosswalks, park trails, and other amenities.

In addition to the removal of either the Walnut Street bridge or the Baltimore Avenue bridge, the Preferred Alternatives propose to reduce both westbound and eastbound lanes of Truman Road (both north and south of I-670) from three through lanes to two through lanes in the project study area. The lane reduction is proposed to provide additional space adjacent to the structural deck for grade transitions to accommodate increased structural girder depth crossing I-670, and to provide additional open green space and room for multimodal improvements. The specific improvements proposed to the local street network include:

- Implementing two lanes along Truman Road (two westbound lanes on North Truman Road and two eastbound lanes on South Truman Road) plus closing the Baltimore Avenue or Walnut Street bridge to vehicular traffic; and
- Adding all-way stop signs at intersections along Baltimore Avenue and Walnut Street and adding an exclusive eastbound left turn lane at South Truman Road and Grand Boulevard.

The Study Team analyzed the potential traffic operational and safety impacts from removing either the Walnut Street bridge or the Baltimore Avenue bridge over I-670 and reducing eastbound and westbound Truman Road from three to two lanes. Additionally, adding stop sign controlled intersections at the Baltimore Avenue and Walnut Street intersections with Truman Road for traffic calming purposes. Existing No-Build, future No-Build, Preferred Alternative (Eastern Superblock), and Preferred Alternative (Western Superblock) level of service (LOS) operations are displayed in **Table 3-8**.

**Table 3-8: Existing, Future No-Build, Preferred Alternative (Eastern Superblock), and Preferred Alternative (Western Superblock) Local Intersection LOS**

| Intersection | Existing (2023) | No-Build (2050) | Preferred Alternative (Eastern Superblock) (2050) | Preferred Alternative (Western Superblock) (2050) |
|---|---|---|---|---|
| **AM Peak Hour** | | | | |
| N Truman Rd & Baltimore Ave | B | B | B | A |
| S Truman Rd & Baltimore Ave | B | C | C | C |
| N Truman Rd & Main St | C | D | C | D |
| S Truman Rd & Main St | C | D | C | D |
| N Truman Rd & Walnut St | C | C | A | C |
| S Truman Rd & Walnut St | A | B | B | B |
| N Truman Rd & Grand Blvd | C | C | B | C |
| S Truman Rd & Grand Blvd | B | B | B | B |

| Intersection | Existing (2023) | No-Build (2050) | Preferred Alternative (Eastern Superblock) (2050) | Preferred Alternative (Western Superblock) (2050) |
|---|---|---|---|---|
| **PM Peak Hour** | | | | |
| N Truman Rd & Baltimore Ave | B | A | C | B |
| S Truman Rd & Baltimore Ave | A | B | B | B |
| N Truman Rd & Main St | C | C | C | C |
| S Truman Rd & Main St | B | C | C | C |
| N Truman Rd & Walnut St | B | B | B | B |
| S Truman Rd & Walnut St | A | B | C | C |
| N Truman Rd & Grand Blvd | B | B | B | B |
| S Truman Rd & Grand Blvd | B | C | C | C |

Source: HNTB 2023 Traffic Analysis, HCM and Synchro

As shown in **Table 3-8**, traffic analyses demonstrated that the local street network intersection operations in and surrounding the project study area operate at an acceptable LOS during both AM and PM peak hours in the existing No-Build, future No-Build, and both Preferred Alternative scenarios. The Eastern Superblock Preferred Alternative scenario (two lanes only on Truman Road in each direction, plus adding an exclusive eastbound left turn lane at South Truman Road and Grand Boulevard, closing the Walnut Street bridge, and adding stop signs at the Baltimore Avenue and Walnut Street intersections) results in all the intersections operating with an acceptable LOS, LOS C or better during the AM and PM peak hours. The un-signalized intersections are projected to operate with an acceptable LOS, LOS C or better during the AM and PM peak hours. The Western Superblock Preferred Alternative scenario (two lanes only on Truman Road in each direction, plus adding an exclusive eastbound left turn lane at South Truman Road and Grand Boulevard, closing the Baltimore Street bridge, and adding stop signs at the Baltimore Avenue and Walnut Street intersections) results in all the intersections operating with an acceptable LOS, LOS D or better during the AM and PM peak hours. The un-signalized intersections are projected to operate with an acceptable LOS, LOS C or better during the AM and PM peak hours.

A predictive safety analysis comparing the future No-Build condition with the Eastern Superblock and Western Superblock alternatives was performed. The predictive analysis demonstrated a net 36 percent reduction in predicted crashes for the Eastern Superblock and a net 32 percent reduction for the Western Superblock on the surface arterial network, including the Truman Road intersections. **Table 3-9** shows the predictive safety analysis results. The number of fatal and injury crashes are also predicted to decrease substantially. Both Preferred Alternatives include the reduction of North and South Truman Road cross-sections and the removal of turn lanes, resulting in a decrease in the number of conflict points at the intersections and, consequently, a reduction in the likelihood of crashes occurring at those intersections.

**Table 3-9: Predictive Safety Analysis Results**

| Alternative | Number of Crashes | | | Delta (No-Build to Build) | | | Percent Change | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total Crashes | F+I Crashes | PDO Crashes | Total Crashes | F+I Crashes | PDO Crashes | Total Crashes | F+I Crashes | PDO Crashes |
| No-Build | 53 | 12.69 | 40.57 | - | - | - | - | - | - |
| Eastern Superblock (closing Walnut) | 34.1 | 8.1 | 26 | -19 | -5 | -15 | -35.8% | -36.1% | -35.9% |
| Western Superblock (closing Baltimore) | 36.1 | 8.8 | 27.4 | -17 | -4 | -13 | -31.9% | -30.6% | -32.5% |

An additional high-level safety evaluation was conducted to compare the currently enclosed portion of I-670 under the Bartle Hall Convention Center and Ballroom versus the uncovered portions of the I-670 corridor in the project study area to determine if there were potential safety concerns with placing the remainder of the corridor within a tunnel. Under the Bartle Hall Convention Center (the enclosed portion) there were 224 crashes over the 5-year period from 2017 to 2021. These crashes occurred over an 870-foot segment from Broadway Boulevard to Wyandotte Street, averaging approximately 1,360 crashes per mile. To the east on I-670, the 1,985-foot uncovered portion from Wyandotte Street to Oak Street saw 340 crashes over the same period, an average of 904 crashes per mile. The results of this high-level analysis demonstrated that the enclosed section of I-670 averaged more crashes per mile. However, crashes within the enclosed section were primarily rear end and passing crashes with no conclusive evidence from the crash data pointing to a specific cause besides congestion and multiple weaving movements.

Due to limitations in predictive safety modeling in relation to tunnels, a predictive analysis was not completed. In some aspects tunnels are safer than open roadways due to changes in driver behavior, in other aspects they have additional challenges due to restricted clear zones and barriers. I-670 currently has many of the same constraints and challenges that are inherent in tunnels, such as the lack of clear zones due to the walls and a center median barrier. Additionally, the impacts from safety features such as fire suppression and incident management will likely reduce the severity level of crashes. Safety will be considered during final design to determine the potential impact due to lane configuration changes. Additional detail regarding traffic and safety evaluations is in **Appendix B**, Traffic and Safety Analysis Reports.

## 3.9 Cultural Resources and Section 106

NEPA requires that agencies consider the effects of projects on all aspects of the human environment, in this case understood to include bridges, buildings, archaeological sites and landscapes.

Section 106 of the National Historic Preservation Act (NHPA) requires that the federal agency responsible for an undertaking (for this project, FHWA) consider the effects of its actions on historic properties. Historic properties are defined as districts, sites, buildings, structures, and objects listed on or eligible for listing on the NRHP. Steps include:

- Initiating the Section 106 process with SHPO and/or the appropriate Tribal Historic Preservation Offices.
- Identification of historic properties that may be affected.
- Assessment of effects to historic properties.
- Resolution of adverse effects to historic properties.

The Project Partners with the assistance of MoDOT, on behalf of FHWA initiated consultation under Section 106 of the NHPA for the project on July 18, 2023 with SHPO. The area of potential effect (APE) was identified 200 feet wider than the project study area for the EA as shown in **Figure 1-2.**

*Architectural Resources*
In total, twenty-seven (27) resources were surveyed within the APE, including eleven (11) historical resources, eight (8) contemporary resources, and eight (8) bridges.

There were eleven (11) historical resources (more than 40 years of age) with construction dates ranging from 1902 to 1966. Of these eleven (11) historical resources, two (2) were historic resources individually listed on the NRHP, three (3) historic resources were listed as contributing to a historic district, and one (1) resource was listed as non-contributing to a historic district. There were three (3) historic resources eligible for listing. A portion of one (1) historic district, that of the Walnut Street Warehouse and Commercial Historic District (as well as its boundary increase) overlapped with a portion of the APE. No additional potential historic districts, historic designed landscapes, or cultural landscapes were identified.

There were eight (8) contemporary resources (less than 40 years of age), excluding bridges, within the APE. The contemporary resources identified within the APE are currently not eligible for listing as they do not meet the requirements for exceptional significance (Criterion G) and are not at least fifty (50) years of age.

Eight (8) bridges were identified within the APE. There are six (6) bridges within the APE that are covered under the 2012 Program Comment for Streamlining Section 106 Review for Action Affecting Post-1945 Concrete and Steel Bridges (77 Federal Register 222: 68790-68795) due to their type and location. The Program Comment was put in place to streamline the Section 106 Process for common Post-1945 concrete and steel bridge types, relieving federal agencies from Section 106 requirements of considering an undertaking's effects on these bridges and eliminating repetitive and redundant documentation and review. Two (2) of the bridges identified within the APE, bridges A0819 and A8527, although included in Section 106 activities due to their proximity to a Historic District, are not eligible for listing due to their common type.

A detailed breakdown of all resources can be found in the Section 106 Report in **Appendix C**.

The Missouri SHPO concurred with these NHRP eligibility determinations on February 15, 2024.

*Archaeological Resources*

Archaeological background research within the project study area determined that fifteen decades of urban settlement suggest a high potential for buried cultural deposits in the project study area. Sanborn Fire Insurance maps published from 1897 to 1907 indicate potential buried deposits in the APE might be present along South Truman Road between Grand Boulevard and Wyandotte Street. Sanborn maps published from 1909 to 1958 indicate potential deposits might be present in the APE along North Truman Road between Grand Boulevard and Wyandotte Street. However successive cycles of property development, redevelopment, and infrastructure improvements have possibly affected the potential for recovering significant data throughout the APE. The Sanborn maps show relatively consistent street and structure locations during the first half of the twentieth century. However, historic aerial photographs document major changes to the built environment between 1948-1995 (EarthExplorer 2023).

Aerial photographs indicate the number of affected parcels and structures were consistent between 1948 and 1963 when the first sections of the I-670 corridor was constructed. Within the APE, there were 13 city blocks with a total of 42 structures which were directly affected by the construction of the I-670 corridor. Between Grand Boulevard and Wyandotte Street, the limits of affects were portions of the seven city blocks north of 15th Street (now South Truman Road). Within the APE west of Wyandotte Street, the affected blocks are north and south of 15th Street and do not extend beyond 14th and 16th Streets. Subsequently, there were two structures fronting 14th Street which were removed before the construction of the Ballroom which spans the I-670 corridor between Wyandotte and Central Streets.

While the historic street layout and the structures visible on Sanborn maps and historic aerial photographs point to the areas where buried deposits should have the greatest potential, the extent of the known disturbances allows for some interpretation of the likelihood that materials remain in situ. The greatest potential for undisturbed layouts of building elements and open space should be the former midblock locations north of I-670 corresponding to what is now North Truman Road and the areas where the natural grade may still exist between Main Street, Baltimore Avenue, and Wyandotte Street. However, these and the other grass covered areas within the APE, north of I-670, have been reconstructed in the past and in recent years (ca. 1991-2023) large, new buildings have been constructed between North Truman Road and 14th Street. The areas south of I-670 were also subject to ground disturbance during the highway construction and most of those grassy areas visible today were once the ROW for 15th Street, as can be seen where its current alignment matches its historic alignment east of Locust Street. It should be noted that all of the former structures seen in historic maps and aerial photographs would have been razed prior to the new building constructions and any potential buried archaeological deposits would have been subjected to at least some ground disturbance in the modern period.

Most greenway segments within the APE along North Truman Road are approximately eight feet wide and accommodate one or more buried utilities, each of which enjoys a two-foot-wide buffer zone on both sides to avoid service interruptions and legal liability for excavators, which significantly limits subsurface investigation. Greenways along South Truman Road are somewhat wider but share similar limitations. The surfaces of these greenways consist of severe hardpan that refused conventional Phase I techniques, such as shovel-tests and soil probes. Based on the documented construction episodes and changes to the original street grid within the APE, the likelihood that intact buried deposits exist within the APE is low. Any archaeological resources which may be present within the APE were probably redeposited during the development of the I-670 corridor and the redevelopment of historic blocks which now contain modern constructions. The current built environment typically has large structures and pavement extending over the

entire property so testable areas are few. The grass covered areas that do exist were also typically reconstituted at least once in the historic period.

*Tribal/Cultural Resources*
No traditional cultural properties or properties with tribal significance has been identified within or adjacent to the project study area. With the assistance of MoDOT and FHWA consultation was initiated with federally- recognized tribal nations with ancestral, historical, or ceded land connections to the project study area in Missouri in April 2023. The following Tribes were consulted:

- Iowa Tribe of Kansas and Nebraska;
- Iowa Tribe of Oklahoma;
- Kaw Nation of Oklahoma;
- Miami Tribe of Oklahoma;
- The Osage Nation;
- Ponca Tribe of Nebraska;
- Ponca Tribe of Indians of Oklahoma;
- Sac and Fox Nation of Missouri in Kansas and Nebraska;
- Sac and Fox Tribe of the Mississippi in Iowa;
- Sac and Fox Nation of Oklahoma;
- Shawnee Tribe; and
- Wyandotte Nation.

### 3.9.1 Cultural Resources and Section 106 Impacts

No-Build Alternative Impacts
The No-Build Alternative would not impact any cultural resources within the project study area due to the lack of construction or changes to the project study area.

Preferred Alternative Impacts
*Architectural Resources*
The results of the cultural resources survey (**Appendix C**) found that no potential historic districts, historic landscapes, or cultural landscapes were identified to be impacted as a result of either Preferred Alternative. The cultural resource survey considered effects (both direct and indirect) to resources, including visual and atmospheric effects and effects from construction activities (e.g. ground disturbance, vibration).

Six (6) of the bridges within the APE are covered under the 2012 Program Comment for Streamlining Section 106 Review for Action Affecting Post-1945 Concrete and Steel Bridges (77 Federal Register 222: 68790-68795) due to their type. Two (2) of the bridges identified within the APE, bridges A0819 (Walnut Street) and A8527 (Grand Boulevard), although part of Section 106 activities due to their proximity to a historic district, are also not eligible for the NRHP.

*Archaeological Resources*
Further work to identify and evaluate the significance of potential buried deposits in the APE is recommended before the present project proceeds to construction. Due to the limitations with current Phase I testing (probe and shovel refusal and presence of underground utilities) within the project corridor, additional testing and investigation will occur prior to project construction based on a Programmatic Agreement (PA) developed by FHWA, the Missouri SHPO, the Missouri

Highway and Transportation Commission, and the Project Partners. This PA focuses on testing and/or monitoring buried utility relocations for identifying potential buried deposits indicated by Sanborn maps in the APE. Additional archaeological research will be conducted focusing on the identification and recovery of any potential artifacts and information that may exist in the greenway spaces adjacent to South and North Truman Road where previous archaeological testing was inconclusive due to the built environment's negation of standard Phase I survey methods. Archival research will seek to identify historic properties, their layout, and the potential for preservation within the APE [Commitment 17]. The PA can be found in **Appendix C**.

*Tribal/Cultural Resources*
No properties of tribal interest were identified within the project study area.

The Project Partners, MoDOT, and FHWA will continue consultation and coordination with the federally recognized Tribes [Commitment 18]. In the event that a previously unevaluated historic property is discovered during construction, all construction and excavation activities will cease immediately within the area. The area will be secured, the material left in place with no further disturbance, and MoDOT, the Missouri SHPO, FHWA, and any Tribal Nations, as appropriate should be contacted immediately per the PA [Commitment 19].

### 3.9.2 Mitigation for Adverse Effects Under Section 106

The Project Partners with the assistance of MoDOT will continue the Section 106 consultation process for the Preferred Alternatives. Due to the challenges regarding Phase I testing for archeological resources and the potential for resources to exist, a PA has been developed to address potential unforeseen or post-review discoveries. It also includes an Archaeological Testing Plan, intended to develop additional information regarding potential resources due to Phase I testing procedures being ineffective. Appropriate stipulations are being developed and will be memorialized in a Section 106 PA. The agreement is included in **Appendix C**.

Development and execution of the PA is appropriate for this project because a determination of effects to archaeological resources cannot be completed until final design and construction. Phase I archaeological testing was inconclusive due to the built environment's negation of standard Phase I survey methods (shovel and probe) and the presence of underground utilities. Access to these areas is possible during initial construction activities.

The PA commits to the following in regard to archaeological resources [Commitment 17]:

- Ensuring that archaeological investigations are conducted in a manner consistent with Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation and SHPO's Guidelines for Phase I Archaeological Surveys and Reports.
- Properties, including greenspaces along utility corridors that could not be accessed during the Phase I investigation shall be surveyed.
- Continued consultation between the Project Partners, MoDOT, SHPO, FHWA and appropriate Tribal Nations [Commitment 18].

Though no adverse effects on archaeological resources are anticipated, the PA outlines the development of a mitigation plan if adverse effects are identified during construction or future investigations and cannot be avoided.

## 3.10 Construction

Construction activities typically include temporary roadway closures, detour routes, prohibited turns, and possible lane width restrictions. These modifications can all impact emergency response times and access to incidents requiring first responder presence. Additionally, throughout the duration of a project, construction activities can result in negative impacts on the air quality within and adjacent to the project study area. Most impacts are temporary and would primarily result from construction trucks and equipment. The amount and type of equipment used for the project will determine the adverse effects that result. Regardless, contractors on the project will be required to comply with all applicable local, state, and federal air pollution regulations.

### 3.10.1 Construction Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore there are no direct impacts to construction. Scheduled routine maintenance and construction of facilities in the project study area will occur as planned with the No-Build Alternative. The Walnut Street bridge that crosses I-670 will be replaced before the end of its useful life, which may have temporary construction impacts. The No-Build Alternative will not result in any major unanticipated changes or impacts.

Preferred Alternative Impacts
Construction of either Preferred Alternative will result in temporary construction, maintenance, and operations of building the structural deck over I-670, and with improvements to both westbound and eastbound Truman Road.

To construct the structural deck over I-670, girders would be laid over the top of I-670. Temporary closures of I-670, likely at night when traffic volumes are lowest, would be necessary to place the girders. The exact location, timing, and duration of road or lane closures will be coordinated with MoDOT and finalized during later design phases.

Construction methods and operations will be conducted in accordance with the City of Kansas City, MoDOT and Missouri Department of Natural Resources (MoDNR) regulations, particularly concerning clearing, grubbing, dust control, and air emissions functions. In addition, local and regional access to existing rural and urban areas and facilities will be maintained during construction [Commitment 21].

Measures will be taken to reduce fugitive dust and other emissions generated during construction. Emissions from construction equipment would be controlled in accordance with emission standards prescribed under state and federal regulations. Materials resulting from clearing and grubbing, demolition, or other operations, with the exception of materials to be retained, would be removed from the project and disposed of by the contractor [Commitment 22].

Normal construction procedures may cause temporary reductions in air quality. Construction permit and contract conditions will require adherence to standard dust control measures for cleared areas during construction. Additionally, burning of construction debris will be prohibited and requirements to properly dispose of all such material off site will be included. No adverse long-term effect on air quality will occur since unique construction procedures are not expected and construction activities will be temporary in nature.

The major construction elements of this project are expected to be clearing, earth moving, hauling, grading, paving, and structural deck construction. General construction noise impacts for passersby and those individuals living or working near the project study area can be expected particularly from clearing, earth moving, and paving operations. Considering the short-term nature of construction noise, the impacts are not expected to be substantial.

## 3.11 Emergency Routes

It is essential for the health, safety, and general welfare of a community that emergency response vehicles and services have adequate roadway access to all residential, commercial, and industrial properties. The I-670 corridor is a vital route within the Kansas City region, facilitating access to downtown Kansas City, and serving as a connecting route between I-35 and I-70. Both I-35 and I-70 are Interstate facilities of national importance connecting major freight hubs and for regional commuting and commerce. I-670's role in connecting these routes is of vital importance and long-term closures could have substantial impacts on regional commerce, mobility, and safety.

### 3.11.1 Emergency Route Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore there are no direct impacts to existing emergency routes. Scheduled routine maintenance in the project study area will occur as planned with the No-Build Alternative. The Walnut Street bridge that crosses I-670 will be replaced before the end of its useful life, which may have temporary emergency route impacts. The No-Build Alternative will not result in any major unanticipated changes or impacts.

Preferred Alternative Impacts
Construction of either Preferred Alternative will not result in permanent impacts to emergency routes due to the building of the structural deck over I-670, and improvements to both westbound and eastbound Truman Road. Impacts to emergency response times, if any, would be temporary in nature to the period of time required during construction. KCFD Station #8 is the nearest first responder location for the project study area and is located at 1517 Locust Street, approximately 1,000 feet from the project study area. The nearest police station is the KCPD Headquarters at 1125 Locust Street, approximately 1,700 feet from the project study area. Due to the proximity of first responder services to the project study area, the availability of alternate routes around Truman Road and I-670, and the localized nature of construction activities for the project, first responder times are not expected to be largely impacted during construction of the Preferred Alternative.

## 3.12 Water Resources

There are no existing water resources, including wetlands, streams, or ponds in, or within a half mile, of the project study area. The National Wetlands Inventory (NWI) and current and historical aerial mapping of the project study area do not show any surface waters or markers that would indicate water resources are currently, or were previously, located in or within a half mile of the project study area. Aerial photography of downtown Kansas City from the 1930s through the 1980s show the project study area was a heavily developed urban industrial and commercial area, and any previously extant surface waters were likely drained, realigned, or relocated into the city's storm water conveyance system.

### 3.12.1 Water Resource Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore there are no impacts to any water resources within the project study area.

Preferred Alternative Impacts
There are no identified water resources in the project study area. Therefore, neither Preferred Alternative will likely impact any water resources.

## 3.13 Surface Waters and Water Quality

Section 303(d) of the Clean Water Act (CWA) requires states to identify all water bodies where state water quality standards are not being met. Water quality in Missouri is governed by the Code of State Regulations 10 CSR 20-7.031 and is administered by the MoDNR. MoDNR maintains an impaired waters list, which was reviewed to determine if any surface waters within or near the project study area contained impairments that require a Total Maximum Daily Load (TMDL).

The project study area lies within, and is drained by, the Lower Missouri-Crooked (10300101) eight-digit hydrologic unit code (HUC 8) subbasin of the Missouri River Basin. While there are no surface waters present within the project study area, the confluence of the Missouri River and Kansas River is located approximately 1.8 miles northwest. Stormwater flows from the project study area and eventually drains to the Missouri River. The Missouri River, for the entirety of its length in Missouri, is listed on the 303(d) list of impaired waters with a primary pollutant of *E. coli;* and, municipal point source and nonpoint source discharges are the primary sources of pollution.

Major considerations for potential water quality impacts are sedimentation, contamination from street surface runoffs, agents for weed, insect, and rodent control, contamination from chemical or other toxic material spills, and groundwater pollution. Sediment loads in rivers, streams, and wetlands can have an impact on drinking water quality and aquatic animals by limiting oxygen absorption. Sedimentation may result from bridge and drainage facility construction and erosion resulting from project construction. Standard engineering best management practices (BMPs) of mitigation, i.e., temporary erosion, sediment, and water pollution control, should prove to be adequate to minimize sedimentation and water quality impacts.

Groundwater well data indicated one groundwater well within the project study area, which did not provide groundwater level data. The majority of the project study area is paved with concrete or asphalt, and construction is unlikely to affect groundwater as it would be above grade. Drinking water supplied to the project study area is from the Missouri River which accounts for approximately 80 percent of the City of Kansas City's water supply.

MoDNR is responsible for administering the National Pollutant Discharge Elimination System (NPDES) to protect waters of the state from sediment and other contaminants. Any project that disturbs greater than one acre from construction activities requires a stormwater permit from the MoDNR. The primary requirement of the stormwater permit is the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must specify the "BMPs" to be employed and what controls will be implemented to minimize the contamination of stormwater runoff associated with construction activity. The contractor is

responsible for developing the SWPPP and obtaining the stormwater permit for MoDNR [Commitment 23].

The contractor will also obtain a Site Disturbance Permit from the City of Kansas City per City Code Section 63-25 and prepare an Erosion Control and Sediment Control Plan per Section 63-30 [Commitment 23].

### 3.13.1 Surface Waters and Water Quality Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative will not impact the water quality within the project study area.

Preferred Alternative Impacts
Both Preferred Alternatives are anticipated to decrease the volume and rate of stormwater runoff during heavy rain events due to the addition of soil, plants, green space, and other pervious surfaces on top of I-670, which would limit the direct storm water runoff into sewer systems. Plants and trees planted on the structural deck over I-670 would absorb and use water from rain events, and soil would absorb additional, but not all, excess rainfall. Future design phases may consider implementing additional stormwater BMPs, such as rain gardens and bioswales, to manage and treat stormwater runoff in the project study area [Commitment 24].

No streams exist within the construction limits of either Preferred Alternative. The Preferred Alternatives may temporarily increase construction-related stormwater runoff. Potential construction, operations and maintenance impacts to water quality could include pollutants such as sediment, petroleum products, coolants, rubber debris, metals, and de-icing minerals/chemicals. Pollutants from the construction, operation, and maintenance of the Preferred Alternative could contribute to loadings of surface waters, which are a recharge component of local alluvial groundwater. Most of the surface loading is flushed during initial high flows associated with precipitation events, with very little left to infiltrate groundwater. As a result, the Preferred Alternatives would not greatly affect surface or groundwater within the project study area.

To minimize or avoid impacts to surface water quality, the construction contractor will submit an NOI to obtain the NPDES stormwater construction permit. The contractor will develop a SWPPP and secure the NPDES permit. In an urban setting, a BMP plan may use elements such as: seeding disturbed areas as soon as possible, installing ditch checks and silt fences at the outset of construction, and taking all necessary precautions to prevent petroleum products from entering the stormwater system. The contractor will be responsible for the monitoring of the BMPs and updating the SWPPP as necessary during project construction [Commitment 23]. In addition, coordination with the City and MoDOT will occur to control temporary runoff during construction [Commitment 24].

The contractor will follow BMPs to reduce impact to groundwater during construction and will also follow recommendations set forth in the TMDLs for the Missouri River. Structural BMPs such as detention basins, filters, infiltration basins, and constructed wetlands are unlikely to be used to capture, retain, and treat stormwater in a limited construction area such as the project study area. Other non-structural BMPs such as street sweeping, debris and litter removal, and control of fertilizer, herbicide, and pesticide use can control pollutant sources. Best practice uses and control of de-icing materials and methods can also reduce pollutant load [Commitment 23].

## 3.14 Floodplains

EO 11988 on Floodplain Management directs federal agencies "to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative."

Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) and the National Flood Hazard Layer (NFHL) showing mapped 500-year floodplains, 100-year floodplains, and regulatory floodways were available for Jackson County. Floodplains and floodways located within a half mile of the project study area are shown on **Exhibit 3-10**. According to the FIRM and NFHL data, the project will not occur within a 100-year floodplain or regulated floodway.

### 3.14.1 Floodplain Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative would not impact the 500-year floodplain, 100-year floodplain, or regulatory floodway.

Preferred Alternative Impacts
Construction of either Preferred Alternative will not occur within a FEMA floodplain or regulatory floodway. Therefore, the Preferred Alternatives would not impact the 500-year floodplain, 100-year floodplain, or regulatory floodway.

## 3.15 Wildlife and Habitat

The project study area is in the Osage Plains physiographic region of Missouri, which extends into Kansas, Oklahoma, and northern Texas. The eastern portion of the Osage Plains is characterized as a transitional area between prairie and woodland and primarily consists of savannah and woodland along the eastern and southern areas.

The project study area is located within downtown KCMO, and, therefore, has little vegetation or natural wildlife habitat present. The Missouri River is about 0.9 miles away from its closest point. Other greenspaces in the general area of the project study area are all parks within the city or located within the interchange of I-670 and I-35. Within the project study area there are small patches of vegetation that consist of mowed grass and shrubs or small trees along the roadside between I-670 and Truman Road, both north and south of I-670. Surrounding these small patches are concrete or asphalt sidewalks and roads, which cover approximately 90% of the surface area in the project study area. Based on the limited vegetation present and general urban environment, there is likely no major wildlife presence or critical habitat present within the project study area.

### 3.15.1 Wildlife and Habitat Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative would not impact any wildlife or natural resources within the project study area.

Preferred Alternative Impacts
Neither Preferred Alternative will negatively impact any wildlife or natural resources within the project study area. However, with the addition of greenspace, benefits to urban wildlife will likely occur through the creation of additional urban habitat.

## 3.16 Threatened and/or Endangered Species

Federally listed threatened and endangered species are subject to the protection afforded under Section 7 of the Endangered Species Act of 1973, as amended (ESA) (16USC 1531 et seq.). The ESA provides protection of animal and plant species that are in population decline and in jeopardy of becoming extinct. The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. Provisions are in place for the protection of migratory birds, parts, nests, eggs, or products. Under the MBTA, "migratory birds" includes all birds native to the U.S. and the regulations pertain to any time of the year, not just during migration.

Coordination with the U.S. Fish and Wildlife Service (USFWS) and the Missouri Department of Conservation (MDC) was conducted using the USFWS IpaC tool on June 27, 2023 (Project Code: 2023-0098059), updated on October 9, 2024, and through early agency coordination contacts. USFWS lists six threatened and/or endangered species that could potentially be located within the Action Area. There are no species with designated critical habitat within the Action Area. There are no species listed at the state level as endangered. The federal (USFWS) listed threatened and endangered species are listed in **Table 3-10**.

**Table 3-10: Federal & State Listed Threatened or Endangered Species**

| Common Name | Scientific Name | Federal Status | State Status | Critical Habitat in Action Area | Effects Determination |
|---|---|---|---|---|---|
| Monarch Butterfly | *Danaus plexippus* | Candidate | Not Listed | None | - |
| Pallid Sturgeon | *Scaphirhynchus albus* | Endangered | Endangered | None | No Effect |
| Tricolored bat | *Perimyotis subflavus* | Proposed | Not Listed | None | No Effect |
| Gray Bat | *Myotis grisescens* | Endangered | Endangered | None | No Effect |
| Indiana Bat | *Myotis sodalis* | Endangered | Endangered | None | No Effect |

### 3.16.1 Threatened and/or Endangered Species Impacts

No-Build Alternative Impacts:
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative would not impact any threatened or endangered species.

Preferred Alternative Impacts:
Neither Preferred Alternative would impact any threatened or endangered species as there is no habitat present within the Action Area to support the listed species as shown in the species descriptions below.

*Monarch Butterfly*
Two Monarch butterfly populations exist in North America—east and west of the Rocky Mountains. The western population migrates to overwintering sites in California, and the eastern population migrates to the country of Mexico. Both populations are in serious decline, but the western population has been nearly extinct in recent years. Under the ESA, if the USFWS determines that the western population should be protected and listed, the eastern population must receive the same protections and listing status. Milkweed is an obligate host plant for eggs and larvae, and adult butterflies need a variety of blooming nectar sources during breeding and migration. Candidate status under ESA Section 7 does not provide species protection and neither consultation or conference, whether formal or informal is required for Federal-aid highway projects. Based on guidance from USFWS to MoDOT's Environmental Compliance Manager on January 5, 2022, conferencing for Monarch butterfly is not required unless MoDOT receives funding from USFWS. No USFWS-funding is in this project; therefore, an effects determination for this species was not made.

*Pallid Sturgeon*
Pallid sturgeon are found in the Missouri and Mississippi Rivers and some of their major tributaries in Missouri. Their preferred habitat has a diversity of depths and velocities formed by braided channels, sand bars, sand flats, and gravel bars. There will be no impact to the Mississippi or Missouri Rivers or their major tributaries and no effect on pallid sturgeon.

*Gray and Indiana*
Gray bats are cave obligate species which congregate in maternity or bachelor colonies in the summer using dome cave and mine habitat, and during winter hibernation congregate in mixed colonies in vertical or pit-type caves and mines. They use mainly stream corridors for foraging spring through fall. Gray bats have been recorded statewide except for northwest Missouri. It is possible for gray bats to roost in small clusters temporarily on a bridge or inside large culverts.

Indiana bats hibernate in caves during winter and spend the breeding season in forested areas of the state where they may use suitable summer roost trees. Roosting and maternity habitat consist primarily of live or dead hardwood trees with shingle-like bark providing space for bats to roost underneath the bark. Summer habitat for these species includes minimum diameter five-inch trees with suitable characteristics of exfoliating bark, splits, crevices, hollow sections, and other damage. This bat species could occur anywhere in Missouri where suitable habitat exists. Removal of suitable summer roost trees at any time of the year may affect the species.

A search of the MoDNR Geosciences Technical Resource Assessment Tool (GeoSTRAT) did not show any mines or karst features (sinkholes, caves, losing streams, or springs) within the project study area; therefore, the project will not impact karst areas and will have No Effect on the Gray bat or its habitat. Habitat and roosting requirements for the remaining bat species include mature trees with exfoliating bark or snags present for roosting. The project study area is completely within ROW and does not include any forested habitat or riparian areas. There would be no suitable forested habitat removed during project construction. Based on the lack of suitable forested habitat within 1,000 feet of the project study area, lack of natural karst areas and streams within the project study area, and the bridges crossing a busy interstate with no riparian areas, a No Effect determination has been made for each of the listed bat species.

*Tricolored Bats*
In September 2022, Tricolored bats were federally proposed as endangered. They mainly roost in foliage of live and dead trees in the spring, summer, and fall, and hibernate in caves and other

subterranean habitats during the winter. These bats can occasionally be found roosting on bridges and in culverts. The primary threat to this species is white nose syndrome (WNS), which typically afflicts bats during hibernation. Given the extreme losses from WNS and impact of wind industry related mortality- loss of roosting, foraging, and commuting habitat (forested habitat) between summer and winter can have a large impact, depending on timing, location, and extent of removal. As this project would not clear any suitable forested habitat, it would not jeopardize the continued existence of the Tricolored bat or adversely modify critical habitat and a No Effect determination has been made for the Tricolored bat.

*Bald Eagle*
The bald eagle is not a listed threatened or endangered species; however, it is still afforded protection by the federal government under the Bald and Golden Eagle Protection Act (BGEPA) and the MBTA. The BGEPA provides for the protection of bald and golden eagles by prohibiting the taking, possession, and commerce of such birds, except under certain specified conditions. There is no nesting habitat for bald or golden eagles within the project study area. The closest area with the potential for nesting trees is the Missouri River, which is approximately 0.9 mile away from the project study area at its closest point. Due to the lack of nesting trees within or adjacent to the project study area, the project would not result in the taking of bald or golden eagles.

*Migratory Birds*
Various bird species could be using existing structures or shrubs within the project study area for nesting. In addition, it should be noted that a Peregrine Falcon nest box is located within a half mile of the project study area on a high-rise building. Although no direct impacts will occur at the location of the nest box, temporary construction elements could cause some indirect impacts. Prior to construction and demolition of either the Walnut Street bridge (#A0819) or the Baltimore Avenue bridge (#A0817), these areas will be checked for potential nests. If migratory birds are found to be nesting on the Walnut Street bridge (#A0819) or the Baltimore Avenue bridge (#A0817), if the Western Superblock Alternative is selected, or if Peregrine Falcons are occupying the nest box, then a protective Job Special Provision (JSP) will be put in place to avoid conflict with the MBTA and follow up with the MDC will be initiated [Commitment 25]. Based on the above conservation measures, impacts to migratory birds would be minimal.

## 3.17 Geology and Soils

Geotechnical data from the MoDNR and the Natural Resources Conservation Service (NRCS) was assessed for the project study area. Within the project study area, the topography is generally flat but increases to the west towards Wyandotte Street. I-670 sits approximately 20 feet below-grade of the surface. The geology of the area consists of limestone and shale, with minor sandstone and coal bedrock. The Missouri Geological Survey (MGS) online interactive map indicated that bedrock in the study area was mostly comprised of the Lower Zarah Subgroup (Pzl), Upper Linn Subgroup (Pkclu), and the Middle Zarah Subgroup (Pzm) of the Pennsylvanian geologic group.

The Zarah subgroup is comprised of three formations – Lane, Wyandotte, and Bonner Springs, which are mostly shale with the exception of the Wyandotte formation, which is mainly limestone. The Linn subgroup is comprised of four formations – Cherryvale, Drum, Chanute, and Iola. These formations make up the middle of the Kansas City Group and are comprised of shale associated with thin limestones.

The NRCS Soil Survey classifies the entire study area as urban land, upland with 5 to 9 percent slopes. According to the MoDNR, earthquakes occur frequently throughout the state at small scales. According to the Geologic Hazards Map of region A, obtained from the Missouri State Emergency Management Agency (SEMA), no historically recorded earthquakes exist near or within the project study area. According to the MoDNR GeoSTRAT online database, there are no known or recorded mines or sink holes within the project study area.

### 3.17.1 Geology and Soil Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative would have no impacts to the geology or soils within the project study area.

Preferred Alternative Impacts
Both Preferred Alternatives can be reasonably constructed without additional rock intrusions, blasting, or other modification of underlying soils or bedrock or design modifications due to poor foundational bedrock. Construction of the structural deck over I-670 will require abutments supported by bedrock. It is assumed that underlying bedrock is stable and can support the required loads. Geotechnical investigations will be performed in later design phases to determine more precise bedrock and structural loading requirements [Commitment 26].

## 3.18 Air Quality

Air quality is typically reviewed in two areas – compliance with the National Ambient Air Quality Standards (NAAQS) established under the Clean Air Act (CAA), and consideration of increases or decreases in the emissions of mobile source air toxics (MSAT) based on the type and magnitude of the improvements proposed. The CAA regulates federal projects and requires FHWA to evaluate every project or program that is regionally significant in a non-attainment area to identify if any negative impacts on air quality will result.

Conformity with NAAQS ensures that federally funded or approved transportation plans, programs, and projects comply with the established air quality objectives. In Missouri, MoDOT and MoDNR are responsible for implementing the conformity regulation in nonattainment and maintenance areas; however, in the Kansas City area, MARC is responsible. Conformity requirements apply in areas that either do not meet or previously have not met the NAAQS for ozone, carbon monoxide (CO), particulate matter, or nitrogen dioxide. According to MARC data from 2022, the Kansas City region is listed as an attainment/unclassifiable area for all transportation-related criteria pollutants. The EPA's Green Book data from May 2023 identified Jackson County, Missouri as a maintenance area for sulfur dioxide and an attainment area for 8-hour ozone under new standards that were established by the EPA in 2015. As a result, Jackson County does not violate the NAAQS for ozone, CO, particulate matter, or nitrogen dioxide. Therefore, the conformity requirements of 40 CFR Part 93 do not apply to this project. No transportation conformity analysis is required.

The metropolitan and statewide planning regulations, which govern development of LRTPs and the resulting transportation improvement program (TIP), require enough detail be provided for regionally significant roadway projects to support air quality analyses. MARC analyzed this project grouped with the rest of the LRTP projects and determined the projected air quality impacts are lower than the budgeted amount, ensuring the region's air quality is not adversely

affected by mobile source pollution. This analysis indicated regional mobile source emissions of volatile organic compounds and nitrogen oxides remain below the budgeted levels, while accounting for the roadway capacity projects listed in the LRTP planned to be operational by 2050.

In addition to the criteria pollutants, the EPA also regulates air toxics. Most air toxics originate from human-made sources, including vehicular mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g. factories or refineries). The MSAT analysis performed for this project was qualitative and is within the requirements of the Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents from January 2023. This project proposes placing I-670 in a tunnel with the construction of a structural deck over the top of the freeway. The project is not adding capacity to I-670 or the surface level transportation network.

### 3.18.1 Air Quality Impacts

No-Build Alternative Impacts

The No-Build Alternative would maintain the existing depressed section of I-670 through the project study area, with regular routine maintenance and repairs. Assuming variables stay consistent, the amount of MSATs emitted in the future would be highly dependent on both the vehicle miles traveled (VMT) and vehicle hours traveled (VHT) through the project study area. If future congestion worsens on I-670, MSAT levels may rise due to increased VHT, resulting from more vehicles in congested traffic, even though the total number of miles traveled may stay the same or even reduce slightly.

Preferred Alternative Impacts

As of Fall 2023, the project study area is an air quality attainment area for all NAAQS, and therefore neither a conformity analysis nor a quantitative air quality modeling analysis were required. All further discussions regarding either Preferred Alternative impacts on air quality are qualitative in nature. Data and information are incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with either Preferred Alternative. The outcome of such an assessment, adverse or not, is influenced more by the uncertainty introduced into the process through assumptions and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure.

Neither Preferred Alternative proposes to add or reduce capacity or reconfigure I-670 within the project study area and will likely have no effect upon VMT or VHT on the regional freeway network. Additionally, both Preferred Alternatives propose to cover the existing below-grade section of I-670 with a structural deck, creating an approximate 2,200-foot-long tunnel through the project study area. The decking over the interstate and creation of a park space will not allow for emissions from I-670 to disperse along the covered length, which will likely reduce vehicle emissions and improve air quality in the vicinity of the residential, commercial, office, hotel and motel, and other retail land uses in the immediate vicinity.

The construction of the I-670 tunnel would not increase or decrease overall vehicle emissions. The immediate vicinity of the west portal is dominated by the I-670 mainline roadway, I-35 ramps, flyovers, and undeveloped MoDOT ROW. At the east portal, the T-Mobile Center indoor arena is located north of Truman Road; surface parking lots and restaurants are located south of Truman Road. The closest building on the south side of Truman Road is approximately 75 feet

from I-670. The tunnel will be equipped with air quality sensors and natural ventilation will be adequate for the size of the tunnel.

## 3.19 Noise

The South Loop Project is a Type III project as defined in 23 CFR 772. Although noise analysis is not required for Type III projects under the regulation, a noise screening analysis was completed to examine any potential impacts.

Noise is essentially defined as unwanted sound. It is emitted from many natural and man-made sources. Highway traffic noise is usually a composite of noises from engine exhaust, drive train, and tire-roadway interaction. Traffic noise is commonly measured in "A-weighted" decibels (dBA). A dBA corresponds to the manner in which the human ear perceives noise at different frequencies. Since traffic noise is generated by passing vehicles and traffic volumes generally fluctuate, an hourly equivalent sound level, or $L_{eq(h)}$, is used to measure traffic noise. The $L_{eq(h)}$ is the constant, average sound level that contains the same amount of sound energy over time as the varying levels of actual traffic noise.

FHWA has developed a Noise Abatement Criteria (NAC) to identify noise sensitive land use and a corresponding $L_{eq(h)}$ where noise levels that approach or exceed certain thresholds are defined as a traffic noise impact. A summary of noise sensitive receptors within approximately 500 feet of the project study area are listed below and shown in **Exhibit 3-11**.

- NAC Activity Category B: Four multi-family, multi-story residential structures with balconies.
- NAC Activity Category C: A dog park, a convention center outdoor area, and a church.
- NAC Activity Category D (Interior): An auditorium and a nonprofit institution.
- NAC Activity Category E: Numerous restaurants with outdoor seating and several hotels with balconies.

To understand the existing noise environment, six 10-minute field noise measurements were taken. The locations of each field measurement ID are identified in **Exhibit 3-11**. Measurements were taken between 6:00 am and 7:00 am to represent the loudest hour of the day, when traffic volumes are high, but congestion has not yet led to significantly reduced speeds.

An existing noise measurement was taken directly adjacent to I-670 at the Two Light Luxury Apartment Dog Park. Traffic noise from I-670 is significant and constant. The $L_{eq(h)}$ during this measurement was greater than 78 dBA. MoDOT defines 66 dBA as a traffic noise impact. An $L_{eq(h)}$ of 78 dBA sounds more than twice as loud and requires a 900 percent increase in acoustic energy compared to an $L_{eq(h)}$ of 66 dBA.

Further away from I-670, the common sounds of a downtown urban environment become distinguishable and add to the noise levels, but the ambient noise levels from I-670 traffic noise remain noticeable. A measurement 180 feet south of I-670 on Walnut Street had an $L_{eq(h)}$ of over 67 dBA, with I-670 being the dominant noise source. Noise levels rarely dropped below 66 dBA over the duration of the measurement. A measurement 500 feet south of I-670 on Walnut Street had an $L_{eq(h)}$ of over 64 dBA, though with the absence of other noise, noise levels from I-670 traffic alone averaged around 61 dBA.

West of Broadway Boulevard, where I-670 emerges from underneath the Kansas City Convention Center, traffic noise is still dominant. However, it is difficult to discern noise coming from I-670 versus other roadways, particularly I-35. A measurement approximately 350 feet south of I-670 had an $L_{eq(h)}$ of over 62 dBA, and a measurement approximately 400 feet north of I-670 had an $L_{eq(h)}$ of over 59 dBA. Additional details regarding the noise analysis is located in the Noise Technical Memorandum in **Appendix D**.

### 3.19.1 Noise Impacts

No-Build Alternative Impacts
There are no improvements associated with the No-Build Alternative and, therefore, there would not be any changes to the current noise decibel levels in the project study area.

Preferred Alternative Impacts
Either Preferred Alternative would significantly reduce traffic noise levels from I-670 in areas between Wyandotte Street and Grand Boulevard. Today, traffic noise levels significantly exceed impact thresholds adjacent to the highway and remain audible for several blocks. Placing a structural deck over these areas would completely shield I-670 traffic noise from adjacent land uses. The noise reduction associated with the Preferred Alternatives may reduce the cost of adjacent construction and improve the marketability of adjacent buildings as new buildings would not need to provide for the same level of sound attenuation.

However, tunnel portal openings can produce localized increases in traffic noise levels in relatively close proximity to the openings. As seen in **Exhibit 3-11**, no noise sensitive locations are in proximity of the proposed east tunnel opening. Only two noise sensitive locations are in proximity of the proposed west tunnel opening: a church with an outdoor common area and a non-profit institution, which would be considered for interior noise impacts. The increases in noise levels can depend on a variety of factors, but **Table 3-11** shows an estimate for increases in noise levels outside a tunnel opening due to the "tunnel effect" at various distances.

**Table 3-11: Tunnel Effect (dBA) Added to Noise Levels based on Distance from Roadways and Tunnel Openings**

| Distance from Road Centerline (feet[1]) | Distance from Tunnel Opening (feet[1]) | dBA Added to Noise Levels (2+ Lane Long Tunnel) |
|---|---|---|
| 330 | 30 | 0 |
| 330 | 165 | 1 |
| 330 | 330 | 1 |
| 330 | 985 | 0 |

Source: National Academies of Sciences, Engineering, and Medicine 2014. Supplemental Guidance on the Application of FHWA's Traffic Noise Model. Washington, DC: The National Academies Press. https://doi.org/10.17226/22284.
[1]Distances in NCHRP report adjusted from meters to feet.

As shown in **Table 3-11**, a maximum increase of 1 dBA would be expected for noise sensitive receptors 330 feet beyond the roadway centerline. Both noise sensitive receptors outside the project study area are beyond 330 feet from the I-670 centerline and are also subject to traffic noise from I-35. A 3 dBA change in noise levels is considered barely perceptible by the human ear. One of these two receptors is Activity Category D, meaning it is only considered noise sensitive for interior levels, and a building reduction factor would need to be applied. Therefore,

the project and the "tunnel effect" would not cause a noticeable increase in traffic noise levels for any noise sensitive receptors, and noise sensitive receptors directly adjacent to the project study area should experience a significant reduction in traffic noise levels.

## 3.20 Hazardous Materials

A review of federal and state agency environmental hazard and hazardous material databases was completed. The database review was performed to evaluate the likelihood of soil and/or groundwater contamination within the project study area or if anywhere within the project study area may require remediation that would result in additional costs and time for the completion of either Preferred Alternative. This evaluation did not include a complete site assessment per ASTM Standard E 1527, nor did it constitute a hazardous waste remedial investigation. A Federal and State government database search was conducted by Environmental Data Resources, Inc. (EDR) on January 27, 2023, which included over 100 different environmental databases.

The results of the database searches were prioritized by the likelihood of soil and/or groundwater contamination present in or near the project study area. The contamination probability was assigned as either "*none-to-low*," "*low-to-moderate*," or "*moderate-to-high*" rating. A total of 108 sites were identified within 500 feet of the project study area, including two historic dry cleaner sites within the project study area. Sites within 500 feet of the project study area are displayed in **Exhibit 3-12** and **Tables 3-12** and **3-13**.

In general, sites identified within 500-feet of the project study area fall into one of four categories – historic dry cleaners, historic automotive and petroleum storage tank facilities, hazardous waste generators, and Missouri Volunteer Cleanup Program (VCP) and Site Management Reporting System (SMARS) sites.

There are two historic hazardous material sites within the project study area. The first is marked as "*low-to-moderate*" priority and operated as Dunlap Laundry and Linen from 1920 to 1940. This site is identified in **Table 3-12** and **Exhibit 3-12** as "E9." The second site is also marked as "*low-to-moderate*" priority and operated as Grossman Benj Cleaner from 1930 to 1940, Fashion Cleaners until 1951, and Band Box Cleaners until 1956. This site is identified in **Table 3-12** and **Exhibit 3-12** as "E17." Both sites no longer exist and were defunct or acquired as part of the construction of I-670.

While there are no operational hazardous material sites within the project study area, there are operational hazardous material sites within 500-feet. One site is marked as "*moderate-to-high*" priority. This site, identified as the Walnut Street Tank, is located at 15th Street and Walnut Street. The site, identified in **Table 3-13** and **Exhibit 3-12** as "11," is a former underground storage tank (UST) facility where there is an ongoing or incomplete investigation and/or corrective action taking place. Any direct impact to this site should be avoided.

**Table 3-12: Hazardous Material Sites Within 500-Feet of the Project Study Area – EDR Databases**

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| **EDR Sites** | | | | | |
| C 4 | E1 | James Service Station - 1940 / Byers Harry Fill Station - 1945 / P & C Truck Stop - 1951 / S & J Service Station - 1956 / S & J Truck Stop Gas Station - 1961 | 1433 Broadway Blvd. | EDR Historical Auto | 2 |
| A 1 | E2 | Goodyear #4322 / Circle Service Fill / Goodyear Asc / Circle Service Auto | 1501 Main St. | RCRA NonGen/NLR; EDR Hist Auto; MO UST | 3 |
| B 2 | E3 | Donnan Gaston L Fill Station - 1930 | 1500 Walnut St. | EDR Historical Auto | 2 |
| B 3 | E4 | NO NAME | Truman Rd. & Walnut St. | SPILLS | 3 |
| A 5 | E5 | Wood Hall Filling Station and Auto Park - 1930 | 1506 Main St. | EDR Historical Auto | 2 |
| D 6 | E6 | Rudd Automotive Services - 1951 / City Motor Exchange Inc. Auto Repair | 210 Truman Rd. | EDR Historical Auto | 2 |
| D 7 | E7 | Star Cleaners & Tailors - 1951-1961 | 204 Truman Rd. | EDR Historical Cleaner | 2 |
| D 8 | E8 | Two Light Luxury Apartments | 150 E. Truman Rd. | MO VCP, MO SMARS | 3 |
| E 9 | E9 | Dunlap Laundry & Linen 1920-1940 | 1501 Broadway Blvd. | EDR Historical Cleaner | 2 |
| E 10 | E10 | United States Army Reserve Center #1 | 1528 Central St. | FUDS, SMARS | 3 |
| F 11 | E11 | Dynamic Computer Solutions | 1500 Grand Blvd. | RCRA NonGen/NLR | 3 |
| C 12 | E12 | 1414 16 Broadway Service - 1950-1951 | 1416 Broadway Blvd. | EDR Historical Auto | 2 |
| C 13 | E13 | Arrow oil Corp. Fill Station - 1930 / 1414 16 Broadview Service Station - 1945 / 1414 16 Broadway Service - 1951 | 1414 Broadway Blvd. | EDR Historical Auto | 2 |
| C 15 | E14 | Joseph Hawkins Cleaner - 1920 / Jacob Hammer Cleaner - 1925 / B & J Cleaners - 1935 / Jacks Auto Service 1951-1956 | 1408 Broadway Blvd. | EDR Historical Cleaner/EDR Historical Auto | 2 |
| C 16 | E15 | Friedman Isadore DN 1951-1961 | 1406 Broadway Blvd. | EDR Historical Cleaner | 2 |
| G 17 | E16 | 1514 20 Moore Harold R Fill Station - 1940 | 1520 Baltimore Ave. | EDR Historical Auto | 2 |
| E 18 | E17 | Grossman Benj Cleaner 1930-1940 / Fashion Cleaners NO - 1951 / Band Box Cleaners - 1956 | 1504 Broadway Blvd. | EDR Historical Cleaner | 2 |

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| F 19 | E18 | Royal Master Cleaners - 1966-2000 / Sir Knight 1969-1971 / Andersons Formal Wear 1982-1987 / Kim Young 2000-2014 | 1501 Grand Blvd. | ICIS, RCRA NonGen/NLR, ECHO, FINDS, US AIRS, EDR Historical Cleaner | 2 |
| D 21 | E19 | Paris Hat Works 1935-1945 | 1431 Grand Blvd. | EDR Historical Cleaner | 2 |
| F 23 | E20 | Royal Master Cleaners 1969-1990 | 1505 Grand Blvd. | MO Drycleaners, RCRO-VSQG, EDR Historical Cleaner | 2 |
| G 25 | E21 | Thomas Theysen Service - 1940 | 1525 Baltimore Ave. | EDR Historical Auto | 2 |
| B 28 | E22 | Circle Service Auto PK and - 1935 / Goodyear #4322 / Goodyear Asc - 1995-2008 / Express Auto Service 2009-2014 | 1501 Main St. | EDR Historical Auto, RCRA NonGen/NLR, UST | 3 |
| G 29 | E23 | ACO Motor Service - 1925 / Leahy Auto Electric Service 1935-1940 / Hogland David Auto Repair - 1945 / Weber Auto Service - 1945 / Wiber Motor Service 1951 | 1532 Baltimore Ave. | EDR Historical Auto | 2 |
| G 30 | E24 | A C O Motor Service - 1925 | 1534 Baltimore Ave. | EDR Historical Auto | 2 |
| G 31 | E25 | Automotive Steam Cleaning Company - 1945 | 1533 Baltimore Ave. | EDR Historical Auto | 2 |
| H 32 | E26 | 1430 32 City Motor Service - 1935 | 1432 Baltimore Ave. | EDR Historical Auto | 2 |
| H 33 | E27 | Seven in One Brake Company - 1930 / 1430 32 City Motor Service - 1935 / Greenlease Oneill Oldsmobile US - 1956 | 1430 Baltimore Ave. | EDR Historical Auto | 2 |
| D 34 | E28 | Corkill Robt 0 Cash - 1951 | 1421 Grand Blvd. | EDR Historical Auto | 2 |
| I 35 | E29 | Grieser Frank P Cleaner - 1935 | 1528 Main St. | EDR Historical Cleaner | 2 |
| C 37 | E30 | Keck Arthur L - 1969-1976 / Broadway Standard Service - 1974 / Convention Center Standard - 1975-1982 / Dunn DK Enterprises Inc. - 1977 / Robinettes Enterprises Inc. 1985-1990 / AMOCO 2 Robinettes - 1989-1990 / AMOCO Oil SS #8604 | 1400 Broadway Blvd. | MO LUST, MO UST, EDR Historical Auto | 3 |

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| H 38 | E31 | 1414 38 Greenlease Oneill 1940-1951 | 1414 Baltimore Ave. | EDR Historical Auto | 2 |
| I 39 | E32 | Hanna Rubber Company | 1512 Main St. | SEMS-ARCHIVE, RCRA NonGen/NLR | 3 |
| H 40 | E33 | Fourteenth & Baltimore Garage - 1930 / 1401 17 14th & Baltimore - 1940 | 1417 Baltimore Ave. | EDR Historical Auto | 2 |
| A 41 | E34 | Block 139 Kansas City Live Re-Development | 1441 Main St. | UST | 3 |
| J 42 | E35 | Commercial Garage 1935-1945 | 1423 Walnut St. | EDR Historical Auto | 2 |
| H 44 | E36 | Fourteenth & Baltimore Garage - 1945 / Bob Armacost Motors, Inc. / Avis Car Rental | 1415 Baltimore Ave. | EDR Historical Auto, LUST, UST, RCRA NonGen/NLR | 3 |
| J 46 | E37 | Transient Garage - 1930 / 1421 23 Commercial Garage - 1940 / Commercial Garage | 1421 Walnut St. | EDR Historical Auto | 2 |
| I 47 | E38 | 1533 35 Williams Willard E - 1935 | 1535 Main St. | EDR Historical Auto | 2 |
| H 48 | E39 | Armacost Parking Garage | 1411 Baltimore Ave. | RCRA NonGen/NLR | 3 |
| J 49 | E40 | Diamond Garage - 1945 | 1419 Walnut St. | EDR Historical Auto | 2 |
| C 51 | E41 | Sinclair Super Service Gas Station - 1961 / Hutton & Hicks Sinclair - 1966-1971 / Sinclair Service Station 1985-1990 | 325 W 14th St. | SMARS, LUST, UST, EDR Historical Auto | 3 |
| I 52 | E42 | Crescent Cleaners & Laundry | 1515 Main St. | EDR Historical Cleaner | 2 |
| C 53 | E43 | Sinclair Marketing Inc. - 1989-1992 / Robinettes Enterprises Inc. | 1401 Broadway Blvd. | EDR Historical Auto | 3 |
| J 56 | E44 | Diamond Garage - 1945 | 1417 Walnut St. | EDR Historical Auto | 2 |
| C 57 | E45 | City Center Services - 1977 / Convention Center of Texaco - 1978 | 14th St. & Broadway Blvd. | EDR Historical Auto | 2 |
| B 58 | E46 | Keystone Laboratories Inc. | 1515 Walnut St. | RCRA NonGen/NLR, ECHO, FINDS | 3 |
| K 59 | E47 | American Laundry Machinery Company - 1920 | 1407 Central St. | EDR Historical Cleaner | 2 |
| H 63 | E48 | Studna Service Station - 1951 / 1400 Baltimore New Tower - Currently in use | 1400 Baltimore Ave. | MO UST, EDUR Historical Auto | 2 |

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| D 64 | E49 | City of Kansas City MO Block #142 | 1415 Grand Blvd. | RCRA NonGen/NLR | 3 |
| K 65 | E50 | Reynolds Geo E Filling Station - 1945 / Howards D X Service Gas Station – 1951 / Brads DX - 1956 / Tiges D X Service - 1961 / Downtown D X Service - 1966 | 321 W. 14th St. | EDR Historical Auto | 2 |
| K 67 | E51 | Central Auto Repair - 1961 / ED Hamilton Cleaning - 1925 | 314 E. 14th St. | EDR Historical Auto, EDR Historical Cleaner | 2 |
| K 68 | E52 | City of Kansas City Bartle Hall Dock A | 1310 W. 14th St. | RCRA-VSQG, ECHO, FINDS | 3 |
| C 69 | E53 | Izzie Friedman Cleaner - 1925 | 412 E. 14th St. | EDR Historical Cleaner | 2 |
| K 70 | E54 | Jack Fisher Cleaner - 1925 | 304 W. 14th St. | EDR Historical Cleaner | 2 |
| L 71 | E55 | Jay E Weeks - 1925 | 219 W. 14th St. | EDR Historical Cleaner | 2 |
| A 73 | E56 | Main St. One Stop Auto - 1935-1940 | 1417 Main St. | EDR Historical Auto | 2 |
| G 74 | E57 | 1514 20 Moore Harold R Fill Station - 1940 | 1514 Baltimore Ave. | EDR Historical Auto | 2 |
| L 75 | E58 | West Side Auto Repair Shop - 1920 | 1409 Wyandotte St. | EDR Historical Auto | 2 |
| L 76 | E59 | R B Landers Cleaners - 1920 | 227 W. 14th St. | EDR Historical Cleaner | 2 |
| M 78 | E60 | Peskin Jos Cleaner - 1930-1945 / Main Cleaners 1956-1961 | 1418 Main St. | EDR Historical Cleaner | 2 |
| F 79 | E61 | Electronic Businesses | 1520 Grand Blvd. | RCRA NonGen/NLR, ECHO, FINDS | 3 |
| L 80 | E62 | McCarthy P Garage - 1930 | 210 W 14th St. | EDR Historical Auto | 2 |
| L 81 | E63 | Bartle Hall Expansion Building 284 | W. 14th St. & Wyandotte St. | MO LUST, MO UST | 2 |
| J 82 | E64 | 1405 07 Diamond Garage - 1935-1940 | 1407 Walnut St. | EDR Historical Auto | 2 |
| G 83 | E65 | ISB Service Corporation | 1535 Baltimore Ave. | RCRA NonGen/NLR, ECHO, FINDS | 3 |
| M 84 | E66 | Midland Cleaners - 1956 | 1412 Main St. | EDR Historical Cleaner | 2 |
| D 85 | E67 | University of Kansas Hospital Authority | 1403 Grand Blvd. | RCRA-VSQG | 3 |
| H 86 | E68 | Fourteenth and Baltimore Garage - 1930-1945 / Armacost Pontiac Inc. 1969-1976 | 1401 Baltimore Ave. | EDR Historical Auto | 2 |

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| M 87 | E69 | MO State Building Block #139 Former | 1411 Main St. | RCRA NonGen/NLR | 3 |
| J 88 | E70 | 1408 10 J W Parking Garage - 1961 | 1408 Walnut St. | EDR Historical Auto | 2 |
| N 89 | E71 | Miller Sam Coach CO Auto Repairs | 1522 McGee St. TRFY | EDR Historical Auto | 2 |
| J 90 | E72 | 1405 07 Diamond Garage - 1935-1940 | 1405 Walnut St. | EDR Historical Auto | 2 |
| N 91 | E73 | National Refining CO Filling Station - 1925 | 1528 McGee St. | EDR Historical Auto | 2 |
| N 92 | E74 | Miller Sam Coach CO Auto Repairs - 1945 / Storys Auto Repair 1985-1990 | 1520 McGee St. TRFY | EDR Historical Auto | 2 |
| H 93 | E75 | Acme Auto & Machine Works - 1930 | 119 W. 14th St. | EDR Historical Auto | 2 |
| O 94 | E76 | Shermans Phillips -1956 | 306 Truman Rd. | EDR Historical Auto | 2 |
| H 95 | E77 | KC Motor Service Company - 1920 | 114 W. 14th St. | EDR Historical Auto | 2 |
| N 98 | E78 | Holiday Shirt Laundry - 1970 / Holiday Cleaners - 1971 / General Motor - 1966 / Cramers Auto Service - 1975 | 1515 McGee St. TRFY | EDU Historical Cleaner, EDR Historical Auto | 2 |
| N 99 | E79 | Fessler Auto Body & Fender Works - 1945 | 1517 McGee St. TRFY | EDR Historical Auto | 2 |
| M 100 | E80 | KC Live Entertainment District - Block 138 | 1400 Main St., 1401 Baltimore Ave., 1415 Baltimore Ave. | BROWNFIELDS, VCP, AUL, SMARS | 3 |
| M 101 | E81 | Midland Cleaners & Tailors - 1945 | 4 W. 14th St. | EDU Historical Cleaner | 2 |
| M 102 | E82 | Grand Tailors & Cleaners - 1930-1935 / Midland Cleaners & Tailors - 1940-1951 | 2 W. 14th St. | EDU Historical Cleaner | 2 |
| M 103 | E83 | Clarence Levitt Cleaners - 1920 / Travis S Kane Cleaner - 1925 / Central Cleaners - 1930-1935 | 5 E. 14th St. | EDU Historical Cleaner | 2 |
| M 105 | E84 | Upsher Laboratories Inc. | 20 E. 14th St. | RCRA NonGen/NLR, ECHO, FINDS | 3 |
| J 107 | E85 | Grand Cleaners - 1961-1966 | 106 E. 14th St. | MO DRYCLEANERS, EDU Historical Cleaner | 2 |
| P 108 | E86 | Parmalee Industries Inc. | 1535 Walnut St. | RCRA NonGen/NLR, ECHO, FINDS | 3 |

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| L 110 | E87 | KCPL Building / West 14th St. and Wyandotte St. | 106 W. 14th St. | RCRA NonGen/NLR, ECHO, FINDS, VCR, SMARS | 3 |
| Q 111 | E88 | Stones Cleaners - 1935 | 1604 Broadway Blvd. | EDU Historical Cleaner | 2 |
| O 113 | E89 | City of Kansas City MO Block #142 | 1415 McGee St. | RCRA NonGen/NLR, ECHO, FINDS | 3 |
| Q 114 | E90 | Meins Auto Repair - 1961 | 1612 Broadway Blvd. | EDR Historical Auto | 2 |
| R 115 | E91 | Chase Hose Drugs - 1925 | 1336 Broadway Blvd. | EDR Historical Auto | 2 |
| R 117 | E92 | Kerr Woodfin C Fill Station - 1941 / Bills Downtown Mobil Service - 1971 / Hutton & Hicks Inc. - 1972-1975 | 1331 Broadway Blvd. | EDR Historical Auto | 2 |
| R 118 | E93 | A & A Motor Service - 1920 | 1327 Broadway Blvd. | EDR Historical Auto | 2 |
| S 119 | E94 | Blaue Geo H Auto Brakes - 1930 | 11 E. 16th St. | EDR Historical Auto | 2 |
| S 120 | E95 | Davis & Muehleisen Auto Painting - 1920 | 18 E. 16th St. | EDR Historical Auto | 2 |
| S 121 | E96 | Tiffany Marble | 16th St & Main St. | PFAS ECHO | 3 |
| T 123 | E97 | 16th and Grand, McGrew Color Graphics | E. 16th St. & Grand Blvd. | MO SMARS, MO VCP, PFAS ECHO | 2 |
| T 124 | E98 | Arnold Services Station - 1935 | 205 E. 16th St. | EDR Historical Auto | 2 |
| R 125 | E99 | Millers Texaco - 1945-1969 / Rohrs Texaco Service 1969-1976 / Convention Center Texaco - 1983 | 1318 Broadway Blvd. | EDR Historical Auto | 2 |
| U 126 | E100 | Chas F Clark Cleaner - 1920 / Chas F Clark Cleaner - 1925 | 512 W. 14th St. | EDU Historical Cleaner | 2 |
| S 128 | E101 | Manhattan Oil Company Filling Station - 1925 / Scudder Chas W Jr Fill Station - 1940 | 1600 Main St. | EDR Historical Auto | 2 |
| V 129 | E102 | Glover Sales Company Gasoline Equipment - 1925 | 1324 Grand Blvd. | EDR Historical Auto | 2 |
| P 130 | E103 | Jones Tharp Motors Company - 1920 | 1600 Grand Blvd. | EDR Historical Auto | 2 |
| P 131 | E104 | Bentley Ervie C Fill Station - 1930-1935 / Littrell Eug Fill Station - 1940 | 1600 Walnut St. | EDR Historical Auto | 2 |
| W 133 | E105 | KCPL Wyandotte Garage, Kansas City Power & Light | 1319 Wyandotte St. | LUST, UST, RCRA NonGen/NLR, ECHO, FINDS | 2 |

| EDR Report Site Number | Exhibit Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority * |
|---|---|---|---|---|---|
| X 134 | E106 | Bradford Cleaners - 1930 | 223 W. 16th St. | EDU Historical Cleaner | 2 |

1 = Moderate-to-High Potential for Contamination
2 = Low-to-Moderate Potential for Contamination
3 = None-to-Low Potential for Contamination

**Table 3-13: Hazardous Material Sites Near the Project Study Area – MoDNR Database Only**

| E-Start Report Number | Shared EDR Site Number | Name and Dates of Operation if Available | Address | Status/Federal or State Program List | Priority |
|---|---|---|---|---|---|
| **MoDNR E-Start Sites** | | | | | |
| 7 | None | President Hotel | 1329 Baltimore Ave. | Long-Term Stewardship | 3 |
| 11 | None | Walnut Street Tank | 15th St. and Walnut | Former UST | 1 |
| 14 | None | Downtown Source | 1401 McGee St. | Former UST | 3 |

1 = Moderate-to-High Potential for Contamination
2 = Low-to-Moderate Potential for Contamination
3 = None-to-Low Potential for Contamination

### 3.20.1 Hazardous Material Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative will not directly impact any hazardous material sites within or near the project study area.

Preferred Alternative Impacts
No potentially hazardous sites were identified within the project study area for either Preferred Alternative. Only one site with "*moderate-to-high*" priority was noted within 500-feet of the project study area. All other sites near the project study area are classified as having either "*low-to-moderate*" or "*none-to-low*" probability of contamination. Therefore, impacts to nearby hazardous waste sites are unlikely. To the extent possible, known hazardous waste sites would be avoided before and during construction. If a previously unknown site is uncovered during construction, measures will be taken, as needed, to eliminate or minimize adverse environmental consequences [Commitment 27].

In the unlikely event that hazardous materials are encountered during construction, the contractor will cease work at the suspect site immediately. The contractor will contact the appropriate environmental agency, in this case MoDNR, to discuss options for remediation. The MoDNR, EPA, the City of Kansas City, and the contractor will develop a plan for sampling, remediation, and continuation of project construction. Hazardous materials consulting, analytical, and remediation services will be obtained if necessary [Commitment 27].

## 3.21 Visual Resources

The visual environment within the project study area is mostly a commercial urban landscape with medium to high-rise office, hotel, and apartment structures except for the below-grade section of I-670 as it traverses through the project study area. Visual impacts can vary substantially through a project area since landscape elements can vary in their degree of visual quality and in viewer concern. There are two distinct categories of views: 1) a view of the road, which represents individuals (visual receptors) that can observe the roadway from an adjacent vantage point or who would have desirable views interrupted by the road, and 2) a view from the road which represents viewers who are users of the proposed facility.

### 3.21.1 Visual Resource Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative would not directly impact any visual resources within or near the project study area.

Preferred Alternative Impacts
Both Preferred Alternatives would construct a structural deck over I-670. If the Eastern Superblock is chosen, the structural deck would be constructed between Main Street and Grand Boulevard while closing Walnut Street over I-670. The existing Main Street, Baltimore Avenue, and Grand Boulevard bridges would be maintained. Individual structural decks between Wyandotte Street and Baltimore Avenue and Baltimore Avenue and Main Street would be constructed to complete the structure. If the Western Superblock is chosen, the structural deck would be constructed between Wyandotte Street and Main Street while closing Baltimore Avenue over I-670. The existing Main Street, and Grand Boulevard bridges would be maintained, and the Walnut Street bridge would be replaced. Individual structural decks between Main Street and Walnut Street and Walnut Street and Grand Boulevard would be constructed to complete the structure.

The combination of the existing Bartle Hall Convention Center, the Convention Center Grand Ballroom, new individual structural decks, a new eastern or western superblock structural deck, and existing bridges would functionally create a 2,200-foot long tunnel in which I-670 would be confined. Both Preferred Alternatives propose to include a variety of spaces for pedestrians including a meandering pathway, hardscape plaza space, visitor building, an elevated pedestrian walkway, restroom building, fitness play area, children's play area, retail kiosk, interactive art and water play areas, dog run, performance pavilion, and small food and beverage service buildings to support visitors. The structural deck would support landscape improvements such as native plantings, shade trees, and flexible lawn spaces.

The addition of these spaces would increase the visual resources within the project study area by covering the paved interstate system and creating a new, more visually appealing open space for community cohesion and gathering.

## 3.22 Utilities

Utility information was compiled from existing mapping, survey, and available online information from local municipalities and utility companies. The locations of existing utility infrastructure above-ground and below-ground within and around the project study area were identified. Utilities identified include water, sewer, gas, electric, cable television, telephone lines, and fiber optic lines. Potential service disruptions that could occur from the Preferred Alternatives were evaluated at a high level, as well as the need for future improvements to the existing utility infrastructure. That evaluation helped determine potential impacts.

Electrical services are provided by Evergy, and Spire provides natural gas service. KCWater provides water service and sewer lines within and around the project study area. Other utilities include resources from the following providers:

- Telephone: AT&T, Sprint, Verizon, Spectrum;
- Television: DIRECTV, Dish, Spectrum, Charter, and Comcast; and
- Internet: Google Fiber, Spectrum, and AT&T.

Utilities in the project study area are both buried underground and hung on above-ground poles. **Exhibit 3-13** displays select utilities within the project study area.

### 3.22.1 Utility Impacts

No-Build Alternative Impacts
There is no new construction associated with the No-Build Alternative, therefore the No-Build Alternative would not impact any utilities within the project study area.

Preferred Alternative Impacts
The Preferred Alternatives would likely impact underground and above-ground utilities and relocations may be required to accommodate the project improvements. If relocations are necessary, coordination with utility companies and the City of Kansas City will occur during final design to minimize the impact of relocations. The responsible party for any relocations will obtain the necessary clearances should they occur outside of the project study area. Mitigation strategies shall be developed according to the City's utility relocation guidelines. Utility relocation design shall be coordinated with, and be in compliance with, the requirements of the municipality, utility owners, and the applicable codes, regulations, and policies as established by, but not limited to, the Kansas City Missouri Building Code, KCMO Water Services Department, and Jackson County Unified Development Code [Commitment 28].

Most impacted utilities would be relocated nearby. Coordination with the public and private utility companies will be required during the design phase to ensure utility service is uninterrupted or only minimally disrupted during utility relocation and construction of the proposed improvements [Commitment 28].

Abandonment, relocation, restoration, maintenance, and extension of existing overhead utility lines, poles, and appurtenances, including service lines to adjoining properties, will be performed by the utility owners in accordance with laws and regulations of the appropriate jurisdiction, utility owners' standards, the National Electrical Safety Code (NESC), and the appropriate owner utility company or their approved contractor. Poles supporting overhead facilities may be owned

by one party and shared with or rented to others under mutual agreement. Possible utilities in this joint-use arrangement are:

- Electric Cables
- Telephone Cables
- Cable Television
- Railroad Communication Lines
- Police, Fire Alarm, and other Government Lines
- Streetlights and Traffic Signals
- Overhead Catenary Lines

The designers shall coordinate their efforts with those of the owners to assure City of Kansas City plans include designs mutually acceptable to the owners and the City. All design work, maintenance, and relocation efforts, of underground and above-ground electric lines throughout the project study area shall be designed based on current practices of the power company, the requirements of the electrical code of the local agency having jurisdiction, and the NESC.

## 3.23 Safety, Security, and I-670 Tunnel Considerations

The construction of a structural deck over I-670 would introduce several new safety and security topics. Those include the creation of a new 2,200-foot I-670 tunnel and the intent to construct a multifaceted park, recreation, and green open space area on top of the structural deck that would be generally open to the public. The potential construction of facilities within the park and green open space may require monitoring and security systems to ensure public safety.

### 3.23.1 I-670 Tunnel Considerations

The NFPA *502 Standard for Road Tunnels, Bridges, and Other Limited Access Highways* lays out the specific fire protection and life safety goal requirements for the systems and elements for the proposed I-670 tunnel and elements of the structural deck. Fire protection and life safety systems must be provided per the NFPA 502 Standard and are based on the overall tunnel length and an assessment of the specific project site [Commitment 29]. Specific requirements for road tunnels are dependent on the tunnel category identified. The proposed tunnel for this project falls under category C. The conditional mandatory requirements (CMR) and the mandatory requirements (MR) for a category C tunnel can be found in **Figure 3-1.** The CMRs and MRs for this project will be determined by the KCMO Planning and Development Department.

**Figure 3-1: Conditional and Mandatory Requirements for Tunnels**

| Fire Protection Systems | NFPA 502 Sections | Road Tunnel Categories: X *[See 7.2(1).]* | A *[See 7.2(2).]* | B *[See 7.2(3).]* | C *[See 7.2(4).]* | D *[See 7.2(5).]* |
|---|---|---|---|---|---|---|
| **Engineering Analysis** | | | | | | |
| Engineering analysis | 4.3.1 | MR | MR | MR | MR | MR |
| **Fire Protection of Structural Elements**[a] | | | | | | |
| Fire protection of structural elements | 7.3 | MR | MR | MR | MR | MR |
| **Fire Detection** | | | | | | |
| Detection, identification, and location of fire in tunnel | 7.4 | — | — | MR | MR | MR |
| CCTV systems[b] | 7.4.3 | — | — | CMR | CMR | CMR |
| Automatic fire detection systems[b] | 7.4.6.7 | — | — | CMR | CMR | CMR |
| Fire alarm control panel | 7.4.7 | — | — | MR | MR | MR |
| **Emergency Communications Systems**[c] | | | | | | |
| Emergency communications systems | 4.5/7.5 | CMR | CMR | CMR | CMR | CMR |
| **Traffic Control** | | | | | | |
| Stop traffic approaching tunnel portal | 7.6.1 | MR | MR | MR | MR | MR |
| Stop traffic from entering tunnel's direct approaches | 7.6.2 | — | — | MR | MR | MR |
| **Fire Protection** | | | | | | |
| Fire apparatus[d] | 7.7 | — | — | — | — | — |
| Fire standpipe | 7.8/10.1 | — | MR | MR | MR | MR |
| Water supply | 7.8/10.2 | — | MR | MR | MR | MR |
| Fire department connections | 10.3 | — | MR | MR | MR | MR |
| Hose connections | 10.4 | — | MR | MR | MR | MR |
| Fire pumps[e] | 10.5 | — | CMR | CMR | CMR | CMR |
| Portable fire extinguishers | 7.9 | — | — | MR | MR | MR |
| Fixed water-based fire-fighting systems[f] | 7.10/9.0 | — | — | — | CMR | CMR |
| Emergency ventilation system[g] | 7.11/11.0 | — | — | CMR | CMR | MR |
| Tunnel drainage system[h] | 7.12 | — | CMR | MR | MR | MR |
| Hydrocarbon detection[h] | 7.12.7 | — | CMR | MR | MR | MR |
| Flammable and combustible environmental hazards[i] | 7.15 | — | — | CMR | CMR | CMR |
| **Means of Egress** | | | | | | |
| Emergency egress | 7.16.1.1 | — | — | MR | MR | MR |
| Exit identification | 7.16.1.2 | — | — | MR | MR | MR |
| Tenable environment | 7.16.2 | — | — | MR | MR | MR |
| Walking surface | 7.16.4 | — | — | MR | MR | MR |
| Emergency exit doors | 7.16.5 | — | — | MR | MR | MR |
| Emergency exits (includes cross-passageways)[j] | 7.16.6 | — | — | MR | MR | MR |
| **Electrical Systems**[k] | | | | | | |
| General | 12.1 | — | CMR | MR | MR | MR |
| Emergency power | 12.4 | — | CMR | MR | MR | MR |
| Emergency lighting | 12.6 | — | CMR | MR | MR | MR |
| Exit signs | 12.6.8 | — | CMR | MR | MR | MR |
| Security plan | 12.7 | — | CMR | MR | MR | MR |
| **Emergency Response Plan** | | | | | | |
| Emergency response plan | 13.3 | MR | MR | MR | MR | MR |

MR: Mandatory requirement (3.3.42). CMR: Conditionally mandatory requirement (3.3.42.1).
Source: NFPA 502



NFPA 502 defines the Authority Having Jurisdiction (AHJ) as "an organization office, or individual responsible for enforcing the requirements of a code or standard, or having approving equipment, materials, an installation, or a procedure." For this project, City of Kansas City will act as the AHJ, with other relevant stakeholders as listed below:

- Interstate owner: MoDOT
- Owner of existing overbuilt structure: KCMO
- Interstate operations: MoDOT
- Interstate maintenance: MoDOT
- Responding fire department: KCFD
- Responding police department: KCPD
- Tunnel Maintenance: To Be Determined by Airspace Agreement

MoDOT currently maintains I-670 in accordance with FHWA and MoDOT regulations and requirements as well as other applicable federal regulations. Among the regulations are requirements for inspection of roads, signals, bridges, and equipment. The current below-grade section of I-670 in the project study area is already partially covered from Wyandotte Street to Broadway Boulevard by the Bartle Hall Convention Center and Ballroom. The rest of the below-grade section is uncovered, except at the four existing bridges over I-670.

### 3.23.2 Tunnel Consideration Impacts and Mitigation

No-Build Alternative Impacts
The No-Build Alternative would leave the existing below-grade section of I-670 in service in its current configuration. Operations and maintenance would continue as necessary to address routine and ongoing deterioration to the extent possible. While the existing below-grade section of I-670 is operational, existing MoDOT and City of Kansas City safety and security measures and procedures will continue to be followed [Commitment 29].

Preferred Alternative Impacts
Outside of the impacts outlined in this document, construction of a tunnel would not have additional impacts but would involve many requirements pursuant to NFPA 502, MoDOT and FHWA regulations, and other state and local requirements [Commitment 29]. As project design phases progress, the following design and systems considerations will be taken into account (requirements listed below were current at the time of approval of the EA):

- **Tunnel ventilation** - As outlined in NFPA 502, Chapter 7.11, a ventilation system is not required for tunnels that are shorter than 3,280 feet in length. The length of the proposed I-670 tunnel is 2,200 feet. Conceptual design for this project does not assume a tunnel ventilation system.

- **Emergency exits** - NFPA 502 Chapter 7.16 states that the allowed distance between emergency exits is 1,000 feet at maximum distance.

- **Emergency communication systems** - Pursuant to NFPA 502 Chapter 4.5 and 7.5, emergency communications systems are required to be provided if required by the AHJ, which is the City of Kansas City in this case. Additionally, reliable radio communications are required to be provided by emergency services.

- **Standpipe, fire hydrants, and water supply systems** - NFPA 502 Chapter 7.8/10 deals with standpipes, whether dry or wet, water supply, and fire department hose connections that must be provided.

- **Fixed Fire Fighting Systems (FFFS)** - Considering the high traffic volumes and the possibility of Flammable Liquid Cargo (FLC), HGV, and alternative fuel fires, a high-pressure water mist FFFS can act as an alternative to structural fire protection measures.

- **Drainage** - According to NFPA 502 Chapter 7.12, the drainage system will be constructed of noncombustible materials and must be designed for the spill of a FLC transport tank and for fire extinguishing water.

- **Power supply** - In the event of failure of the initial power supply to the tunnel, emergency power shall be available, per NFPA 502 Chapter 12 and NFPA 70. Utility connections to two independent power distribution grid substations that provide separate service is required. An uninterruptable power supply (UPS) will be provided to ensure that all safety relevant systems (Fire Alarm System (FAS), emergency lighting, wayfinding lighting) are never disrupted for longer than 0.5 seconds.

- **Traffic control** - Per NFPA 502 Chapter 7.6, traffic control is identified as an essential safety system and in the case of a fire in the tunnel, all tunnel portals and entry ramps on both tunnel tubes are required to be closed.

- **Incident detection -** In accordance with NFPA 502 Chapter 7.4 incident detection that is quick and reliable is essential to release automatic, immediate reaction of active safety systems (tunnel closure, traffic management, FFFS, etc.) and alarm tunnel operators and emergency services.

- **Dividing wall**s - Dividing walls between tunnel tubes are required in order to separate traffic and airflow, especially during a fire where separation can provide a safe, smoke-free space in the adjacent tunnel tube.

- **Control of Hazardous Materials/Environmental Hazards & Alternative Fuels** - NFPA 502 Chapters 7.14 and 7.15 identifies measures that can reduce the risks that would result from flammable combustible environmental hazards on the highway.

- **Tunnel control and operation** - Operation of each tunnel system (lighting, signaling, etc.) in normal and emergency modes is recommended as fully automatic, with manual override capability by operators in a remote operations control center.

- **Inspection, Testing, and Maintenance** - Inspection, testing, and maintenance (ITM) of tunnel systems are required. An ITM plan will be developed in accordance with federal and local code requirements. Structural inspection cycles will likely occur for 24 months, and equipment ITM cycles for 12 months. No equipment must require shorter maintenance intervals under tunnel conditions. Additionally, high quality and reliability of tunnel equipment is essential, considering the harsh environmental conditions and potential wet and corrosive atmosphere in the tunnel.

- **Emergency Response Plan** - Pursuant to NFPA 502 Chapter 4.4 an emergency response plan must be prepared in close collaboration with emergency services, the fire department, tunnel operators, and other stakeholders from early staging of the project and may have an impact on the safety concept.

### 3.23.3 Structural Deck Amenities Impacts and Mitigation

The construction of the structural deck with public park, recreation, and green open space amenities would introduce the need for safety and security measures to protect the general public. Conceptually, amenities on the new property may include an amphitheater, pavilions for food and beverage purchases, public restrooms, and other small-scale buildings for administration, meetings, and public gatherings. Operational constraints such as park hours, safety monitoring, and police patrols have not been determined, however a camera and video system would likely be

installed to monitor all portions of the site all at times. Similarly, emergency phones and call boxes would be situated at key locations on the property.

Emergency response vehicles would be provided access to public plazas and the remainder of the property through rolled or zero-level curbing, ensuring that no portion of the park would be difficult to reach during or after incidents.

During construction, the contractor will be required to keep the construction site, materials, and equipment secure, as well as construction workers safe from natural events (e.g., severe storms, flooding, fires, etc.), or emergencies caused by human error, mechanical failure, or intentional human intervention. Construction contractors would be required to meet all applicable safety and security requirements pursuant to local, state, regional, and federal regulations [Commitment 19].

## 3.24 Cumulative and Indirect Effects

### 3.24.1 Cumulative Effects

The CEQ defines cumulative effects as the effects on the environment which result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively substantial actions taking place over a period of time (40 C.F.R. 1508.7).

Cumulative effects associated with the construction of the proposed project include those impacts resulting from the construction of a structural deck over I-670, the creation of a park or green open space on the new property above I-670, and the closure of the existing Walnut Street or Baltimore Avenue bridge and lane reductions on westbound and eastbound portions of Truman Road. Additionally, the project would impact area land use and population and economic development.

**Land Use**

The project study area is located entirely within MoDOT and the City of Kansas City transportation ROW and, therefore, does not have any other land use designation. Land use designations north of the project study area are dominated by institutional, office, commercial (non-office), and paved surface parking lot. The Kansas City Convention Center and the Grand Ballroom are built over I-670 in the western portion of the project study area. Retail, entertainment, food and drink establishments, and other mixed uses are found in the Power and Light District to the north. Other developments adjacent to the project study area include a movie theater, multiple multifamily apartment buildings, various restaurants and retail shops, and additional offices and parking. Buildings and land use immediately south of the project study area include additional paved surface parking lot areas, apartment buildings, restaurants, retail shops, and convention center-focused hotels.

Construction of either Preferred Alternative would not, by itself, change any land uses in or around the project study area, primarily due to the lack of property acquisitions necessary to construct the project. However, the creation of green open space intended for community gathering, special events, and passive open space may spur additional development and re-development adjacent to the project study area. Any new development or re-development would need to be consistent with

the City of Kansas City zoning ordinances and future land use plans and policies in effect at that time.

**Population and Economic Development**

The project study area connects major concentrations of business, residential, and cultural activities. The City of Kansas City has experienced long-term growth trends in both population and economic activity. These trends are expected to continue into the foreseeable future. Population trends in Jackson County show steady recent growth from 2010 to 2020. The increase in population in Jackson County has consistently exceeded the statewide average annual growth rate for this period. Since 2000, Jackson County has experienced low unemployment rates and a positive annual growth in employment. The proposed project is expected to compliment Jackson County's positive population and economic activity trends. Additionally, the project is not expected to adversely impact foreseeable future trends.

**Summary and Actions by Others**

The following projects are currently planned or currently under construction within or adjacent to the project study area:

- Three Light Residential Tower – A residential use building currently under construction. Located north of North Truman Road and between Main Street and Walnut Street;
- Four Light Residential Tower – A planned residential use facility to be built north of North Truman Road between Baltimore Avenue and Main Street, adjacent to the existing movie theater;
- 1400KC Office Tower – A planned commercial use building nearing completion of construction. Located north of North Truman Road between Wyandotte Street and Baltimore Avenue;
- Lux Living Hotel/Apartment Tower – A planned mixed use building including a hotel and residential living. If constructed, this project would be located north of 14th Street between Wyandotte Street and Baltimore Avenue;
- Midland Lofts - Conversion of a historic office building into a 135-unit residential apartment building. Located on the northeast corner of 13th Street and Baltimore Avenue; and
- Multi-story Residential Buildings - Two planned residential buildings with ground-floor retail space at the southwest and southeast corners of South Truman Road & Main Street.

### 3.24.2 Indirect Effects

Construction of either Preferred Alternative would create indirect effects, which would occur later in time and outside the project study area. Adverse indirect impacts to the broader community are not anticipated. The Preferred Alternatives are anticipated to support access, connectivity, and mobility within the Kansas City area.

## 3.25 Resource Impact Summary

**Table 3-14** summarizes the impacts of the Preferred Alternatives to the resources discussed in this EA.

**Table 3-14: Summary of Impacts**

| Resource | Measure | No-Build Alternative | Preferred Alternative (Eastern Superblock) | Preferred Alternative (Western Superblock) |
|---|---|---|---|---|
| Community Resources (Police, Fire, Libraries, Hospitals, Houses of Worship) | Quantity | 0 | 0 | 0 |
| Environmental Justice Impacts (Displacements in EJ Areas) | Quantity | 0 | 0 | 0 |
| Economics | Positive / Neutral / Negative Impacts | Neutral | Positive | Positive |
| Parks Recreation Areas, Trails, Section 4(f) Resources | Quantity and acres | 0 | 0.14-acre privately owned dog park, 0 Section 4(f) properties | 0.14-acre privately owned dog park, 0 Section 4(f) properties |
| Bicycle and Pedestrian Facilities | Quantity and linear feet | 0 | 0 | 0 |
| Stormwater | Positive / Neutral / Negative Impacts | Neutral | Positive | Positive |
| Historical Sites or Districts | Quantity | 0 | 0 | 0 |
| Archaeological Sites | Quantity | 0 | 0 | 0 |
| Section 6(f) Properties | Quantity | 0 | 0 | 0 |
| Full Property Acquisitions | Number/Acres | 0 | 0 | 0 |
| Partial Property Acquisitions | Number/Acres | 0 | 0 | 0 |
| Wetland Impacts | Acres | 0 | 0 | 0 |
| Stream Impacts | Linear feet | 0 | 0 | 0 |
| Floodway Impacts | Acres | 0 | 0 | 0 |
| 100-year Floodplain Impacts | Acres | 0 | 0 | 0 |
| 500-year Floodplain Impacts | Acres | 0 | 0 | 0 |
| Threatened and Endangered Species Critical Habitat | Acres | 0 | 0 | 0 |
| Noise Impacts (2050 Design Year) | Sensitive receptors with impacts | 0 | 0 | 0 |
| Hazardous Material sites | Quantity and type | 0 | 0 | 0 |

# Exhibit 3-1: Land Uses

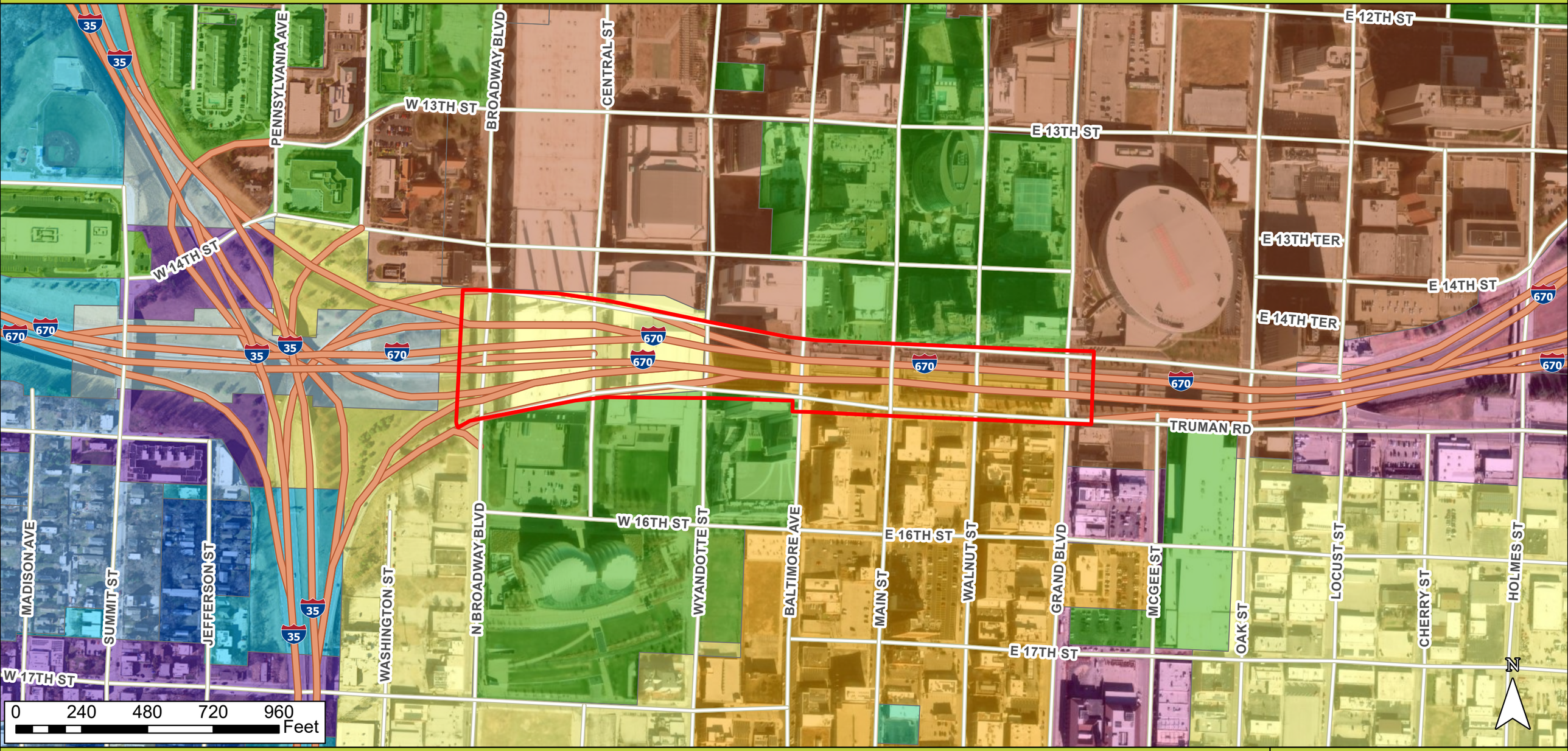

**Project Study Area**

**Land Use Designation**

- Residential / Hotel
- Commerical
- Industry
- Education / Convention
- Parking / Automobile
- Emergency Response / Public Safety
- Activity / Open Space
- Vacant Non-Residential (including billboards)
- ROW

SOUTH LOOP PROJECT

# Exhibit 3-2: Zoning Designations



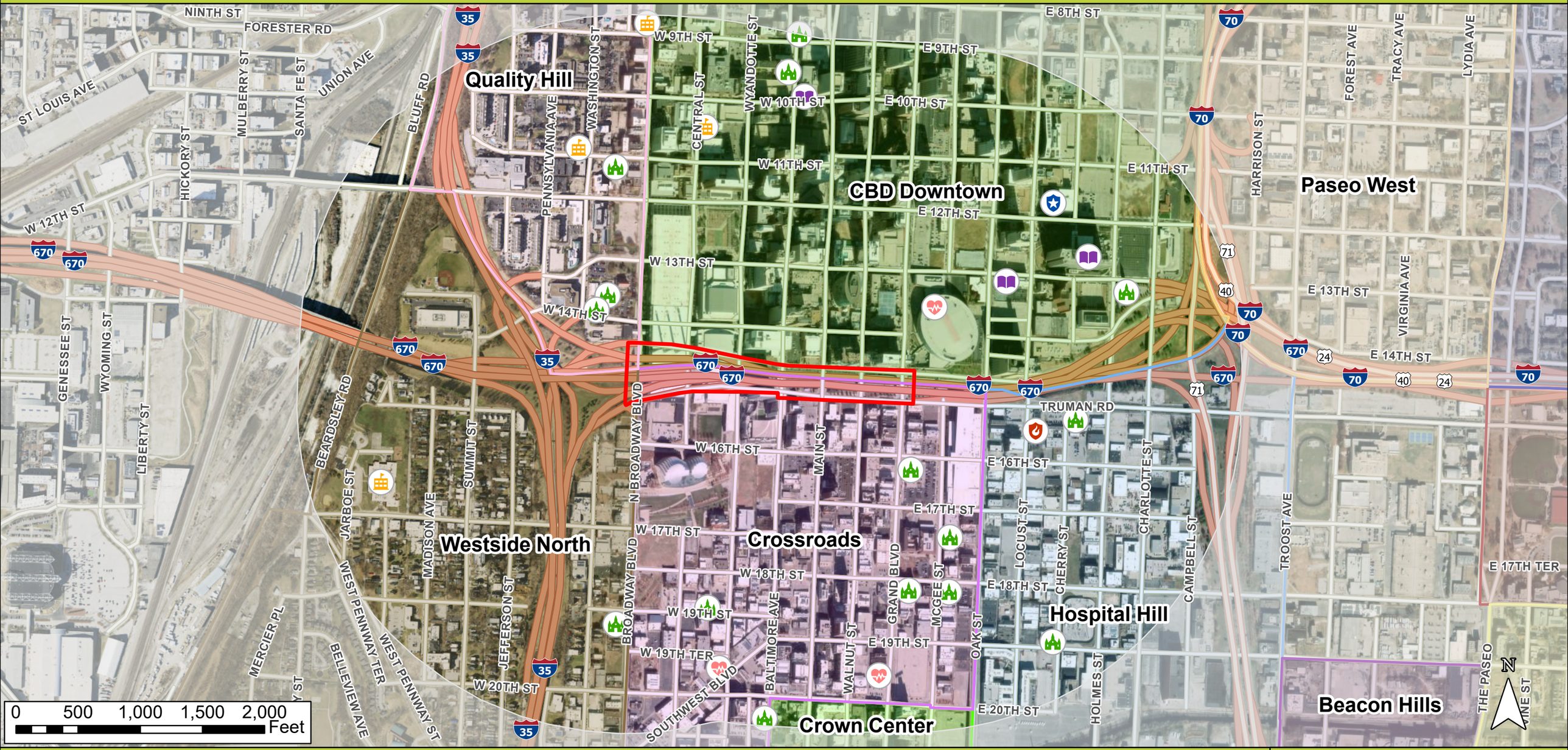

- Project Study Area

**Zoning Designation**

- Adult Entertainment
- Downtown Core
- Downtown Mixed-Use
- Heavy Business / Commercial
- Manufacturing 1
- Neighborhood Business 1
- Residential: 1 unit / 500 sq. ft.
- Residential: 1 unit / 1,500 sq. ft
- Residential: 1 unit / 2,500 sq. ft.
- Residential: 1 unit / 6,000 sq. ft.
- Urban Redevelopment

SOUTH LOOP PROJECT

# Exhibit 3-3: Community Resources




**Project Study Area**

**Community Resources**

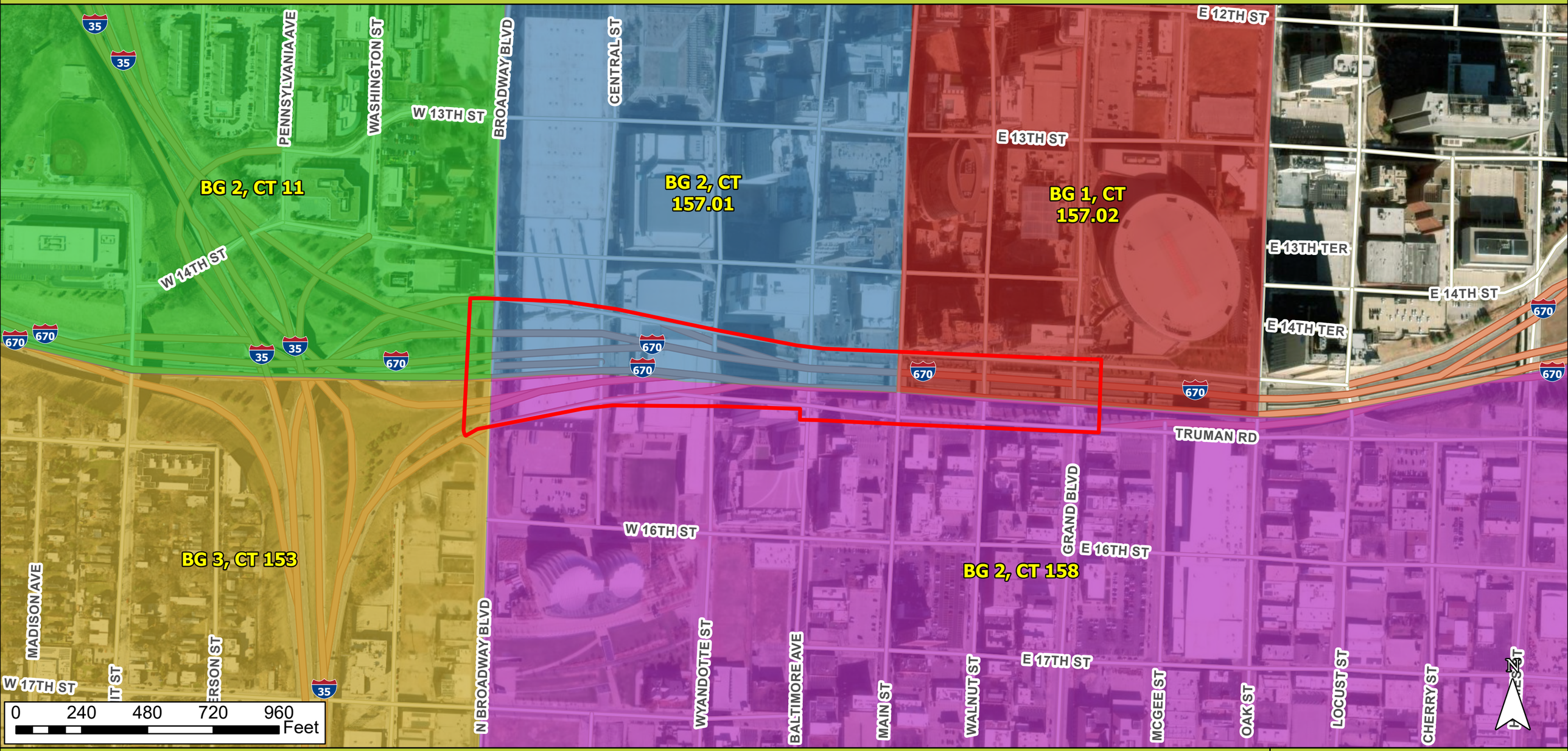
- Fire Station
- Health Care
- Library
- Place of Worship
- Police Station
- School

**Neighborhoods**

- 18th and Vine and Downtown East
- Beacon Hills
- CBD Downtown
- Crossroads
- Crown Center
- Hospital Hill
- Parkview
- Paseo West
- Quality Hill
- Wendell Phillips
- Westside North

SOUTH LOOP PROJECT

# Exhibit 3-4: Minority Populations




**Project Study Area**

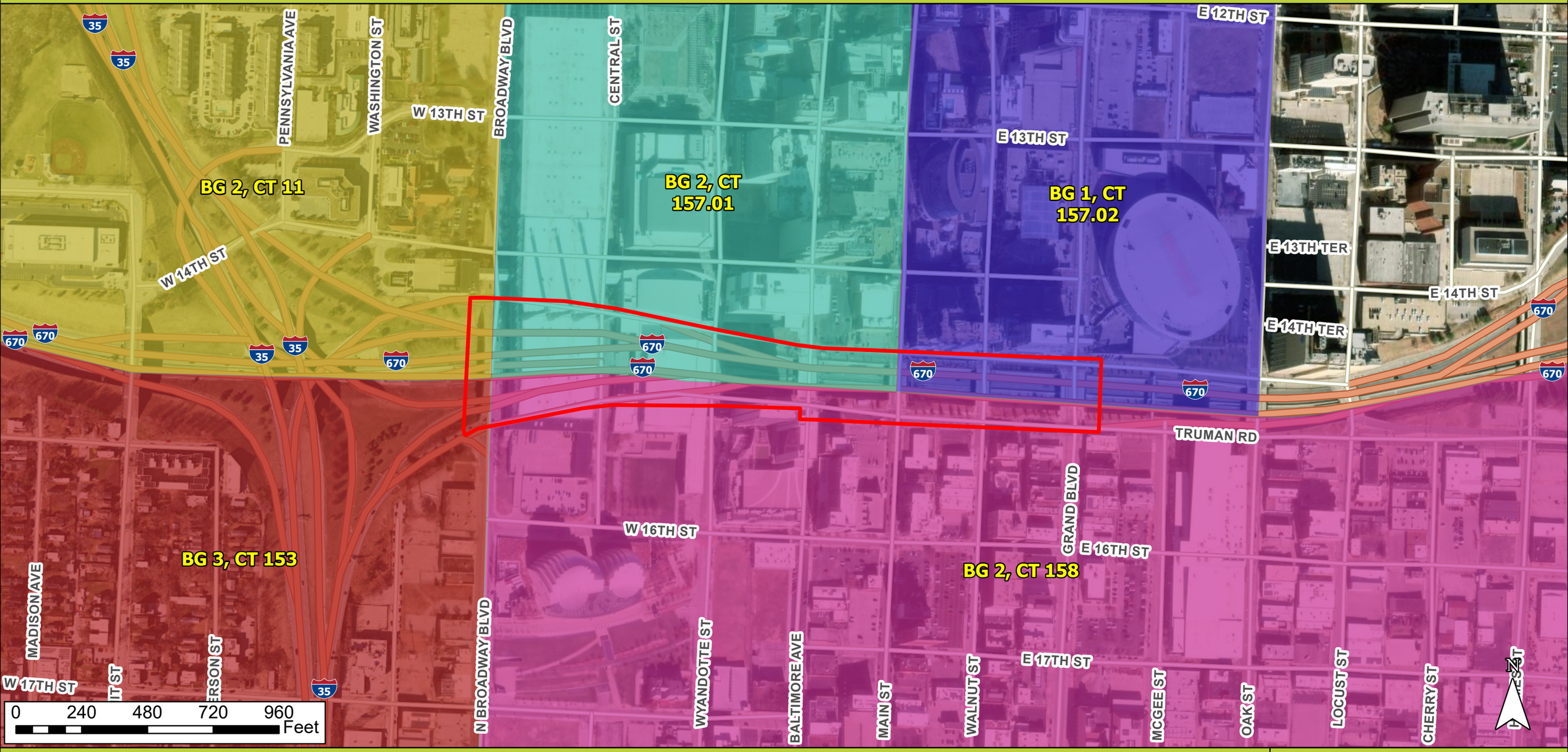
**Census Block Groups**

**Percent Minority**

- 13%
- 15%
- 22%
- 28%
- 45%

SOUTH LOOP PROJECT

# Exhibit 3-5: Low-Income Populations




Project Study Area

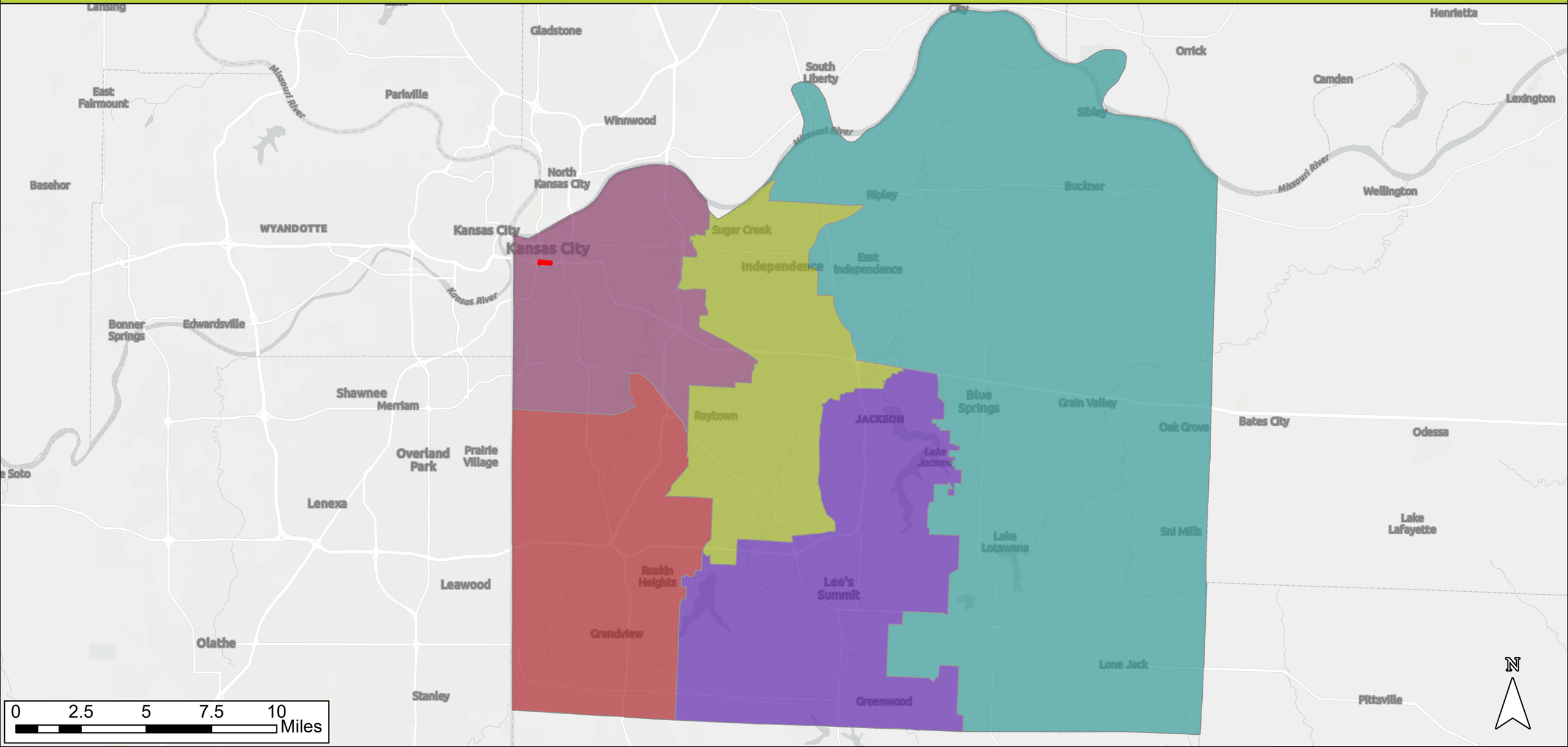
**Census Block Groups**

**Percent Below Poverty Level**

- 0%
- 4%
- 5%
- 18%
- 20%

SOUTH LOOP PROJECT

# Exhibit 3-6: Limited English Speaking Population




**Project Study Area**

**Percent of Limited English Speaking Populations**

- 1%
- 1.8%
- 2.7%
- 3%
- 8.5%

SOUTH LOOP PROJECT

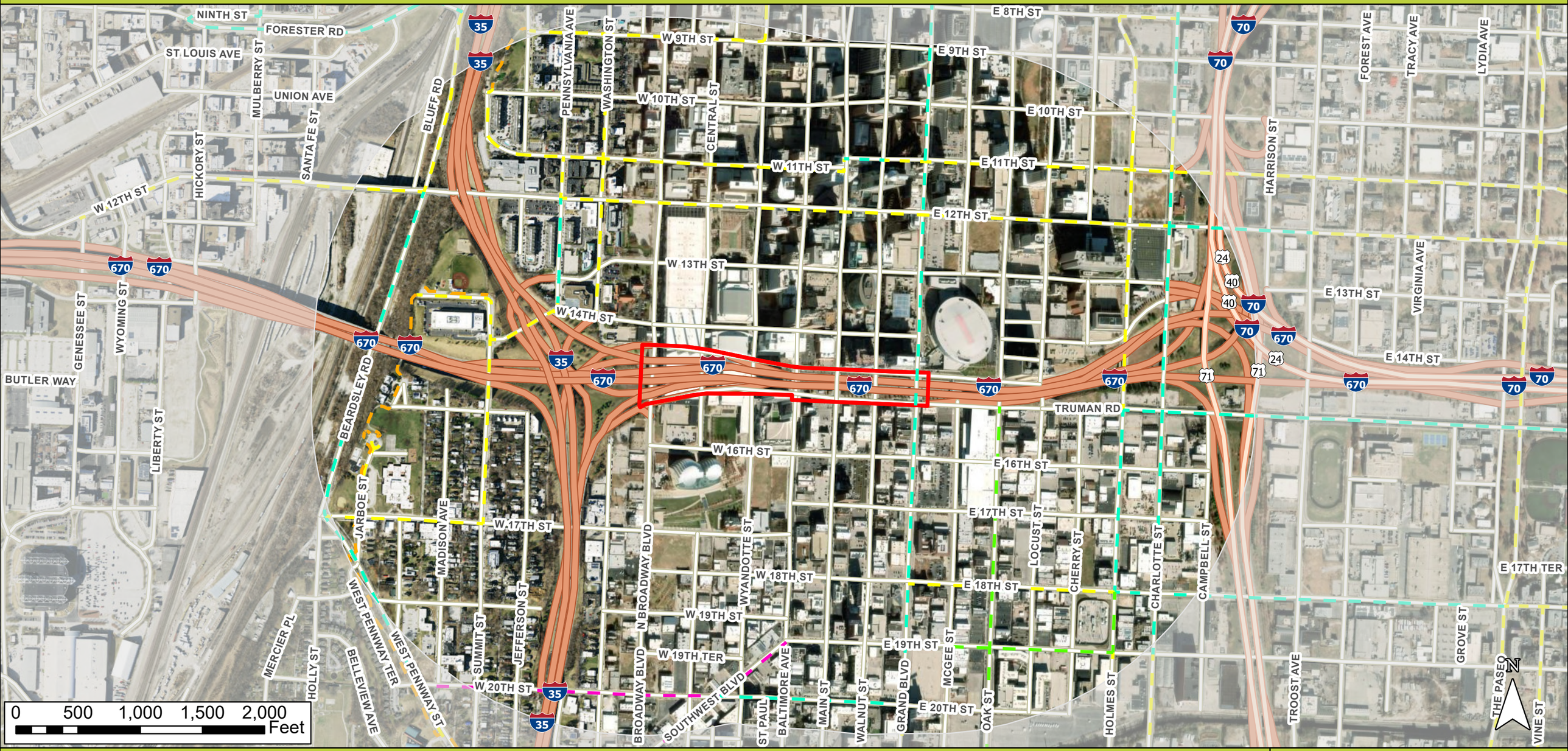
# Exhibit 3-7: Parks and Recreation Areas


**Project Study Area**

**Parks and Recreation Areas**

SOUTH LOOP PROJECT

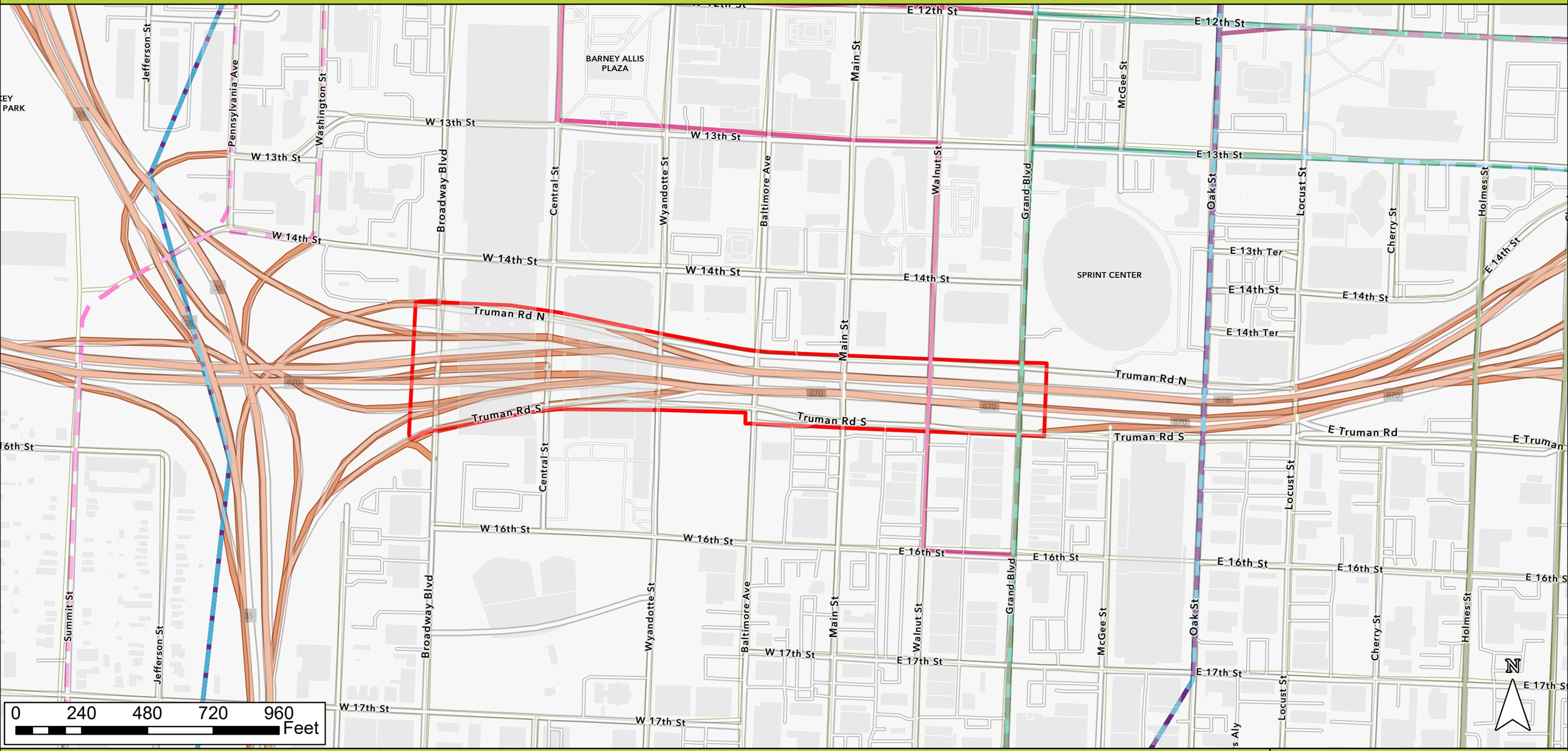
# Exhibit 3-8: Bicycle and Pedestrian Facilities




- Project Study Area
- Cycle Track
- Bike Lane
- Marked Bike Route
- Marked Share the Road
- Shared Use Path

SOUTH LOOP PROJECT

# Exhibit 3-9: Transportation Routes



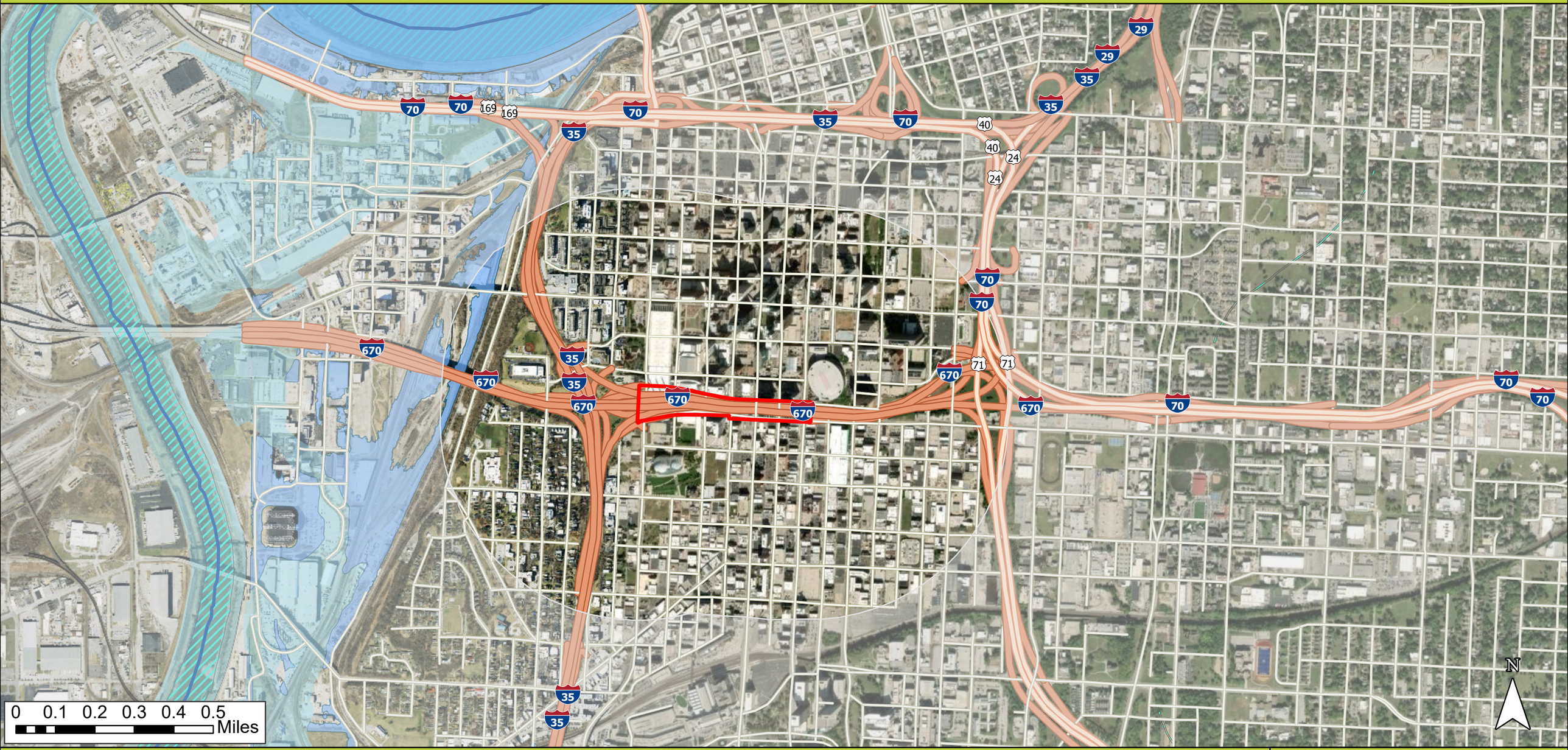

**Project Study Area**

**Transit Route**

- Blue Springs Express
- Broadway
- Gardner-OP Express
- Lee's Summit Express
- Main Street MAX
- Metcalf-Downtown
- North Oak
- Northeast-Westside
- Olathe Express
- Paseo
- Shawnee Express
- South OP Express
- Strang Line Express
- Troost MAX

SOUTH LOOP PROJECT

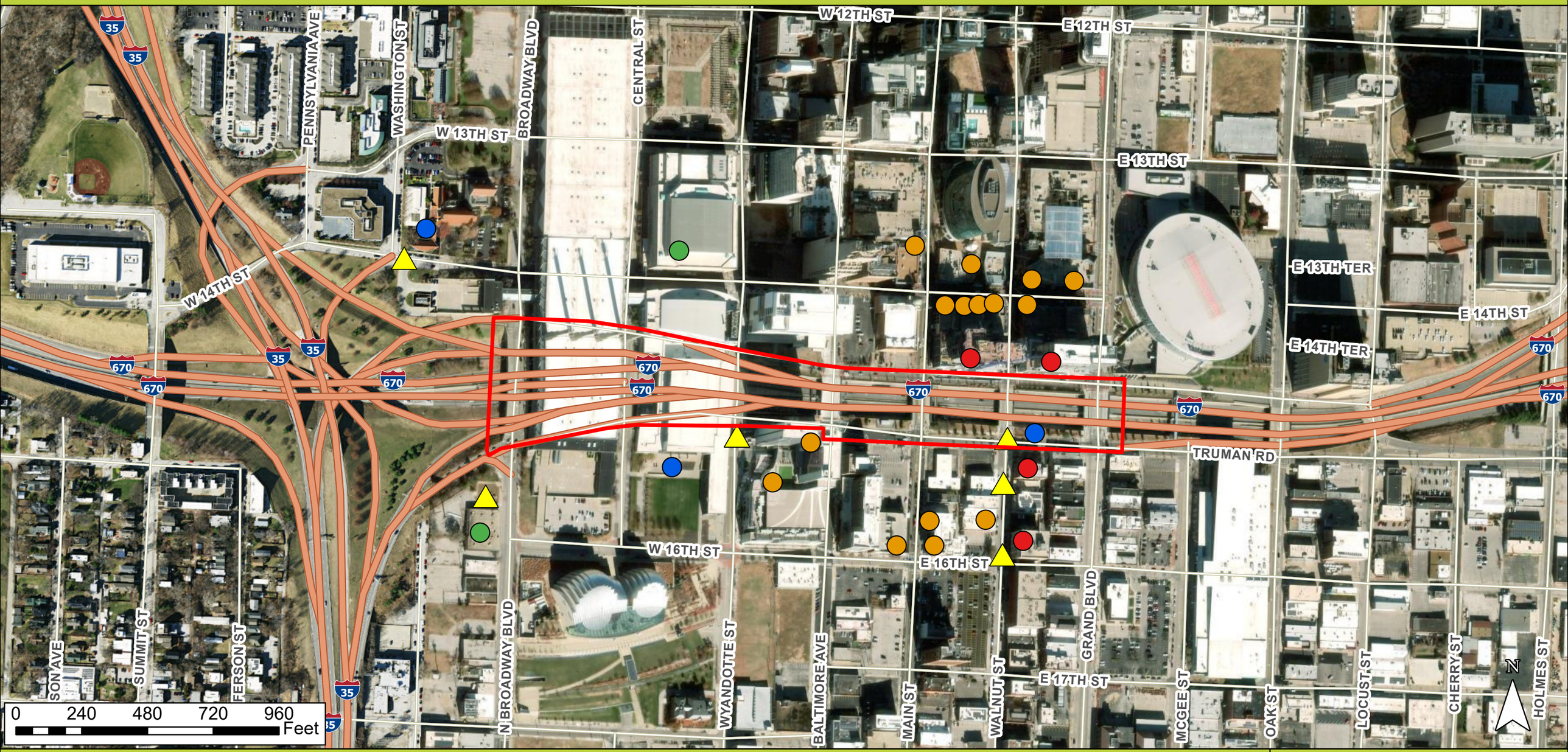
# Exhibit 3-10: Water Resources




- Project Study Area
- Rivers and Streams
- Floodway
- 500-Year Floodplain
- Riverine Wetland
- 100-Year Floodplain

SOUTH LOOP PROJECT

# Exhibit 3-11: Noise Sensitive Receptors




**Project Study Area**

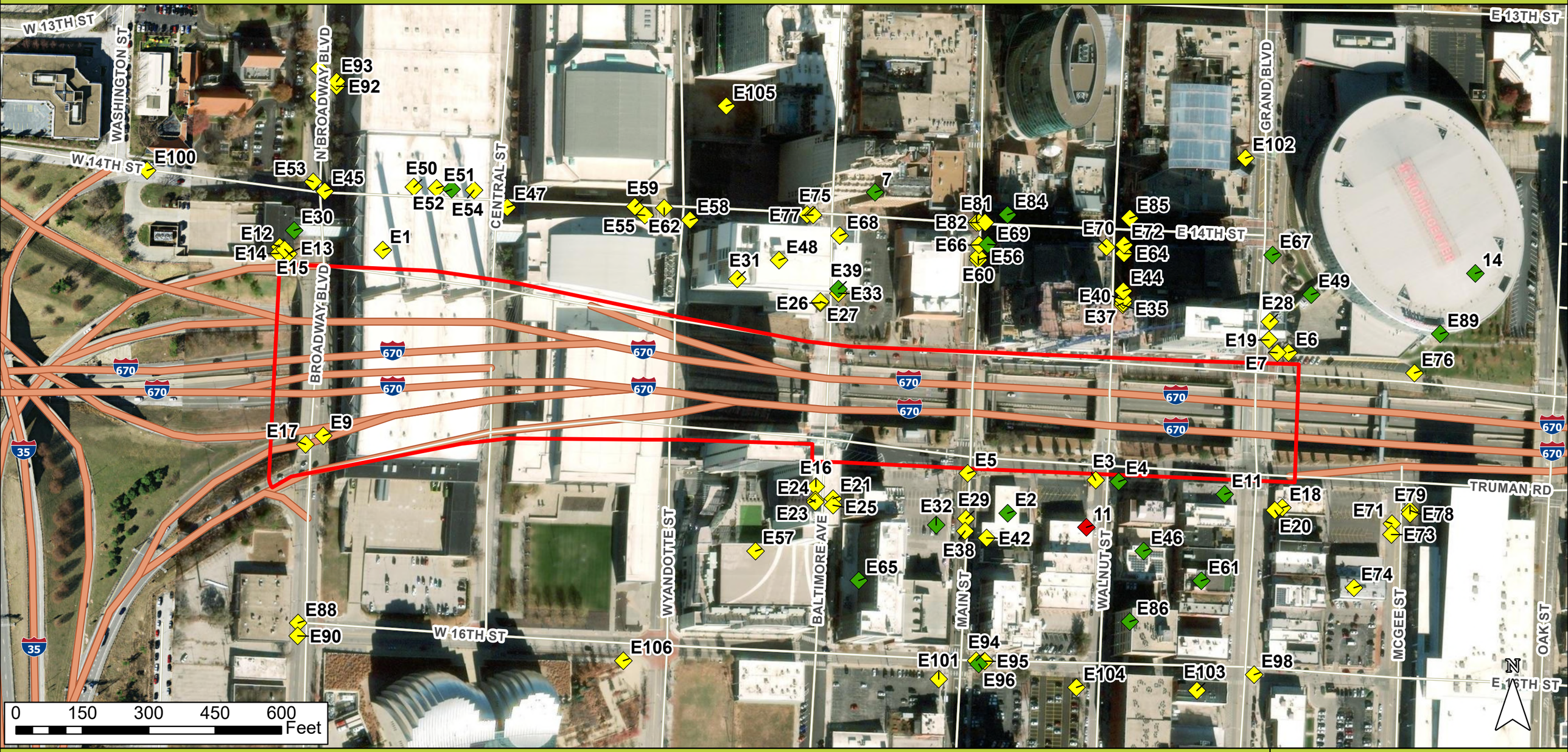
**Field Measurement Location**

**Noise Sensitive Receptors**

- **Activity Category B**
- **Activity Category C**
- **Activity Category D**
- **Activity Category E**

SOUTH LOOP PROJECT

# Exhibit 3-12: Hazardous Material Sites



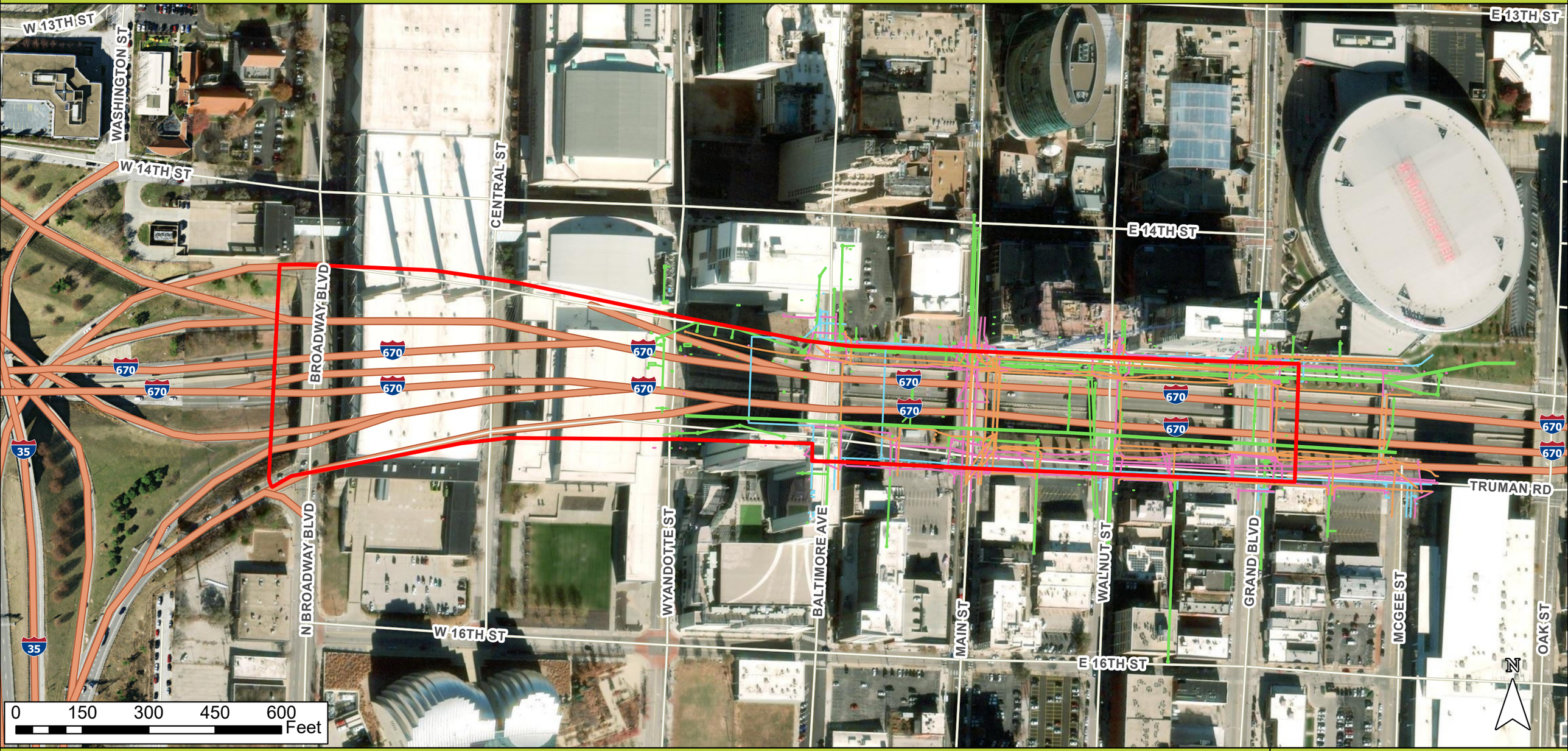

**Project Study Area**

**Potential for Contamination**

- **1 - Moderate-to-high**
- **2 - Low-to-moderate**
- **3 - None-to-low**

SOUTH LOOP PROJECT

# Exhibit 3-13: Utilities




**Project Study Area**

**Utilities**

- **Electrical/Power**
- **Sewer**
- **Water**
- **Communications/Other**

SOUTH LOOP PROJECT