



## **CHAPTER III**

# **Affected Environment**

The information presented in this chapter is gathered for an area smaller than the I-29/35 Study Corridor, which is a broad look at the project area and is determined prior to the development of the Initial Improvement Concepts. The Initial Area of Investigation (as shown in the exhibits at the end of this chapter) is then defined, although not by any specific alternatives but as a composite of the Initial Improvement Concepts. This chapter establishes and defines the baseline conditions within the Initial Area of Investigation which enable the evaluation of the potential social, economic and environmental impacts in Chapter IV in relation to specific alternatives.

### **A. Social and Economic Characteristics**

#### **1. LAND USE**

Land use data gathered for the study corridor included land use data, correspondence with city planners, available comprehensive master plans and zoning information from the two municipalities. This information was supplemented with a review of aerial photography and windshield surveys.

##### **a. Existing Land Use**

The study corridor is located in the heart of the Kansas City metropolitan region and extends from just north of Missouri Route 210/Armour Road in Clay County, through North Kansas City, Missouri, and along the north edge of downtown Kansas City, Missouri (Jackson County). The Missouri River separates the two cities with the city of North Kansas City located north of the river and the city of Kansas City located south of the river. It is characteristically an urban environment with very little undeveloped land. The existing land uses within the study corridor can be separated into eight general categories: single-family residential, multi-family residential, commercial, industrial, public/semi-public institutional, parks/recreation/open space, parking areas and transportation corridors. Within the study corridor, industrial use dominates in North Kansas City whereas a variety of uses are found in Kansas City (see Exhibit III-1).

Although the land use within the study corridor generally reflects the zoning classifications, there are some instances where land uses vary within certain zoning districts. For example, in North Kansas City, at the northeast corner of the I-29/Armour Road interchange, the land use is commercial and the zoning classification is light industrial, on the outer edge of the northeast corner of the Loop, some single-family residential homes exist within an area zoned as light industrial, and along the northern portion of the Downtown Kansas City Loop (south of I-29/35), some buildings in areas zoned as light industrial have been renovated into office or residential. A discussion of existing land uses in the study corridor follows.

##### ***Single-Family Residential***

Single-family residential use includes single-family homes and vacant properties that once had single-family homes. In North Kansas City, the single-family residences are located north of

Armour Road in The Avenues neighborhood and the River Forest neighborhood. In Kansas City, the majority of single-family residences are concentrated in the Columbus Park neighborhood which is located between M-9 and I-29/35.

### ***Multi-Family Residential***

Multi-family residential use includes condominiums, townhouses, duplexes and apartment complexes with three or more units. In North Kansas City, multi-family residential land use is concentrated north of Armour Road, west of I-29/35. In Kansas City, multi-family residential areas are scattered in the downtown area, but concentrations occur in the Columbus Park neighborhood and the River Market area. There are three multi-family public housing developments within the study corridor in Kansas City. Guinotte Manor is located in the northeast corner of the Columbus Park neighborhood, Chouteau Court is located north of Independence Avenue between I-29/35 and the Paseo Boulevard, and Riverview Gardens is located east of the Paseo Boulevard near Kessler Park.

### ***Commercial***

Commercial land use includes office, commercial (non-office) and hotel/motel uses. In North Kansas City, the commercial use areas occur along Armour Road, east and west of I-29/35, and includes office, commercial (non-office) and hotel/motel uses. In Kansas City, the Isle of Capri Casino is located east of the I-29/35/Front Street interchange. There are a few scattered commercial uses on the north edge of the CBD Loop and along Independence Avenue including some hotel/motel uses. Office type commercial use is concentrated in the CBD Loop while most of the non-office commercial use within the study corridor is concentrated in the River Market area.

### ***Industrial***

Industrial use areas within the study corridor consist of light industrial and heavy/general industrial. The majority of industrial use within the study corridor is concentrated in North Kansas City, between Armour Road and the river, where both light and heavy/general industry uses occur. In Kansas City, light industrial areas are scattered throughout the study corridor, but are concentrated near the railroad tracks south of Front Street, and in the southeast portion near Troost Avenue.

### ***Public/Semi-Public Institutional***

Public and semi-public institutional uses within the study corridor include museums, schools, churches, community centers, public housing developments and municipal/government facilities.

### ***Parks and Open Space***

Parks and open space include public parks and recreation areas and other open space areas such as public housing common space, government/municipal building green space, levees and adjacent undeveloped floodplain areas, Kansas City Port Authority open land, and other small vacant properties that are city or state owned.

### ***Parking Areas***

Parking areas within the study corridor include extensive surface parking lots and garage parking. The largest of these areas is located in Kansas City at the interchange of I-29/35 and Front Street serving the Isle of Capri Casino and the downtown area.

### **Transportation**

Those areas on the land use map (Exhibit III-1) located within the study corridor that do not have a color designation are lands used for vehicular transportation. These include I-29/35/70, other major roads (M-210/Armour Road, US 71/Bruce Watkins Drive, US 24/Independence Avenue, M-9, US 169/Broadway) and city streets. Railroad transportation lines within the study corridor include the Burlington Northern Santa Fe (BNSF) railroad north of the Missouri River, and the Union Pacific (UP) and the Kansas City Southern (KCS) south of the Missouri River.

#### **b. Land Use Planning and Regulation**

The study corridor is comprised of portions of the city of North Kansas City, Missouri (in Clay County) and the city of Kansas City, Missouri (in Jackson County). Following is a discussion of land use planning and zoning for each city.

##### **City of North Kansas City**

The City of North Kansas City Planning Commission adopted the 2002-03 Master Plan Revision in March of 2003, thereby repealing the Comprehensive Master Plan of 1996. The city also has a Zoning District Map dated December of 2001 and zoning regulations. The revised Master Plan divides the city into ten planning areas and six transportation corridors (see Exhibit III-2). The planning areas that lie within the study corridor include The Avenues (a predominantly single-family residential neighborhood), Sunny Hills (a multi-family residential neighborhood), River Forest (a single-family residential and commercial area), the Railroad Avenue Area (located on the east side of I-29/35, and between Armour Road and the railroad tracks), the Paseo Industrial District (located on the east side of I-29/35, south of the railroad tracks) and the Old Industrial Area (west of I-29/35). The transportation corridors identified in the revised Master Plan that are within the study corridor include Armour Road, I-29/35, and 16<sup>th</sup> Avenue. The revised Master Plan outlines goals and strategies that provide a guide to future actions and that are specific to each planning area or corridor.

According to the revised Master Plan, the goals and strategies for each planning area (See Exhibit III-2) are summarized as follows:

- *The Avenues* – sustain the area as a viable residential neighborhood by “incorporating the rehabilitation of existing homes with new home types and styles”, establishing or maintaining buffers between the single-family residences and major roads, and maintaining or improving pedestrian connection to civic and cultural amenities.
- *Sunny Hills* – retain the existing residential character of the area, preserve open space, provide pedestrian and bicycle connections, and consider appropriate low density residential opportunities.
- *River Forest* – maintain the current character and style of the area, but enhance the image of the commercial area north of Armour Road and south of the residences.
- *Railroad Avenue Area* – plan for redevelopment and urban design concepts, including elimination of blight and creation of an aesthetically pleasing gateway or landmark. Areas planned for development/redevelopment include a commercial development at the southeast quadrant of the Armour Road interchange, and a light industrial/warehouse development on the vacant land northeast of the 16<sup>th</sup> Avenue interchange.
- *Paseo Industrial District* – sustain the industrial base; work with the Mid-America Regional Council (MARC) and the Missouri Department of Transportation (MoDOT) regarding the Long Range Transportation Plan (LRTP) to ensure adequate

transportation facilities (and freight access), and improve the visual appearance of the area.

- *Old Industrial Area* – enhance the boundaries and edges, encourage re-use of existing structures, and maintain and improve access connections for industrial traffic.

The goals and strategies for the corridors (specific to the study corridor) are summarized as follows:

- *Armour Road* – reinforce and create activity nodes (one at I-29/35 and Armour Road), and maintain and enhance opportunities for connections among several modes of transportation.
- *I-29/35* – maintain I-29/35 as the main freight access and through-traffic route by working with MARC and MoDOT regarding the LRTP.
- *16<sup>th</sup> Avenue* – improve 16<sup>th</sup> Avenue as an east-west connector for industrial and vehicular traffic. Currently there is no direct access to 16<sup>th</sup> from southbound I-29/35, and no direct access to northbound I-29/35 from 16<sup>th</sup>.

### **City of Kansas City**

The City of Kansas City, Missouri has a set of zoning ordinances and zoning maps, and the City and its citizens prepared a city-wide master plan called FOCUS (Forging Our Comprehensive Urban Strategy) to guide the future of the city for the next 25 years. The FOCUS plan contained two phases. Phase I, adopted by the City Council in 1994, is a policy plan that provides guidance in key decisions throughout the City. Phase II, adopted by the City Council in 1997, is a Comprehensive and Strategic Plan that includes specific recommendations to implement the vision and policies of Phase I.

The Comprehensive and Strategic (FOCUS) Plan contains components that provide land use planning guidelines and strategies for addressing the future character of growth, for revitalizing or sustaining neighborhoods, for preserving landmarks and historic/archaeological resources, and for revitalizing the urban core. The areas discussed in the FOCUS plan are based on the boundaries of the City Council Districts (see Exhibit III-2). The study corridor in Kansas City includes small portions of District 1 (from the Missouri River south to Independence Avenue, including the Columbus Park neighborhood), District 2 (the River Market area and downtown) and the far northwest corner of District 3 (east of US 71 and south of Independence Avenue). The districts also contain specific neighborhoods. Each neighborhood performed self-evaluations to assess their health and viability and to develop specific strategies to address the needs of the neighborhood.

The city is divided into 19 geographical planning areas for which area plans are being prepared or updated. Within these planning areas are smaller sub-areas such as neighborhoods, project areas, or groups of census tracts for which land use plans have or will be developed. The planning areas and sub-areas within the study corridor (as shown on Exhibit III-2) are Industrial Bottoms (located on the east side of I-29/35 and includes the Riverfront Sub-Area), Truman Plaza (includes the south half of the Columbus Park Sub-Area and the Garfield-Independence Plaza Sub-Area) and Downtown/Midtown (includes the Downtown Sub-Area the River Market Sub-Area, and the north half of the Columbus Park Sub-Area). The FOCUS plan does not replace area plans, corridor plans, neighborhood plans or project plans, all of which are more detailed regarding future land use recommendations, and which serve as a guide as to how development should occur in a specific area. Any amendments made to these types of plans

will be consistent with the guidance of the FOCUS plan. The future land uses in the study corridor are shown on Exhibit III-1 in the areas where they differ from existing land uses.

Within the study corridor in District 1, an area plan has been developed for the Columbus Park Neighborhood. The plan would revitalize the neighborhood as an “urban village” through additional housing and housing renewal, business expansion, mixed-use development and streetscape improvements. To the north of the Columbus Park Neighborhood (north of the Columbus Park industrial area and south of Berkley Riverfront Park, including the area inside the interchange loops) is the Kansas City Port Authority redevelopment site. This land is planned to be an architecturally distinctive gateway center for the riverfront by providing a dense, mixed-use urban village development containing hotel, office, retail and residential space and cultural amenities. In the Pendleton Heights neighborhood (see Exhibit III-1), some streetscape improvements and renovations have taken place and improvements are planned for the Independence Avenue and Paseo intersection. In addition, Independence Avenue has been designated as a Special Review District and a commission appointed by the mayor will guide future development in this area.

The study corridor in District 2 contains the CBD Loop and the River Market area. The CBD Loop also contains Quality Hill, which is a multi-family residential neighborhood located on the western edge of the Loop. The remainder of the Loop is mainly office, commercial and parking facility uses. The recently adopted Downtown Land Use and Development Plan provides direction for future mixed-use development and promotes a “24-7” mixed-use environment in the CBD Loop including expansion of nighttime activities and residential facilities. Several older commercial buildings have been, or are currently being converted to residential units, both north and south of the CBD Loop. The River Market area, which includes the City Market, contains a variety of loft housing developments, retail stores, restaurants, art galleries and museums. Kansas City’s plans for development in this area include adding more parking space, enhancing entry points, renovating store fronts, providing additional lighting and adding landscaping and other site amenities.

The small portion of District 3 that lies within the study corridor contains part of the Paseo West neighborhood. Within this neighborhood the City is planning to reconfigure the Paseo Boulevard between 9<sup>th</sup> Street and Independence Avenue, and improvements are planned for the intersection at Independence Avenue and the Paseo, which is at the northeast corner of this neighborhood. At Independence Avenue, the southbound lanes of the Paseo would be realigned to meet with Independence Avenue where Lydia Avenue currently intersects with Independence Avenue. This will create a wide median that will accommodate gateway and aesthetic treatments. At Independence Avenue, the northbound and southbound lanes of the Paseo provide access to and from I-29/35. In addition, Independence Avenue has been designated as a Special Review District.

### **c. Agriculture / Prime Farmland**

There are three areas within the study corridor that are designated as having prime farmland soils, however, none of these areas are currently being used for agriculture (see Exhibit III-1). One area is the land on the north bank of the Missouri River in the 100-year floodplain (south of the levee) and owned by the U.S. Army Corps of Engineers (USACE). Just north of that is an open, grassed area at the northeast corner of the Paseo Bridge on property that is currently used for light industry. The third area is an undeveloped, un-maintained area just south of Armour Road on the east side of I-29/35 on property that is also currently used for light industry. Consequently these lands meet the definition of land that is “already in or committed to urban development or water storage,” as contained in the Farmland Protection Policy Act. These areas are therefore not subject to the Act.

## 2. DEMOGRAPHICS AND SOCIAL CHARACTERISTICS

Demographic and social characteristics were developed for this study based on the 2000 Census. The census data is presented in tables for the I-29/35 potential impact area, the I-29/35 Study Corridor, the city of North Kansas City, the city of Kansas City, the Kansas City Metropolitan Area, Clay County, Jackson County and the state of Missouri. The potential impact area includes the census blocks that are adjacent to I-29/35. The study corridor, which is broader than the potential impact area, includes census tracts that are adjacent to I-29/35. The potential impact area within the study corridor was defined, based on preliminary concept alternatives, in order to provide a narrower corridor of review to identify properties with the highest potential of being impacted by the project. The potential impact area is a worst case scenario composite of all of the concept alternatives. The study corridor is contained within census tract numbers 020000 and 020100 in Clay County, and census tract numbers 000100, 000200, 000300, 000400, 001000, 001100, 001200, 001300, 001400 and 001500 in Jackson County. The 2000 census tracts are shown on Exhibit III-3.

### a. Demographic Data

#### Population

Between 1990 and 2000 the study corridor experienced a decline in its population of almost five percent. General population information for the study corridor can be found on Exhibit III-4. In contrast North Kansas City and the Kansas City Metropolitan area experienced patterns of growth with about 14 percent and 13 percent increases respectively. The city of Kansas City's population increased only slightly by about 1.5 percent. Clay County experienced the highest growth at nearly 20 percent. Jackson County experienced only minor growth with an increase of a little more than three percent. The state of Missouri experienced a positive population change of about nine percent from 1990 to 2000.

**Table III-1  
Population, Gender, Age**

	Potential Impact Area (block)	Study Corridor	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri	
Total Population	3,336	16,225	4,714	441,545	1,776,062	184,006	654,880	5,595,211	
% Change - 1990 to 2000	--	-4.6	14.1	1.5	13.4	19.9	3.4	9.3	
% Male	51.5	54.1	48.5	48.2	48.8	48.5	48.0	48.6	
% Female	48.5	45.9	51.5	51.8	51.2	51.5	52.0	51.4	
Age	Under 20	633	3,353	961	122,961	517,236	51,948	185,480	1,578,834
	% Under 20	19.0	20.6	20.4	27.9	29.1	28.2	28.3	28.3
	20-64	2,302	11,112	3,087	266,662	1,056,371	112,172	387,364	3,251,339
	% 20-64	69.0	68.4	65.5	60.4	59.5	61.0	59.2	58.2
	Over 64	401	1,790	666	51,646	202,455	19,886	82,063	756,038
	% Over 64	12.0	11.0	14.1	11.7	11.4	10.8	12.5	13.5

Note: Potential Impact Area is calculated at the block level and the study corridor is calculated at the tract level.  
Source: U.S. Census Bureau and Missouri Census Data Center, Census 2000

There is a lower percentage of individuals under the age of 20 within the potential impact area as compared to the city, county and state figures. There are a lower percentage of elderly individuals in the potential impact area as compared with North Kansas City, Jackson County

and the State. There are a higher percentage of males in the study corridor, just the reverse of the city, county and state figures.

**Education**

Data on educational attainment for areas reviewed is shown in Table III-2. The study corridor contains the highest percentage, about 19 percent, of adults over 25 years in age with less than a high school education. In contrast, Clay County has the lowest number with 5.6 percent of adults achieving less than a high school education. The remaining areas studied range from 9.5 to 14.4 percent of adults with no high school diploma.

An examination of higher education statistics for areas reviewed finds the number of adults over 25 years in the study corridor who have some college or a bachelor’s degree (25.9 percent and 11.7 percent respectively) lower than most of the comparison areas.

**Table III-2  
Educational Attainment – Persons Over 25 (2000)**

	Study Corridor	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri
Population 25 years and over	11,176	3,244	287,046	1,154,262	120,500	427,077	3,634,906
Less than 9 <sup>th</sup> Grade	1,094 (9.9%)	206 (6.3%)	13,412 (4.7%)	44,148 (3.8%)	3,247 (1.8%)	18,947 (4.4%)	237,618 (6.5%)
9 <sup>th</sup> to 12 <sup>th</sup> Grade, No Diploma	2,116 (18.9%)	467 (14.4%)	36,905 (12.9%)	109,137 (9.5%)	10,340 (5.6%)	51,939 (12.2%)	441,477 (12.2%)
High School Graduate or GED	3,156 (28.2%)	1,122 (34.6%)	79,874 (27.8%)	328,047 (28.4%)	38,610 (21.0%)	128,169 (30.0%)	1,189,670 (32.7%)
Some College, No Degree	2,897 (25.9%)	1,015 (31.3%)	83,031 (28.9%)	343,936 (29.8%)	38,256 (20.8%)	127,890 (29.9%)	981,665 (27.0%)
Bachelor’s Degree	1,304 (11.7%)	308 (9.5%)	48,898 (17.0%)	218,722 (18.9%)	21,041 (11.4%)	66,346 (15.5%)	507,892 (14.0%)
Graduate or Professional Degree	609 (5.4%)	126 (3.9%)	24,926 (8.7%)	110,272 (9.6%)	9,006 (4.9%)	33,786 (7.9%)	276,584 (7.6%)

Note: The study corridor is calculated at the tract level.  
Source: U.S. Census Bureau and Missouri Census Data Center, Census 2000.

**Minority Populations**

The percentage of non-whites is similar within the potential impact area, the study corridor and the city of Kansas City, ranging from 39 percent to 44.7 percent. The city of North Kansas City, the Kansas City Metropolitan Area and the state of Missouri have much lower non-white populations, ranging from 16.2 percent to 19.2 percent. Clay County has the smallest non-white population at about 9.5 percent.

Two of the census tracts within the study corridor have a high percentage of minority populations. About 65 percent of the individuals within Tract 001000 are part of the minority population and about 63 percent of the population in Tract 000300 is a minority. These tracts are located adjacent to the CBD Loop within the city of Kansas City. Tract 000300 is located to the north of the Loop and encompasses the Columbus Park neighborhood. Tract 001000 is located to the east of I-29/35 and includes nearly the entire Pendleton Heights neighborhood. Environmental justice issues are addressed in the Environmental Consequences chapter (Chapter IV) of this document.

**Table III-3  
Racial Characteristics (2000)**

	Potential Impact Area (block)	Study Corridor	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri
Total Population	3,336	16,255	4,714	441,545	1,776,062	184,006	654,880	5,595,211
White	2,033	9,644	3,888	268,449	1,435,388	170,092	459,002	4,746,952
Black	698	3,715	187	135,671	226,503	4,524	150,202	622,087
American Indian & Alaskan Native	18	117	28	2,308	8,429	979	3,334	26,200
Asian	370	918	202	8,372	28,654	2,165	8,646	60,429
Native Hawaiian or Other Pacific Islander	6	13	11	431	1,829	172	926	3,071
Other Race	100	888	156	14,168	40,431	1,906	16,240	45,524
Two or More Races	99	960	242	11,870	34,828	4,168	16,530	90,948
Hispanic or Latino (of any race)	280	1,634	398	30,374	93,450	6,364	34,925	116,373
% Minority (non-white)	39.0	40.7	17.5	39.2	19.2	7.6	30.0	15.2

Note: Potential Impact Area is calculated at the block level and the study corridor is calculated at the tract level.  
Source: U.S. Census Bureau and Missouri Census Data Center, Census 2000

### **b. Neighborhoods and Communities**

Neighborhoods and communities are described as self-contained areas where residents share common geographic identities and other ties or interests. The study corridor contains several neighborhoods within the communities of North Kansas City and Kansas City.

#### ***City of North Kansas City***

The City of North Kansas City contains many specific neighborhoods. Those adjacent to the I-29/35 study area include the neighborhoods of The Avenues, Sunny Hills and River Forest (see Exhibit III-1). Information concerning these specific neighborhoods was obtained from the city of North Kansas City Master Plan.

***The Avenues Neighborhood*** – The Avenues include approximately 24 blocks of residential development east of Howell and north of Armour. The Avenues provide one of the most unique residential environments in North Kansas City and the metropolitan area. It is the oldest residential neighborhood in North Kansas City and represents development patterns that predate many of the current conventional residential development practices. The Avenues are based on a grid street system with urban residential development standards. The age and smaller size of the houses are defining elements of this area. Due to its age, this area has experienced some decline. However, emerging ownership patterns appear to be restoring some pride in this unique area.

***Sunny Hills Neighborhood*** – Clark Ferguson Drive and Ozark Street lead into the Sunny Hills neighborhood. The area is bounded by I-29/35, the city limits and an open space/drainage area. The predominant uses in the area are multi-family apartments and open space. The area is unique because of its geographic location and the character and nature of the surrounding areas.

***River Forest Neighborhood*** – Vernon Street is an entry road into this neighborhood. At the southern end of Vernon Street commercial development and zoning set the tone for the uses that front Armour Road and take advantage of the location at the I-29/35 and Armour Road interchange. An open space/drainage buffer separates these commercial uses from the

residential neighborhood to the north, yet perceptually the two use areas are connected. This is a fully developed, very stable and desirable neighborhood of the newest existing single-family housing stock in North Kansas City, typical of the styles built in the 1960's and 1970's.

### ***City of Kansas City***

The City of Kansas City contains many specific neighborhoods. Those adjacent to the I-29/35 study area include the neighborhoods of Pendleton Heights, Parkview, Paseo West, Columbus Park, River Market, and Quality Hill (see Exhibit III-1). Information concerning these specific neighborhoods was obtained from Kansas City's City Planning and Development website.

***Pendleton Heights Neighborhood*** – The Pendleton Heights neighborhood is a predominantly Italian-American community with a mixture of single-family homes, apartment buildings and public housing. The area has several older homes of similar construction styles, bringing an identifiable character to the neighborhood.

There are two public housing developments within Pendleton Heights. Riverview Gardens is located at 299 Paseo Boulevard. This development is very popular with families. The property was completely renovated in 1999 and now contains 232 units. The second development, Chouteau Courts, is located at 1220 Independence Avenue. The property was renovated and now includes 134 units.

***Parkview Neighborhood*** – The Parkview neighborhood is bordered by Independence Avenue on the north and Paseo Boulevard on the west. The neighborhood consists of multi-family residential, commercial and office space.

***Paseo West Neighborhood*** – The Paseo West neighborhood is bordered by Independence Avenue on the north and Paseo Boulevard on the east. The neighborhood is bordered by the east leg of the CBD Loop on the west. The neighborhood consists of different types of residential housing, as well as light industrial and office space. The reStart center, which is a shelter to provide services to the homeless, is located at 9<sup>th</sup> Street and Harrison. The center is a recipient of HUD assistance for providing support in transitional housing.

***Columbus Park Neighborhood*** – The neighborhood sits at the eastern end of the Kansas City Riverfront District. Its boundaries are Cherry Street to I-29/35 and Independence Avenue to NE Industrial Trafficway. Landmarks such as Holy Rosary Church, Garrison Community Center, the Don Bosco Center and Columbus Square Park are located in this neighbor. Guinotte Manor is a public housing development that was built within the neighborhood. This newly constructed development was dedicated in 2000 and includes 219 units. Guinotte Manor was built to represent community living and due to its location provides easy access to several public facilities in the neighborhood. Also located in the neighborhood is Columbus Park Plaza, a high-rise apartment building, which is HUD assisted housing for elderly tenants.

The neighborhood history dates as far back as Francois Chouteau's era of fur trading with area Native Americans. The neighborhood has hosted Italian, Russian, Jewish and Vietnamese settlers, which contributes to strong cultural diversity. The many locally owned businesses also reflect this heritage.

***River Market Neighborhood*** – The River Market is in the oldest section of Kansas City and is a destination spot due to the "City Market," which has been operating since the 1850s. It has a growing mixed-use environment and an active night life. This neighborhood includes a variety of loft housing developments and retail developments. Much of the urban core's residential redevelopment continues to take place within this historic area. Throughout the year, the area hosts a variety of entertainment events, concerts, family activities and festivals.

**Quality Hill Neighborhood** – Quality Hill sits on the western side of downtown Kansas City. The eastern edge of the neighborhood is Broadway, with the north and south boundaries being the CBD Loop. The west edge is formed by the bluff and Case/West Terrace Park.

Quality Hill was one of the earliest real estate developments in Kansas City. Development began in the area in the late 1850s. The area became the city's most fashionable and prestigious neighborhood with large homes constructed in the 1860s and 1870s. By the 1920s, Quality Hill had become a low rent district with the older homes being torn down or divided into apartments. This area has been the target of many redevelopment projects because of its location. Quality Hill mainly consists of office and multi-family residential properties.

### c. Housing Characteristics

The housing characteristics of the potential impact area and the study corridor are compared with city, county, regional and state characteristics in Table III-4. Clay County has the highest percentage of occupied housing units; the percent of occupied housing units was around 95 percent. The potential impact area and the study corridor had similar percentages of occupied housing at about 86 percent each. The potential impact area and the study corridor have low percentages of owner occupied housing, at 10.2 percent and 16.9 percent respectively. In contrast Clay County and the state of Missouri have much higher percentages of owner occupied housing at about 70 percent. The study corridor also has the smallest average household size and smallest average family size at 1.8 and 2.6 respectively.

**Table III-4  
Housing Characteristics (2000)**

	Potential Impact Area (block)	Study Corridor	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri
Total Housing Units	2,118	9,075	2,779	202,273	740,884	76,230	288,231	2,442,017
Total Vacant Housing Units	292	1,212	233	18,315	46,416	3,672	21,937	247,423
Total Occupied Housing Units	1,826	7,863	2,546	183,958	694,468	72,558	266,294	2,194,594
Percent Occupied	86.2	86.6	91.6	90.9	93.7	95.2	92.4	90.0
Owner Occupied Units	187	1,326	606	106,078	471,843	51,282	167,435	1,542,310
Renter Occupied Units	1,639	6,537	1,940	77,880	222,625	21,276	98,859	652,284
Percent Owner Occupied	10.2	16.9	23.8	57.7	67.9	70.7	62.9	70.3
Average Household Size	--	1.80	1.85	2.35	2.52	2.50	2.42	2.48
Average Family Size	--	2.62	2.77	3.06	3.08	3.00	3.05	3.02
Median Home Value	--	\$15,000 – 112,500*	\$78,100	\$84,000	\$92,400 – 129,900*	\$104,900	\$85,000	\$89,900
Median Gross Rent	--	\$286 – 811**	\$511	\$548	\$546 – 631**	\$576	\$536	\$484

Note: Potential Impact Area is calculated at the block level and the Study Area is calculated at the tract level. Block level data was not available for all categories.

\* Range of median home values.

\*\*Range of median rent.

Source: U.S. Census Bureau and Missouri Census Data Center, 2000 Census

The highest median home value appears at the high end of the range for the Kansas City Metropolitan Area. The study corridor shows the range of median home values within the census tracts, which runs from \$15,000 to \$112,500. The tract with the lowest median home value is Tract 000400. This tract is located south of the Missouri River to the east of I-29/35. The tract with the highest median home value is Tract 020000 and is located to the north of the Missouri River in the city of North Kansas City. There is a wide range of median rents with the study corridor as well. The highest median rent, which is \$811, is in Tract 000100. This tract is located south of the Missouri River on the north side of the CBD Loop and includes a portion of the River Market neighborhood. Tract 001400 has the lowest median rent at \$286. This tract is located in the city of Kansas City and is bisected by the CBD Loop. The eastern portion of the tract includes a part of the Paseo West neighborhood, while the western portion includes part of the CBD.

#### **d. Community Facilities and Services**

The community facilities and services located within the study corridor include public lands and facilities, municipal/government facilities, museums, community centers, schools, churches and public safety/emergency services. These are discussed below and are located on Exhibit III-5.

##### ***Public Lands and Facilities [Sections 4(f), 6(f), UPARR]***

Publicly-owned parks, recreation facilities/areas (including some public school play areas), and wildlife and waterfowl refuges have special status under the provisions of Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966. [Historic resources also have special status under Section 4(f) but are discussed in a separate section of this chapter.] Before a transportation project is allowed to proceed with any encroachment on a Section 4(f) property, a specific evaluation must be conducted that tests all proposed alternatives. Before a Section 4(f) property can be used, an evaluation must lead to a finding that there is no feasible and prudent alternative to the taking of that park, recreation area or refuge, and that all possible planning to minimize harm to the resource has been undertaken. FHWA determines the applicability of Section 4(f) to the project under consideration.

During the early stages of this project, Section 4(f) parks and recreation facilities were mapped and identified as prime candidates for avoidance (there were no public school play areas or wildlife/waterfowl refuges within the study corridor). Avoidance is preferred unless such avoidance would have other, more extraordinary socio-economic, environmental or engineering consequences. Early coordination with Kansas City and North Kansas City helped to identify the lands within the study corridor that are potentially Section 4(f) eligible.

The National Park Service (NPS) administers the Land and Water Conservation Fund [LWCF, known as Section 6(f) funds] for recreational land acquisition and development, and the Urban Park and Recreation Recovery (UPARR 1010) grants program for revitalization of park and recreation systems. In accordance with section 6(f) of the 1965 LWCF Act and UPARR Section 1010 program policies, a conversion of parkland (that has been the recipient of these funds) to other than public recreation use would require that the impacted parkland or facilities must be replaced with land or facilities of at least equal recreational utility and monetary value, and is subject to approval by the U.S. Department of the Interior (DOI). In addition, other funding sources that can apply to public lands were considered, including Community Development Block Grants (CDBG).

Some recreation areas or open space can be publicly owned as the result of “flood buyout” properties, which cannot be developed due to open space deed restrictions, which also prohibit the placement of fill for road construction or bridge abutments and piers.

The public lands and facilities within the study corridor that have the potential of being subject to the provisions of Section 4(f), 6(f) and/or UPARR are listed in Table III-5 and are described below. The publicly owned lands and facilities are shown on Exhibit III-5 and include public parks and recreation areas, pedestrian/bicycle facilities, public housing common space, other publicly-owned open space, scenic byways and boulevards/parkways.

**Public Parks and Recreation Facilities** – The only public park within the study corridor in the city of North Kansas City is as follows:

- *River Forest Park* is located at the north end of the study corridor, northeast of the I-29/35 and Armour Road interchange. This 7.27-acre (2.9 hectares) open space is owned by the city of North Kansas City and is used as an open space/drainage buffer that separates the commercial area to the south and the residential neighborhood to the north. It is a natural, wooded area that does not contain any recreational facilities or structures of any kind, and the City does not plan to incorporate any facilities in the future. The property was acquired in 1972 with LWCF and is therefore a Section 6(f) eligible property.

**Table III-5  
Public Lands and Facilities**

Name	City	Eligibility – Section 4(f) 6(f)
<b>Public Parks &amp; Recreation Areas</b>		
River Forest Park	North Kansas City	4(f), 6(f)
Richard L. Berkley Riverfront Park	Kansas City	4(f)
Kessler Park	Kansas City	4(f), UPARR
Belvidere Playground	Kansas City	4(f), UPARR
Margaret Kemp Park	Kansas City	4(f)
Garrison Square	Kansas City	4(f), UPARR
Columbus Square	Kansas City	4(f)
River Bluff Park	Kansas City	4(f)
Case Park/West Terrace Park	Kansas City	4(f)
<b>Pedestrian/Bicycle Facilities</b>		
Proposed Missouri River Levee Trail	North Kansas City	Not Eligible
Riverfront Heritage Trail	Kansas City	Not Eligible
On-Street Bike Routes (Planned/Proposed)	Kansas City/NKC	Not Eligible
<b>Public Housing Common Space</b>		
Guinotte Manor Common Space	Kansas City	Not Eligible
<b>Other Publicly Owned Space</b>		
Levees and Floodplains	North Kansas City	Not Eligible
Interchange Open Space (northwest loop)	Kansas City	Not Eligible
Seymour Rugby Park (southwest loop)	Kansas City	Not Eligible
Port Authority Development Site	Kansas City	Not Eligible
Green Space	Kansas City	Not Eligible
Miscellaneous Open Space	Kansas City	Not Eligible
<b>Scenic Byways</b>		
Spirit of Kansas City Regional Scenic Byway	Kansas City	Not Eligible
Cliff Drive State Scenic Byway	Kansas City	Not Eligible
<b>Boulevards &amp; Parkways</b>		
Paseo Boulevard	Kansas City	Not Eligible
Admiral Boulevard	Kansas City	Not Eligible
Grand Avenue (Boulevard)	Kansas City	Not Eligible

The public parks and recreation facilities within the study corridor in the city of Kansas City are as follows:

- *Richard L. Berkley Riverfront Park* is located adjacent to the south side of the Missouri River between the Paseo Bridge and the Heart of America Bridge. This 17-acre (6.9 hectares) park, named after former Kansas City Mayor Richard L. Berkley, is owned by the city of Kansas City, Missouri, and is leased to the Kansas City Port Authority, which also maintains it. The Port Authority is a political subdivision of the State of Missouri and was formed by the city of Kansas City to promote economic development activities, some of which relate to riverfront development along the Missouri River. The park currently contains a natural amphitheater, a landscaped mall area and the Riverfront Heritage Trail, which is a bike path and pedestrian walkway traveling adjacent to the south bank of the Missouri River. The park was funded by a portion of a \$21.2 million bond issued by the Kansas City Port Authority that was secured with guaranteed lease and grant payments from the Isle of Capri Casino, and a \$500,000 grant from the Missouri Department of Conservation (MDC). Future park facilities may include an amphitheater with stages, a playground, an ice rink and gardens. The park can be reached from the Grand Avenue Viaduct, and from I-29/35 at the Front Street interchange on the east.
- *Kessler Park* is located along the Missouri River bluffs from I-29/35 and Paseo to Belmont Avenue and Gladstone Boulevard. This 303-acre (122.6 hectares) park, owned by the city of Kansas City, was formerly called North Terrace Park. It was renamed for George E. Kessler, early landscape architect who is credited with planning the City's park and boulevard system. In the early 1900's, Kessler suggested that the City should maintain the natural ruggedness of the landscape. Most of the park is currently undeveloped with large wooded areas, and some open lawn areas. In addition to the vast natural areas, the park also contains the Concourse and its fountain, a wading pool, a sailboat and casting pool, the Colonnade, the Kansas City Museum of History and Science, a memorial to John F. Kennedy, a monument dedicated to Thomas Hart Benton, tennis courts, and the Cliff Drive State Scenic Byway. In 1983, Kessler Park received a grant from the UPARR program for tennis court renovation, parking lot resurfacing, a new fence and new water fountain lines. These improvements were located in an area of the park that is outside of the study corridor, about 0.8 miles (1.3 kilometers) to the east. The park property within the study corridor is only the far western edge of the park and contains only wooded area with no recreational facilities or paved parking.
- *Belvidere Playground* (sometimes referenced as Belvidere Park) is owned by the city of Kansas City. It is a park containing approximately 8.28 acres (3.4 hectares), and is located north of Independence Avenue at Lydia Avenue, between Paseo Boulevard and I-29/35, on the east side of the Chouteau Court apartments. It originally contained a play area and a small concrete pad with two basketball goals in the southernmost portion of the park (just north of Independence Avenue), and a ball diamond and open field area in the north half of the park. There was also a service road into the site, off of Independence Avenue.

Prior to 1980 the park did not contain the 1.7-acre (0.7 hectares) site where the Garrison School was located, adjacent to the north side of the Chouteau Court apartments. The school was closed in 1976, was vacant and unused, and was subject to vandalism and deterioration. In 1979 the Kansas City School Board voted to donate the school site to the city as an addition to Belvidere Playground, with the understanding that the school

building would be removed. In 1980, the City Council accepted a warranty deed from the Kansas City School District, conveying the property to the city for public park purposes. In 1981, the school building was demolished, but the stone foundation walls remained.

In fiscal year 1980, UPARR program funds were awarded for renovation of the playground area within the park. In fiscal year 1983, UPARR program funds were awarded for fence and railing installation, stonework stabilization (concrete work on existing stone foundation walls) and installation of a storage/shelter building. New playground equipment was installed in 1983. In addition, the fencing and railing installation and the stonework stabilization was implemented on the stone foundation walls and stone fence walls on the old school property. The storage/shelter building was located near the playground area at the south end of the park. Recent aerial photography and field reconnaissance indicate that the stone foundations, stone fence walls and fencing/railing have been removed from the school site and only some old concrete steps remain. The playground equipment and shelter building have been removed from the south end of the park.

The only remaining facilities in the park are a baseball field backstop and open area in the north half of the park, and a small asphalt pad with one basketball goal and a bench in the southern portion of the park. There is also a service road into the site, off of Independence Avenue, with a gate that is sometimes closed.

- *Margaret Kemp Park* is located at 10<sup>th</sup> Street and Harrison Street, with park land located on each side of Harrison Street. This 2.94-acre (1.2 hectares) park is owned by the city of Kansas City and contains open grassed areas and scattered trees on both the north and south portions. The north portion of the park also contains an area with play equipment.
- *Garrison Square* is located at 5<sup>th</sup> Street and Troost Avenue. This 3.09-acre (1.3 hectares) park is owned by the city of Kansas City and contains the Garrison Community Center, open space, a water feature and play equipment. In 1991, the Garrison Community Center was renovated with funds from the UPARR program.
- *Columbus Square* is located at Missouri Avenue and Holmes Street in the Columbus Park neighborhood. This 4.18-acre (1.7 hectares) park is owned by the city of Kansas City and contains open grassed areas with scattered trees, benches, picnic tables, play equipment and a pavilion with benches. At the southeast corner of the property is a sign labeled Columbus Park Neighborhood, and at the northeast corner of the property is a sign labeled Columbus Square.
- *River Bluff Park* is a new city-owned park that was just completed in July of 2004. It is located west of Broadway at the corner of 4<sup>th</sup> Street and Beardsley Road, just outside the northwest corner of the downtown Kansas City Loop. This is an overlook park that provides views of the Missouri and Kansas Rivers and the West Bottoms area. The park contains paving and landscaping and the Riverfront Heritage Trail extends through it.
- *Case Park/West Terrace Park* is located on the west edge of downtown Kansas City, Missouri on the east side of I-35, from West 6<sup>th</sup> Street to West 10<sup>th</sup> Street (Case Park) and from West 6<sup>th</sup> Street to West 17<sup>th</sup> Street (West Terrace Park). The two parks, owned by the city of Kansas City, are integral. West Terrace Park is located along the wooded bluffs and Case Park is located on the land above the bluffs. Case Park contains

grassed areas, picnic tables, and a scenic overlook of the Missouri River floodplain and the west bottoms. At the north end of the park, called the Lewis and Clark Point, there is a statue commemorating the Lewis and Clark expedition. Adjacent to the point area, to the south, is another statue that commemorates James Pendergast, an alderman on the City Council in the late 1800's.

***Pedestrian/Bicycle Facilities*** – A major consideration in highway planning and design is the interaction among motorists, pedestrians and bicyclists. The pedestrian/bicycle facilities located within the study corridor include sidewalks on side streets, off-street pedestrian/bicycle trails, and existing, planned and proposed on-street and off-street bicycle routes. Although there are no sidewalks adjacent to the travel lanes of the I-29/35 facility, there are sidewalks on most of the side streets that cross over or under the facility, with the exception of 16<sup>th</sup> Avenue, Bedford Avenue and Armour Road in North Kansas City. Armour Road has a sidewalk on the north side that continues through the interchange, but there is no sidewalk on the south side of Armour through the interchange and eastward. In the city of Kansas City, sidewalks exist on all side streets and on all bridges crossing over I-29/35, with the exception of the Locust Street/M-9 bridge where there are no sidewalks. However there is a paved shoulder on the northbound side that is used as a bicycle lane and could also be used by pedestrians. Pedestrian considerations are also an important factor in the city of Kansas City's comprehensive plan (called FOCUS – Forging Our Comprehensive Urban Strategy). The city also developed the "Kansas City Walkability Plan" in March of 2003 as a policy guide for providing adequate pedestrian options throughout the City to provide a "walkable community".

"Bike KC" is the city of Kansas City's Bicycle Transportation Initiative, a planned and phased network of 600 miles (965.6 kilometers) of on-street bicycle routes (located on existing and future city streets) that primarily serve a transportation purpose. The bike plan is based on the MARC regional bike plan, and the bike routes are included in the City's Major Street Plan. The city of North Kansas City does not have its own adopted bike plan, but instead uses MARC's regional bike plan to guide its planning concerning bike routes. In addition, MARC was instrumental in developing the "MetroGreen Regional Greenway Initiative", a regional pedestrian/bicycle system plan, which includes both on-street routes and off-street trails in the seven-county area. The existing and planned or proposed pedestrian/bicycle trails and routes within the study corridor are discussed below.

- *The Proposed Missouri River Levee Trail* – This off-street trail within the study corridor is proposed as a Priority 3 segment in the MetroGreen Regional Greenway Initiative and the Northland Trails Vision Plan of Clay and Platte Counties. Priority 3 represents a long-term strategy (over the next 15-25 years) and as such, actual planning of the trail has not yet begun. This segment would be located on the north side of the river, most likely on the crest of the levee. The levee is currently owned by the North Kansas City Levee District and ownership would remain with the Levee District if a trail is placed on the property. Property to the north of the levee is privately owned. The north bank of the river (between the shore and the levee) is owned by the U.S. Army Corps of Engineers.
- *The Riverfront Heritage Trail* – The existing portion of this paved, off-street walking and biking path travels from the Isle of Capri Casino, under the Paseo Bridge, through Berkley Riverfront Park along the south bank of the Missouri River, under the Heart of America Bridge to the Town of Kansas site where there is a pedestrian bridge leading to the intersection of 2<sup>nd</sup> and Main. Most of this portion of the trail is on land that is owned by the city of Kansas City, Missouri and leased (long-term) to the Kansas City Port Authority who built and maintains the trail along the riverfront. From 2<sup>nd</sup> and Main, it

begins traveling on the sidewalk south along Main Street, and west along 3<sup>rd</sup> Street through the River Market area. It then travels on the sidewalk along Wyandotte Avenue to 4<sup>th</sup> Street and west under the Broadway bridge, currently terminating at the new River Bluff Park at the west end of the study corridor (4<sup>th</sup> Street and Beardsley Road). The trail also continues along Wyandotte Avenue, across I-29/35 to 9<sup>th</sup> Street. From the River Market area to River Bluff Park and across the Wyandotte Avenue Bridge into the downtown area, the trail is incorporated into the existing city sidewalk system. The streets can be used by bicyclists, but currently these streets do not have designated bike lanes. Posted signs include “Share the Road,” “Bike Route” and “Riverfront Heritage Trail”. There are also markers embedded in the sidewalk pavement that designate the route as the Riverfront Heritage Trail. The trail continues through the Quality Hill District to Case Park and southward. In addition, it is also proposed to be extended west from River Bluff Park to connect to the West Bottoms and a portion of the trail that has recently been built in Kansas City, Kansas. The trail was built to provide an alternative transportation system (reducing high-polluting short car trips) that will bring people to the riverfront to boost economic development, and to provide scenic and recreational amenities which will connect cultural, employment, residential, and commercial activity centers and destinations along the urban riverfront. Based on the City’s and Port Authority’s statement (See letters in Appendix H) that the primary purpose of the trail, in particular, at the location of the Paseo Bridge, is that of transportation, the FHWA has determined that Section 4(f) is not applicable.

- *Other Bike Routes (On-Street)* – The only existing on-street bike route within the study corridor is located on Locust/M-9 (Heart of America Bridge), on the north side of I-29/35. While the shoulders are used by bicyclists, they are not designated or marked on the pavement as bike lanes; however, there are signs with a bicycle symbol saying “Share the Road”. Proposed or planned on-street bike routes within the study corridor that would cross I-29/35, or would be adjacent to it, include Grand Avenue, Charlotte Street, Troost (in the Columbus Park neighborhood) and Independence Avenue (from east of the Paseo Boulevard to Charlotte Street). In addition, a bike route is planned on 5<sup>th</sup> Street and will travel under M-9. In the city of North Kansas City, on-street bike routes are proposed for 16<sup>th</sup> Avenue and Armour Road.

In December 2005, the River Crossing Task Force was formed by MARC to develop a policy to address pedestrian/bicycle accommodations over major river crossings. The policy is currently in the draft stages and MoDOT has provided written comments to the Task Force. MoDOT will continue coordination with MARC on pedestrian/bicycle issues and the policy adopted by the River Crossing Task Force.

**Public Housing Common Space** – The following public housing development contains common space areas:

- *Guinotte Manor Common Space* – There are three separate common space areas within the Guinotte Manor public housing development, which is owned by the city of Kansas City. The common space areas are used only by the residents of Guinotte Manor. This public housing development is located west of I-29/35, in the Columbus Park neighborhood, just south of the Union Pacific railroad tracks.

**Other Publicly Owned Space** – Descriptions of other publicly-owned open space located within the study corridor are as follows:

- *Levees and Floodplain Areas* – The USACE owns a strip of wooded riparian land located on the north side of the Missouri River in the floodplain, south of the levee. The

levee on the north side of the river is owned by the North Kansas City Levee District. In addition, at the north end of the corridor (north of Armour Road) there is another levee that is owned by the North Kansas City Levee District. None of the levee areas or floodplain described above are currently used for recreation or wildlife refuge purposes. The State Emergency Management Agency (SEMA) was contacted and it was determined that there are no flood buyout properties (which are considered publicly owned lands) located within the study corridor.

- *Interchange Open Space (northwest loop)* – On the west side of I-29/35, at the interchange with Front Street, there are two open space areas within the loop roads that are owned by the city of Kansas City, Missouri. The northwest loop area contains only grass and scattered trees and has no recreational use. The southwest area contains a rugby field (see description below). Neither of these areas is designated as city park land.
- *Seymour Rugby Park (southwest loop)* – The inside of the southwest loop road of the I-29/35 interchange at Front Street contains a rugby field on the west half and is used by the Kansas City Rugby Football Club for practices and games. The field is also used by four high school rugby teams and a women’s team, and the Rugby Foundation is planning to provide youth programs through the YMCA. The rugby club refers to this area as Seymour Rugby Park, but it is not included in the Kansas City Park and Recreation Department’s list of parks. The Kansas City Rugby Foundation leases the property through the Kansas City Port Authority who anticipated that the rugby matches would bring more people to Berkley Riverfront Park. The rugby club installed a new irrigation system in the existing field and has built another rugby field in the east half of the loop adjacent to the existing field.
- *55-Acre Port Authority Development Site* – This site, located south of Berkley Riverfront Park, is currently an open area containing a large parking lot that currently serves users of the park. The land is owned by the city of Kansas City and leased to the Kansas City Port Authority, and is not designated as park land. This land is planned to be an architecturally distinctive gateway center for the riverfront by providing a dense, mixed-use urban village development containing hotel, office, retail and residential space and cultural amenities. A developer has recently been selected by the Port Authority to implement this project, and they are currently underway crafting their land plan for the site.
- *Green Space* – On the north side of the Federal Courthouse, at Oak Street and 8<sup>th</sup> Street, there is a one-block square grassed open area with a street running through the northwest corner of it. The land is owned by the city of Kansas City, Missouri (Public Works), however, it is not a designated park and has no recreational amenities.
- *Miscellaneous Open Space* – There are two small parcels of land adjacent to the west side of I-29/35, between Tracy Avenue and the highway, south of, but not adjacent to the Guinotte Manor public housing. One parcel is owned by the city of Kansas City, Missouri and the other is owned by the State of Missouri. Neither of these vacant parcels is designated as a park and there are no recreational facilities on either site.

**Scenic Byways** – There are two scenic byways within the study corridor:

- *The Spirit of Kansas City Regional Scenic Byway* – This regional scenic byway, which interweaves with the Riverfront Heritage Trail, extends from Kansas City, Kansas to the east edge of Berkley Riverfront Park. It travels along 3<sup>rd</sup> Street and connects with Front

Street as it follows the south edge of Berkley Riverfront Park. The city is proposing to eventually extend this scenic byway to connect it with the Cliff Drive Scenic Byway via Holmes Street, 6<sup>th</sup> Street, Independence Avenue, and Paseo Boulevard.

- *Cliff Drive* – The Cliff Drive State Scenic Byway is located at the edge of the study corridor in Kessler Park. It travels from the Paseo at Maple Boulevard, winds east through the park to Gladstone Boulevard, and continues to Belmont Boulevard. In 2002, federal funds were appropriated by FHWA for Phase II interpretation improvements to Cliff Drive.

***Boulevards and Parkways*** – Designated boulevards and parkways within the study corridor that are listed by the Kansas City Parks and Recreation Department as part of the Kansas City park and boulevard system include the following: Paseo Boulevard (parkway with a wide landscaped median), Admiral Boulevard, and Grand Avenue (boulevard).

***Schools*** – The following two schools are located within the study corridor:

- *The Kansas City University of Medicine and Biosciences* is located northeast of the Independence Avenue and Paseo intersection, but there are no recreational facilities located within the study corridor.
- *The Della Lamb Elementary Charter School* is located at the southwest corner of 10<sup>th</sup> Street and Charlotte. The Della Lamb School is owned by Della Lamb Community Services, a nonprofit agency, and is an alternative for low-income families (about 49 percent of the students are refugees). The playground area is fenced and not open to general walk-on use.

***Churches*** – The following six churches are located within the study corridor (there are no active cemeteries in the study corridor):

- *The Holy Rosary Church* is located in the Columbus Park neighborhood at the corner of Missouri Avenue and Campbell Avenue.
- *The Faith City Church* is located in the Columbus Park neighborhood at the corner of Pacific Avenue and Harrison Avenue.
- *The Precious Fragments Full Gospel Church* is located in the Paseo West neighborhood at the corner of 9<sup>th</sup> Street and Forest Avenue.
- *The Together Center and First Christian Church* is located in the Paseo West neighborhood at the corner of 10<sup>th</sup> Street and Forest Avenue.
- *The Covenant Baptist Church* is located in the Paseo West neighborhood at the corner of 9<sup>th</sup> Street and Harrison Avenue.
- *The Old St. Patrick's Catholic Church* is located near the east edge of downtown Kansas City, Missouri, at the corner of 9<sup>th</sup> Street and Cherry Avenue.

***Community Centers*** – The community centers within the study corridor include the following:

- *The Don Bosco Senior Center*, located at Campbell Street and Independence Avenue (just east of Columbus Square), is owned by Don Bosco Community Center Inc., and provides indoor activities and meals to senior citizens.

- *The Don Bosco Youth Development Center* is an indoor facility located at the corner of Campbell Street and Missouri Avenue (one block east of Columbus Square), and is owned by the Catholic Diocese of Kansas City.
- *The City Union Mission Men’s Center*, a homeless shelter, is located at the corner of 10<sup>th</sup> Street and Troost Avenue, and is owned by City Union Mission.
- *The reStart Homeless Shelter*, located at 9<sup>th</sup> Street and Harrison, is owned by reStart, Inc. A transitional housing building that is annexed to the main shelter facility has had funding assistance from the Department of Housing and Urban Development (HUD).

**Museums** – There are two museums within the study corridor as follows:

- The *Arabia Steamboat Museum* is located east of the City Market, in the River Market Area, at Grand Avenue between 4<sup>th</sup> and 5<sup>th</sup> Streets. It houses artifacts from the Steamboat Arabia, which sank in the Missouri River in 1856.
- The *Kansas City Fire Brigade Museum*, owned by the city of Kansas City, is located north of the 11<sup>th</sup> Street and Cherry Avenue intersection.

**Municipal/Government Facilities** – There are five of these facilities located within the study corridor as follows:

- *Kansas City Fire Station #25*, located at the northwest corner of the interchange of I-29/35 and M-9/Locust.
- The *Kansas City Regional Center for the Developmentally Disabled*, located at the corner of 8<sup>th</sup> Street and Charlotte, and owned by the State of Missouri.
- The new *Federal Courthouse* located in downtown Kansas City, Missouri (one block east of the old Federal Courthouse) at 8<sup>th</sup> Street and Oak.
- The old *Federal Courthouse and Post Office* located in downtown Kansas City, Missouri, at 8<sup>th</sup> Street and Grand Avenue.
- The *Industrial Waste Control Facility* (Water Services Department of Kansas City, Missouri), located at the corner of 10<sup>th</sup> Street and Harrison.

**Public Safety and Emergency Services** – Public safety and emergency services that are provided in the study corridor include police, fire and ambulance services.

- **Police** – Police protection in the Kansas City portion of the study corridor is provided by the Central Patrol Division, which operates out of their facility at 1200 E. Linwood. In addition, the Kansas City administrative and investigative offices are located downtown at 11<sup>th</sup> Street and Locust. Police protection in the North Kansas City portion of the study corridor is provided by the North Kansas City Police Department, which operates out of City Hall at Howell Street and Armour Road. None of the police facilities mentioned above are located within the study corridor.
- **Fire** – Fire services for North Kansas City are provided by the North Kansas City Fire Department with two fire stations. The main Fire Station No. 1 is located at the intersection of Howell Street and 18<sup>th</sup> Avenue, and Fire Station No. 2 is located at the intersection of Taney Street and Bedford Avenue. Neither of these stations is located within the study corridor. Fire services for Kansas City are provided by the Kansas City Fire Department. The main office is located near the intersection of Woodland and

Independence Avenues (just out of the study corridor), and there are 34 fire stations, one of which (Fire Station No. 25) is located within the study corridor, northwest of the Independence Avenue/M-9 interchange.

- *Ambulance* – In the city of North Kansas City, ambulance services are provided by the Kansas City Fire Department. Ambulance services for Kansas City are provided by the Metropolitan Ambulance Services Trust (MAST), the sole nonprofit operator in the city of Kansas City. There are no ambulance service facilities located within the study corridor.

### 3. ECONOMIC CHARACTERISTICS

#### a. Employment

The number of persons employed in a region provides a direct measure of economic activity. Employment in higher paid jobs will provide more economic stimulus. In nearly all of the areas studied, the industry with the highest percentage of employees is educational, health and social services. This is not the case in either North Kansas City or the study corridor. The two types of employment with the greatest number of employees in the study corridor are manufacturing and the arts, entertainment, recreation, accommodation and food services industry. The area with the lowest number of employees across all of the areas is agriculture, forestry, fishing and hunting, and mining, which is not surprising considering the urban nature of most of the areas. Table III-6 provides a summary of employment by industry.

**Table III-6  
Employment Characteristics by Industry**

Study Corridor	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri
<b>Agriculture, forestry, fishing and hunting, and mining</b>						
47 0.6%	11 0.4%	777 0.4%	6,370 0.7%	637 0.6%	992 0.3%	58,415 2.2%
<b>Construction</b>						
404 5.5%	110 4.0%	11,237 5.3%	60,732 6.8%	6,115 6.2%	20,748 6.6%	182,858 6.9%
<b>Manufacturing</b>						
1,097 14.8%	522 19.1%	21,424 10.1%	99,680 11.2%	11,749 12.0%	34,944 11.1%	393,440 14.8%
<b>Wholesale Trade</b>						
340 4.6%	114 4.2%	8,363 3.9%	38,340 4.3%	5,378 5.5%	12,063 3.8%	97,021 3.7%
<b>Retail Trade</b>						
667 9.0%	264 9.7%	22,609 10.7%	103,681 11.6%	11,702 11.9%	35,807 11.3%	315,872 11.9%
<b>Transportation and warehousing, and utilities</b>						
345 4.6%	149 5.5%	13,461 6.3%	53,787 6.0%	7,881 8.0%	17,061 5.4%	150,641 5.7%
<b>Information</b>						
367 4.9%	135 5.0%	10,017 4.7%	47,284 5.3%	3,870 3.9%	16,621 5.3%	80,623 3.0%

**Table III-6 (continued)  
Employment Characteristics by Industry**

Study Corridor	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri
<b>Finance, insurance, real estate, and rental and leasing</b>						
629 8.5%	223 8.2%	19,314 9.1%	77,558 8.7%	8,640 8.8%	27,872 8.8%	177,651 6.7%
<b>Professional, scientific, management, administrative, waste management services</b>						
926 12.5%	274 10.1%	22,961 10.8%	91,351 10.3%	9,404 9.6%	30,355 9.6%	198,547 7.5%
<b>Educational, health and social services</b>						
831 11.2%	251 9.2%	38,793 18.3%	163,608 18.4%	15,702 16.0%	58,817 18.6%	541,715 20.4%
<b>Arts, entertainment, recreation, accommodation and food services</b>						
1,157 15.6%	478 17.5%	19,925 9.4%	65,232 7.3%	8,089 8.2%	26,741 8.5%	206,295 7.8%
<b>Other services (except public administration)</b>						
316 4.3%	112 4.1%	11,089 5.2%	42,003 4.7%	4,536 4.6%	17,269 5.5%	132,940 5.0%
<b>Public Administration</b>						
286 3.9%	83 3.0%	12,046 5.7%	41,556 4.7%	4,438 4.5%	16,677 5.3%	121,906 4.6%

Source: U.S. Census 2000

Note: The percentages are based on the total employed civilian population 16 years and over.  
Totals may not equal 100% due to rounding.

There are a number of employment centers located adjacent to I-29/35 including the following major centers. The major employment centers, the employment type, primary access point from I-29/35 and estimated number of employees are listed in Table III-7.

**Table III-7  
Major Employment Centers of the I-29/35 Corridor**

Employment Center*	Employment Type	Access Point	Estimated Number of Employees**
ADM Milling	Industrial	M-210 / Armour	100
United States Gypsum Co.	Industrial	M-210 / Armour	100
Fabri-Quilt	Industrial	16 <sup>th</sup> / Armour / M-210	100
Isle of Capri Casino	Entertainment	Front	800
FAA Central Region (Federal Aviation)	Government, Office	Locust / Main	600
HOK Group Inc	Office	Broadway / Grand	200
Barkley Evergreen & Partners Inc	Office	Broadway / Grand	300

Source: \*MARC \*\*HNTB via phone survey

### b. Income and Poverty

Table III-8 identifies income and poverty characteristics. As shown, part of the study corridor had the lowest median household income at \$9,500, as well as having the highest percentage of persons below the poverty level at about 23 percent. The median household income in the Kansas City Metropolitan Area ranks the highest, ranging from \$42,405 to \$52,297. The second

highest median household income was found in Clay County at \$48,347. Clay County also had the smallest percentage of persons below the poverty level. The lowest per capita income could be found at the bottom end of the range for the study corridor at \$5,601. Both the lowest median household income and the lowest per capita income can be found in Tract 001400. As discussed previously, this tract is located in the city of Kansas City and is bisected by the CBD Loop. The eastern portion of the tract includes a part of the Paseo West neighborhood, while the western portion includes part of the Central Business District (CBD). The data suggests that the study corridor statistics reflect a broad range of household income and per capita income indicating concentrations of both higher income and low income households.

**Table III-8  
Income and Poverty (2000)**

	Study Area	North Kansas City	Kansas City	Kansas City MO-KS Metro Area	Clay County	Jackson County	Missouri
Total Population	16,255	4,714	441,545	1,776,062	184,006	654,880	5,595,211
Median Household Income	\$9,500 – 36,625*	\$28,674	\$37,198	\$42,405 – 52,297*	\$48,347	\$39,277	\$37,934
Per Capita Income	\$5,601 – 40,781**	\$18,967	\$20,753	\$21,452 – 26,168**	\$23,144	\$20,788	\$19,936
Number of Persons below Poverty Level	3,811	587	61,958	147,703	9,898	76,808	637,891
% of Persons below Poverty Level	23.4	12.5	14.3	8.3	5.5	11.9	11.7

Note: Potential Impact Area is calculated at the block level and the Study Area is calculated at the tract level.

\* A range is shown to accurately reflect the Median Household Income by census tract within the study corridor and both the Missouri and Kansas portions of the Metro Area.

\*\* A range is shown to accurately reflect the Per Capita Income by census tract within the study corridor and both the Missouri and Kansas portions of the Metro Area.

Source: Missouri Census Data Center, 2000 Census

### c. Local Sales and Use Tax Collections

Another measure of economic activity is the amount of sales and use tax collections. Sales and use taxes are a substantial part of the local economy and their amount directly impacts revenues for local governments. The general trend in local sales tax collections for the city of North Kansas City, the city of Kansas City, Clay County and Jackson County is illustrated in Table III-9. The data shows a significant increase in local sales and use tax receipts in all of these jurisdictions since 1990.

**Table III-9  
Local Sales and Use Tax Collections (in Thousands)**

Year	North Kansas City	Growth	Kansas City	Growth	Clay County	Growth	Jackson County	Growth
1990	244,473	--	4,512,462	--	1,398,160	--	5,458,293	--
2003	341,211	39.6%	6,981,189	54.7%	2,775,761	98.5%	8,519,643	56.1%

Source: Department of Revenue

## B. Natural Environment

### 1. AIR QUALITY

The Federal Clean Air Act Amendments (CAAA) of 1970 required the adoption of air quality standards. These were established to protect public health, safety and welfare from known or anticipated effects of sulfur dioxide (SO<sub>2</sub>), particulates (PM<sub>10</sub>, 10 microns and smaller; PM<sub>2.5</sub>, 2.5

microns and smaller), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), ozone (O<sub>3</sub>), and lead (Pb). In addition to these pollutants, the State of Missouri has established additional criteria for hydrogen sulfide (H<sub>2</sub>S) and sulfuric acid (H<sub>2</sub>SO<sub>4</sub>). The Missouri and National Ambient Air Quality Standards (NAAQS) for these pollutants are listed in Table III-10.

**Table III-10**  
**Missouri and National Ambient Air Quality Standards**

Pollutant	Averaging Time	Standard Value	Standard Type
<b>Ozone (O<sub>3</sub>)</b>	One Hour <sup>(1)</sup>	0.12 ppm (235 µg/m <sup>3</sup> )	Primary & Secondary
	Eight Hour <sup>(2)</sup>	0.08 ppm (157 µg/m <sup>3</sup> )	Primary & Secondary
<b>Carbon Monoxide (CO)</b>	One Hour <sup>(3)</sup>	9 ppm (10 mg/m <sup>3</sup> )	Primary
	Eight Hour <sup>(3)</sup>	35 ppm (40 mg/m <sup>3</sup> )	Primary
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	Annual Arithmetic Mean	0.053 ppm (100 µg/m <sup>3</sup> )	Primary & Secondary
<b>Particulate (PM<sub>10</sub>)</b>	Annual Arithmetic Mean	50 µg/m <sup>3</sup>	Primary & Secondary
	24-hour average	150 µg/m <sup>3</sup>	Primary & Secondary
<b>Particulate (PM<sub>2.5</sub>)</b>	Annual Arithmetic Mean	15 µg/m <sup>3</sup>	Primary & Secondary
	24-hour average <sup>(4)</sup>	65 µg/m <sup>3</sup>	Primary & Secondary
<b>Lead (Pb)</b>	Quarterly average	1.5 µg/m <sup>3</sup>	Primary & Secondary
<b>Sulfur Dioxide (SO<sub>2</sub>)</b>	Annual Arithmetic Mean	0.03 ppm (80 µg/m <sup>3</sup> )	Primary
	24-hour average <sup>(1)</sup>	0.14 ppm (365 µg/m <sup>3</sup> )	Primary
	3-hour average <sup>(1)</sup>	0.50 ppm (1300 µg/m <sup>3</sup> )	Secondary
<b>Hydrogen Sulfide (H<sub>2</sub>S)<sup>(5)</sup></b>	One-half Hour <sup>(6)</sup>	70 µg/m <sup>3</sup> (0.05 ppm)	
	One-half Hour <sup>(7)</sup>	42 µg/m <sup>3</sup> (0.03 ppm)	
<b>Sulfuric Acid (H<sub>2</sub>SO<sub>4</sub>)<sup>(5)</sup></b>	Twenty-four Hour <sup>(8)</sup>	10 µg/m <sup>3</sup>	
	One Hour <sup>(9)</sup>	30 µg/m <sup>3</sup>	

Source: Code of Federal Regulations; Title 40 Part 50; Revised July 2004 and Missouri 10 CSR 10 – 6.010 Ambient Air Quality Standards

(1) The U.S. EPA will be phasing out the old 1- hour ozone standard.

(2) The 8-hour primary and secondary standards are met when the 3-year average of the 4th highest average concentration is less than or equal to 0.085 ppm.

(3) Not to be exceeded more than once per year.

(4) Statistically estimated number of days with exceedances is not to be more than 1 per year.

(5) Missouri Air Quality Standards.

(6) Not to be exceeded more than twice per year.

(7) Not to be exceeded more than twice in any five consecutive days.

(8) Not to be exceeded more than once in any ninety consecutive days.

(9) Not to be exceeded more than once in any two consecutive days.

ppm – parts per million parts of air (by volume) at 25°C

µg/m<sup>3</sup> – micrograms of pollutant per cubic meter of air

mg/m<sup>3</sup> – milligrams of pollutant per cubic meter of air

The CAAA of 1977 required all states to submit to the U.S. Environmental Protection Agency (EPA) a list identifying those air quality control regions, or portions thereof, which meet or exceed the NAAQS or cannot be classified because of insufficient data. Portions of air quality control regions that are shown, by monitored data or air quality modeling, to exceed the NAAQS for any criteria pollutant are designated "non-attainment" areas for that pollutant.

The 1990 CAAA established procedures for determining the conformity of state implementation plans with the requirements of the federal regulations. These procedures are published in 40 CFR Parts 51 and 93.

The I-29/35 project corridor is located within the Metropolitan Kansas City Interstate Air Quality Control Region (Missouri – Kansas) (AQCR #94). The Kansas City Metropolitan Area, the Clay and Jackson counties, is currently in attainment status for all criteria.

The Kansas City Metropolitan Area was in non-attainment for the 1-hour ozone standard until 1992. At that time the area became a "maintenance" area. In 1995 and in 1997 the area violated the 1-hour standard for ozone but was not reclassified as non-attainment because there

were measures introduced to prevent this from happening again. The Kansas City Metropolitan Area remained in a maintenance area until the new 8-hour ozone standard was introduced in 2004. At this time USEPA reclassified the area as being in attainment for all criteria. Attainment status is evaluated by taking a 3-year average so in any given year the Kansas City Metropolitan Area could be in non-attainment but the average of those years is the determining factor. It is possible that during the next evaluation the Kansas City Metropolitan area will be in violation of the 8-hour ozone standard. If a violation occurs the USEPA will likely reclassify the region as a non-attainment area for ozone. This designation would require that the metropolitan area develop a regulatory plan to improve air quality that meets the new standard in order to attain clean air status.

A Regional Clean Air Action Plan is being formulated that will contain formal commitments from area governments and businesses to voluntarily reduce ozone-forming emissions, both in the short and long term. Commitments will specify the level of emissions reductions anticipated and dates by which the reductions will occur. The plan will also contain a regional consensus position about regulatory controls that would be implemented if the region were to become a non-attainment area. This plan is being prepared to ensure continued compliance with the 8-hour ozone standard.

## **2. NOISE**

### **a. Noise Measurement**

Noise is defined as unwanted sound. It is a form of vibration that causes pressure variations in elastic media such as air and water. The ear is sensitive to this pressure variation and perceives it as sound. The intensity of these pressure variations causes the ear to discern different levels of loudness. These pressure differences are most commonly measured in decibels.

The decibel (dB) is the unit of measurement for noise. The decibel scale audible to humans spans from zero to approximately 140 dB. A level of zero decibels corresponds to the threshold of hearing, while 140 decibels is considered to be the threshold of pain. The decibel scale is a logarithmic rather than a linear representation of the actual sound pressure variations. As a result, the human ear would not detect a change in sound level of one dB. Another example of this characteristic of sound is that a doubling of the energy level would result in a three dB increase in the sound level, which would be barely perceptible to the human ear in the natural environment. Likewise, a tripling in energy level would result in a clearly noticeable change of approximately five dB in the sound level, and a ten-fold increase in sound energy would result in a ten dB increase in sound level. This ten dB increase in the sound level is generally perceived as a doubling of the apparent loudness of the original source.

The human ear has a non-linear sensitivity to the frequency spectrum of noise. Electronic weighting scales are used in noise measurements to define the relative loudness of different frequencies. The "A" weighting scale is the acceptable weighting scale used in environmental work because it closely resembles the non-linearity of human hearing. Therefore, the unit of measurement for an A-weighted noise level is dBA.

Traffic noise is not constant. It varies as each vehicle passes a point. The time-varying characteristics of environmental noise are analyzed statistically to determine the duration and intensity of noise exposure. The equivalent sound pressure level ( $L_{eq}$ ) is the equivalent steady-state sound level having the same A-weighted sound energy as that contained in the time-varying sound over the same period of time. The time period used for traffic noise is one hour. The abbreviation then becomes  $L_{eq}(h)$ . All traffic noise levels in this analysis are expressed in dBA  $L_{eq}(h)$ .

Existing noise level measurements were conducted on March 3, 2005 at nine representative sites in the study area. The measurements were conducted for a period of ten or twenty minutes at each site except for site 9, which was started but not completed due to bad weather. Traffic visible from each site was counted and classified during each measurement.

The measurements were made in accordance with FHWA guidelines using an integrating sound level analyzer meeting ANSI and IEC Type 1 specifications. The data collected at the nine sites are presented in Table III-11. The noise measurement sites (FS-#) are identified on Exhibit III-1.

**Table III-11  
Measured Existing Noise Levels**

Field Site #	Site Description and Distance from Road	Date	Start Time	Duration	Traffic <sup>1</sup>				Noise Level, dBA Leq(h)	
					Direction	A	MT	HT		Speed (mph)
FS-1	Empty lot at 200 Missouri Avenue, N of I-29/35, approx. 26' N of Indep. Ave. edge of pavement.	3/03/05	12:13	20 min.	EB & WB I-29/35 Indep. Ave.	1318 72	69 2	199 1	50 30	66
FS-2	Cul-de-Sac adjacent to 540 Holmes St., approx. 50' E of Cherry Street edge of pavement.	3/03/05	12:50	20 min.	Cherry Street	100	3	3	35	61
FS-3	Don Bosco Senior Center, 580 Campbell St., approx. 38' N of Indep. Ave. edge of pavement.	3/03/05	13:23	20 min.	WB I-29/35 Indep. Ave.	931 91	42 6	90 3	55 35	68
FS-4	Residence, 1139 Pacific St., approx. 125' W of I-29/35 edge of pavement.	3/03/05	13:58	20 min.	NB & SB I-29/35	2154	72	189	55	64
FS-5	Residence, 304 Lydia Ave., approx. 260' W of I-29/35 edge of pavement.	3/03/05	14:35	20 min.	SB I-29/35	1218	50	82	55	65
FS-6	Residence, 560 Tracy Ave., approx. 164' E of I-29/35 edge of pavement.	3/03/05	15:21	20 min.	NB & SB I-29/35	2520	65	186	45	65
FS-7	Residence, 1326 Virginia Ave., approx. 298' W of Paseo.	3/03/05	15:54	10 min.	--	--	--	--	--	55
FS-8	Cul-de-Sac at 21 <sup>st</sup> Ave., approx. 56' W of SB off ramp to Armour Road edge of pavement.	3/03/05	16:47	20 min.	--	--	--	--	--	67
FS-9	Residence, 28 <sup>th</sup> Ave. and Chippewa Dr., approx. 180' E of I-29/35 edge of pavement. Measurement not completed due to high wind and rain.	3/03/05	17:37	4 min.	--	--	--	--	--	No Data

<sup>1</sup>Autos (A) defined as 2-axle, 4-tire; medium trucks (MT) as 2-axle, 6-tire; heavy trucks (HT) as 3 or more axles.  
Source: HNTB Corporation, March 2005

The FHWA Traffic Noise Model, V. 2.5 (TNM<sup>®</sup>)<sup>1</sup> was used to model the field measurements, using the traffic data counted during the measurements, to determine the applicability of the model to the specific project environment. The following parameters were used in this model to calculate an hourly  $L_{eq}(h)$  at a specific receiver location:

- Distance between roadway and receiver;
- Relative elevations of roadway and receiver;
- Hourly traffic volume in light-duty (two axles, four tires), medium-duty (two axles, six tires), and heavy-duty (three or more axles) vehicles;
- Vehicle speed;
- Roadway grade; and
- Topographic features, including retaining walls and berms.

Comparing the modeled noise levels to the measured noise levels confirms the applicability of the computer model to the specific project. Traffic volumes were counted and classified concurrently with the noise measurements at six of the nine field sites. The six modeled sites compared within 0-2 dB of the measured levels. This represents reasonable correlation since the human ear can barely distinguish a 3-dB change in a natural setting. The site by site comparison is presented in Table III-12.

**Table III-12**  
**Comparison between Measured and Modeled Data**

Field Site <sup>1</sup>	Noise Level, dBA Leq(h)		Difference, dBA Leq(h) (Modeled minus Measured)
	Measured	Modeled	
FS-1	66	68	2
FS-2	61	61	0
FS-3	68	68	0
FS-4	64	64	0
FS-5	65	65	0
FS-6	65	66	1

<sup>1</sup>Sites 7, 8 and 9 were not modeled.  
Source: HNTB Corporation, March 2005

## b. Vibration

There are two types of transportation related vibration sources that are worth noting in the I-29/35 Study Corridor:

- Normal highway traffic – Heavy trucks, and quite frequently buses, generate the highest vibrations of all of the vehicle traffic. Vibrations from these vary with pavement conditions. Pot holes, pavement joints, differential settlement of pavement, among others, all increase the vibration levels.
- Construction equipment – Pile driving, pavement breaking, blasting and demolition of structures generate among the highest construction vibrations.

<sup>1</sup> Michael C. Lau, Cynthia S. Y. Lee, Gregg G. Judith L. Rochat, Eric R. Boeker, and Gregg C. Fleming. FHWA Traffic Noise Model<sup>®</sup> Users Guide (Version 2.5 Addendum). Federal Highway Administration, April 2004.

Traffic and most construction vibrations (with the exception of pile driving, blasting and some other types of construction/demolition) are considered continuous. However, “safe” levels for continuous vibrations from sources such as traffic are not well defined.

Elderly, retired or ill people staying mostly at home, people reading in a quiet environment, people involved in vibration sensitive hobbies or other activities are examples of people that are potentially bothered by low vibration levels. Most complaints of traffic vibrations come from individuals in these categories. To these individuals, even vibrations that are barely perceptible might be bothersome.

Frequently, low level traffic vibrations can cause secondary vibrations, such as slight rattling of doors, windows, stacked dishes, etc. These objects are often in a state of neutral equilibrium and readily respond to very low levels of vibration. The rattling sounds can give rise to complaints, while there is very little risk of damage.

When dealing with existing transportation facilities, obvious vibration causes, such as pot holes, pavement cracks differential settlement in bridge approaches or individual pavement slabs, amongst others, may be eliminated by resurfacing.

The use of alternate construction methods and tools may reduce construction vibrations. Scheduling certain construction activities (i.e., pile driving) for times when it does not interfere with vibration sensitive operations may be another solution, especially in residential areas.

### **3. PHYSICAL SETTING**

#### **a. Physiography and Topography**

The study area is located at the south and north boundaries of Clay and Jackson Counties, Missouri respectively. The area is also located at the border of the dissected till plains (north) and Osage Plains (south). Both are within the Central Lowland Physiographic Province. The study area topography can be generally characterized with the north half of the project as the nearly level alluvial plain of the Missouri River from M-210 to Front Street and for the south half, or CBD Loop portion, as gently rolling upland loessial hills.

#### **b. Soils**

The soils of the uplands are characterized as loess and soils derived from weathering of loess, and to a lesser extent, residual soils formed from the long term weathering of the underlying bedrock materials. Soils of the alluvial plain are characterized as sandy and silty, with lesser amounts of clay.

#### **c. Geology**

Over past geologic time, at the ends of glacial periods, the Missouri River yielded vastly greater flows (melting glaciers) at a steeper gradient (lower sea level). Thus, the river eroded the underlying Pennsylvanian Age bedrock to approximately 100 feet (30.5 meters) below the present ground surface. After the last glacial period, flows ebbed, sea levels rose, and gradients shallowed, allowing the river to fill the former deep, wide, valley with a layer of mostly sand, forming a nearly level five-mile (8-kilometer) wide plain.

The thickness of the alluvial material can vary from about 85 feet (25.9 meters) to as deep as 185 feet (56.4 meters). The variation is due to the difference in the erosional bedrock surface. In the area of the north bank the alluvium is approximately 85 feet (25.9 meters) thick with a bedrock surface of an approximate elevation of 648 feet (197.5 meters) above sea level. The bedrock surface is slightly deeper at the south bank at an approximate elevation of 642 feet (195.7 meters).

The alluvium is mostly composed of loose to medium dense poorly graded sand (SP), with mixtures, lenses and layers of clay, silt, and gravel.

Meandering of the river over geologic time has created features such as cut-off channels and point bars. These former channels may be now filled with soft, compressible, clay material. However, the current position and geometry of the river indicate the top stratum of alluvium to be of point bar deposition, most likely composed of sand. Over the entire floodplain, and especially in the deeper bedrock areas, typically, a layer several feet thick of cobbles and boulders exist above the bedrock.

The underlying bedrock is of the Pleasanton Group, Missourian Series, Pennsylvanian System. The Pleasanton Group is composed of three unnamed formations, noted as the upper, middle, and lower unnamed. The average thickness of the Pleasanton is approximately 90 feet (27.4 meters) in its entirety. Since the Pleasanton forms the buried eroded bedrock surface, differing thicknesses will be encountered at the project site. The Pleasanton is composed of mostly shale with minor amounts of sandstone, channel fill sandstone, very thin limestone layers, thin coal beds, and under clay layers. The Marmaton Group underlies the Pleasanton and is very similar in composition, especially in the upper portion of the group.

The upland area south of Guinotte Street (along the north side of Kessler Park) is characterized as loess covered bluffs adjacent to the flood plain. The underlying bedrock of the Kansas City Group is a sequence of layers of mostly limestone with interbedded shale layers.

**Mining** – No past or present mining is noted in the study area, however, sand is dredged from the Missouri River.

**Seismic Hazards** – The study area is located and classified according to the American Association of State Highway and Transportation Officials (AASHTO) as Seismic performance Category A – requiring no special seismic design considerations.

#### 4. WATER RESOURCES

In the preliminary inventory of existing water resources within the study corridor, data was gathered from USGS quadrangle maps, the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) maps, aerial photography, and field observations from public right-of-way. The existing water resources include streams, wetlands and ponds and are presented on Exhibit III-6.

The NWI maps are based on a classification system known as the Cowardin System (named after its principal author, Cowardin et. al. 1979). This system classifies the types of ecosystems related to water resources which, in this region, include streams, lakes, ponds, and vegetated wetlands. After a review of the water resource data, it was determined that the following Cowardin systems represented in the study corridor are the Riverine Lower Perennial stream system (R2), the Palustrine Forested (PFO) wetland system and the Palustrine Unconsolidated Bottom (PUB) system which represents upland ponds.

Section 404 of the Clean Water Act regulates discharges of dredged or fill materials into "waters of the U.S." (streams, lakes, wetlands, and ponds that are connected to streams). The U.S. Army Corps of Engineers (USACE) is the regulatory agency responsible for administering the Section 404 permit program. At the beginning of the EIS process the USACE was sent a letter soliciting comments on the project. The USACE participated in a preliminary coordination meeting held in June 2003, the project scoping meeting held in May 2004, the Cooperating Agency meeting held in September 2005, and coordination meetings held in February and

March 2006. Comments were also received from the USACE in a letter dated March 15, 2006 (see Appendix G)

**a. Streams**

The streams within the study corridor include the Missouri River, the North Hillside Drainage Ditch, an unnamed tributary to the North Hillside Drainage Ditch, and an unnamed drainage ditch, all of which are “waters of the U.S.” According to the NWI maps, the Missouri River is a lower perennial unconsolidated bottom stream (R2UBH) that is approximately 800 feet (243.8 meters) wide (at ordinary high water) where it passes through the study corridor. At this location, the navigational channel has shifted (since the Paseo Bridge was built) from the center of the river to along the south bank. The Missouri River is not on the list of designated Wild and Scenic Rivers.

The North Hillside Drainage Ditch and its unnamed tributary are located at the north end of the study corridor. Neither of these streams have NWI designations, but they are shown as intermittent streams on the USGS maps. The North Hillside Drainage Ditch has been channelized to run parallel to the north side of the levee north of Armour Road in North Kansas City. The unnamed tributary to the North Hillside Drainage Ditch has a more natural channel and runs through River Forest Park before it merges with the North Hillside Drainage Ditch at the levee. These two streams have discernible ordinary high water marks (OHWM), are connected to a “water of the U.S.,” and are therefore under USACE jurisdiction. There is also an unnamed drainage ditch (appearing to be ephemeral) located just north of 16<sup>th</sup> Avenue on the east side of I-29/35. It has a channel with an OHWM, and although it has no direct connection to a water of the U.S., it is within the historic floodplain of the Missouri River, and therefore under USACE jurisdiction.

**b. Wetlands**

Areas mapped as vegetated wetlands on the NWI maps (PEM – palustrine emergent, PSS – palustrine scrub-shrub, PFO – palustrine forested) have the potential of being regulated as special aquatic sites by the USACE. The regulatory definition of wetlands, as adopted by the EPA and USACE to administer the Section 404 permit program is as follows:

*(Wetlands are) those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, bogs, and similar areas (EPA, 40 CFR 239.2 and CE, 33 CFR 328.3).*

This definition emphasizes the fact that wetlands must possess the following three essential characteristics before a positive determination of a wetland can be made: hydric soils, a prevalence of hydrophytic vegetation, and a persistent wetland hydrology. Jurisdictional wetland determinations performed for regulatory purposes are not dependent on the NWI Cowardin classification system, but on these three mandatory characteristics.

Vegetated wetlands within the study corridor are minimal since much of the study corridor is situated in urban built-up land. There is only one area shown on the NWI maps that is classified as a vegetated wetland. This area is the palustrine forested wetland system (PFO1A – palustrine forested, broad-leaved deciduous, temporarily flooded) located on the north side of the Missouri River, between the river and the levee. A portion of this NWI area, on the east side of the existing bridge, was investigated in the field and was determined not to be a jurisdictional wetland.

In addition to the mapping sources listed above, data was also gathered from Natural Resources Conservation Service (NRCS) soil survey maps to determine the presence or absence of hydric soils. This data indicated that the area along the north bank of the Missouri River and the area north of 16<sup>th</sup> Avenue (east side of I-29/35) contain soil with hydric inclusions in the portions that are frequently flooded. No other areas within the study corridor contain hydric soils or soils with hydric inclusions.

Along the south side of the Missouri River, a 16-acre (6.5-hectare) area has recently been restored to wetland habitat. The project, known as the Kansas City Ecosystem Restoration Project, was sponsored by the U.S. Army Corps of Engineers and the Kansas City Port Authority and also contains a wetland interpretive center. However, the project, located just west of the ASB Bridge, is outside of the study corridor, approximately one mile west of the Paseo Bridge.

Field investigation resulted in the discovery of two vegetated wetland areas located in depressions north of 16<sup>th</sup> Avenue, on the east side of I-29/35. Neither of these wetlands is shown on the NWI maps. One is a 0.27-acre emergent wetland located to the north of the unnamed drainage ditch in this area. The source of hydrology comes from overland flow from the highway embankment on the west and to the north, and from the industrial trailer storage yard on the east. It is a poorly drained area and any outflow travels to the unnamed drainage ditch to the south of the wetland area. It is a jurisdictional wetland due to its location in the historic floodplain of the Missouri River.

The second wetland is a 0.02-acre forested wetland containing only a few cottonwood trees. It is located in a depression near the south end of the unnamed drainage ditch, just north of 16<sup>th</sup> Avenue. The source of hydrology comes from ditch flow from the north, and from the culvert under 16<sup>th</sup> Avenue that flows into the unnamed ditch on the west side of the wetland area. However, the ditch outflow culvert at the west end of the ditch is plugged with debris and sediment, and the water backs up rather than draining out, resulting in a poorly drained area. This wetland is jurisdictional due to its location in the historic floodplain of the Missouri River.

There is also a narrow band of fringe emergent/forested wetland around the perimeter of a detention pond (the NWI designation of the pond is PUBGx) located within the 16<sup>th</sup> Avenue loop ramp. The emergent wetland portion covers 0.02 acre around the west perimeter of the pond and the forested wetland portion covers 0.02 acre around the east perimeter of the pond). This fringe wetland is considered jurisdictional due to its location in the historic floodplain of the Missouri River.

The results of the field investigations have been compiled in a report titled Waters of the U.S. and Preliminary Jurisdictional Wetland Determinations Summary Report, a portion of which can be found in Appendix I. The complete report is available upon request.

### **c. Ponds**

The NWI maps indicate one palustrine “unconsolidated bottom” (PUB) system within the study corridor; a detention pond (receiving run off from the highway and inflow from two culverts) located inside the 16<sup>th</sup> Avenue interchange loop in North Kansas City. A windshield survey also discovered another small detention pond (not on the NWI maps) located in North Kansas City on the west side of I-29/35 (outside of the existing MoDOT right of way), just south of 19<sup>th</sup> Avenue. This pond receives run off from a paved parking area to the west and is usually dry between storm events. The 16<sup>th</sup> Avenue detention pond contains a narrow fringe wetland around its perimeter (as described above in the wetlands section), but neither of the ponds has a stream channel flowing in or out of it.

#### d. Floodplains

As part of the National Flood Insurance Program (NFIP), the cities of North Kansas City and Kansas City have adopted Flood Insurance Studies (FIS) to identify flood hazards for floodplain management and flood insurance purposes. The administration of the NFIP, performed by the Federal Emergency Management Agency (FEMA), entails detailed studies of flood prone streams and rivers for the determination of flood boundaries and flood hazards. The level of detail for the studies varies depending on the severity of the flooding hazards and other factors. In the case of the city of Kansas City, a detailed FIS was available and the NFIP Flood Insurance Rate Maps (FIRM), showing the 100-year floodplain and the regulatory floodway (dated Revised: August 5, 1986) were collected and reviewed for the study corridor. The Q3 digital floodplain data from FEMA was also reviewed.

The FEMA and the FHWA guideline 23 CFR 650 has identified the base (100-year) flood as the flood having a one percent probability of being equaled or exceeded in any given year. The base floodplain is the area of 100-year flood hazard within a county or community. The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood discharge can be conveyed without increasing the base flood elevation more than a specified amount. FEMA has mandated that projects can cause no rise in the regulatory floodway, and a one-foot cumulative rise for all projects in the base (100-year) floodplain. For projects that involve the state of Missouri, the SEMA issues floodplain development permits. In the case of projects proposed within regulatory floodways, a “no-rise” certification, if applicable, should be obtained prior to issuance of a permit.

Floodplains provide natural and beneficial values to nature and society. For example, vegetation in the floodplain provides food, resting and nesting areas for wildlife. Floodplains can also provide water storage during floods, reducing peak discharges and act as filters to purify the flood water that is temporarily stored there. Floodplains can also provide open areas or green spaces that provide aesthetic or recreational value to a community.

SEMA was contacted to determine if there are any “flood buyout” properties within the study corridor. These properties cannot be developed due to open space deed restrictions, and are exclusively dedicated to open space and recreation. It was determined that no such properties exist within the study corridor.

Streams located in the study corridor which have designated floodplains include the Missouri River, the North Hillside Drainage Ditch, and an unnamed tributary to the North Hillside Drainage Ditch (see Exhibit III-6).

***Unnamed Tributary to North Hillside Drainage Ditch*** – At the north end of the study corridor, I-29/35 crosses (via a culvert) an unnamed tributary north of the levee that runs generally from northwest to southeast. This stream has a natural channel, with an adjacent wooded riparian area, that flows under I-29/35 and through an undeveloped wooded area in River Forest Park before it merges with the North Hillside Drainage Ditch at the levee. Although there is no floodplain data available at the I-29/35 crossing location, the immediate upstream floodplain width is approximately 150 feet (45.7 meters). At the River Forest Park area the floodplain width increases to approximately 460 feet (140.2 meters). This tributary does not have a regulatory floodway.

***North Hillside Drainage Ditch*** – Also at the north end of the study corridor, I-29/35 crosses (via a culvert) the “North Hillside Drainage Ditch” as labeled on the city of North Kansas City FIRM. This tributary runs parallel to the north side of the levee north of Armour Road in North Kansas City. On the east side of I-29/35, this tributary has a floodplain width of approximately

150 feet (45.7 meters), consisting of grass on the levee side, and shrubs and trees on the north side of the tributary. On the west side, there is a more extensive floodplain area of approximately 915 feet (278.9 meters) in width, which is located in a multi-family and single-family residential area. Even though this stream has water surface elevations identified on the FIRM, existence of a regulatory floodway has not been confirmed.

**Missouri River** – The I-29/35 Study Corridor crosses the Missouri River (via the Paseo Bridge) at river mile 364.8. At this location there is a levee on each side of the river. The 100-year floodplain is approximately 1350 feet (411.5 meters) wide and the regulatory floodway is approximately 1500 feet (457.2 meters) wide. The floodway width exceeds the floodplain width because the floodway includes the foot print of the levees, while the floodplain only reflects the actual width of inundation. Within the floodplain, there is a wooded riparian area on the north side of the river.

## 5. WATER QUALITY

### a. Surface Water

The study corridor is located within the Lower Missouri-Crooked watershed (Hydrologic Unit #10300101). The surface water resources in the study corridor were discussed previously in Section 4. Water Resources. The quality of these resources varies depending upon such factors as water permanence, type of shoreline/bank and surrounding vegetation, substrate, presence or absence of in-flowing streams, and surrounding land use. In this type of urban environment, major concerns include channelization or other alteration of natural stream channels, construction site erosion, and residential and commercial use of pesticides and fertilizers. All surface runoff in the study corridor eventually flows into the Missouri River.

The federal Water Pollution Control Act, section 303(d), requires that each state identify those waters that are not meeting the state's water quality standards (i.e. for which existing required pollution controls are not stringent enough to implement state water quality standards). For these waters, states are required to establish total maximum daily loads (TMDLs) according to a priority ranking. A TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still meet water quality standards. The Revised Environmental Protection Agency (EPA) Consolidated 2002 Missouri 303(d) List (made available in January 2004) and the Missouri Department of Natural Resources' (MDNR) list of 303(d) impaired waters (modified as of May 2004) were reviewed. Although the Missouri River was listed, the reaches of the river that were on the list did not fall within the study corridor. The North Hillside Drainage Ditch and its unnamed tributary at the north end of the study corridor were also not on the list, nor were any of the other water bodies within the corridor.

The MDNR's Water Quality Regulations (10 CSR-20-7.031) contains a list of waters of the state (streams, rivers, lakes, and wetlands) that have some amount of water year round, and have identified beneficial uses. Within the study corridor, the Missouri River is the only water listed. It is a class "P" stream (maintains permanent flow during drought conditions) and has beneficial uses such as irrigation, livestock and wildlife watering, protection of warm water aquatic life and human health/fish consumption, boating and canoeing, drinking water supply, and industrial use. There are no Outstanding National or State Resource Waters within the study corridor.

### b. Groundwater

The groundwater level may be very near the surface in the alluvium. Source and recharge of the alluvial groundwater is almost entirely from the Missouri River. The groundwater table fluctuates directly with the river levels as there is a direct interchange between the river and the alluvial groundwater. There is a delayed response of only a few days between higher river levels and higher groundwater levels. Recharge and discharge is more by way of river than by

percolation of rain and surface water. Groundwater control such as dewatering wells and/or sumps may be necessary for excavations made anywhere in the floodplain.

The alluvium is considered very permeable with the ability to produce a large amount of groundwater.

The entire study area relies on public water supplies. Water is supplied by the city of North Kansas City, Missouri and the city of Kansas City, Missouri. The cities of North Kansas City and Kansas City have water supply wells constructed at two separate sites in the alluvium between 0.5 miles (0.8 kilometers) and two miles (3.2 kilometers) from the I-29/35 centerline. Kansas City also has a river water intake at the same site. Sanitary and storm sewers serve the entire area.

In the uplands, various shallow perched groundwater levels exist in the soil and bedrock. Deeper regional groundwater is present in the Pennsylvanian bedrock; however, due to dissolved solids it is non-potable and known as the Saline Ground-Water Province. The fresh-saline threshold is 1000 parts per million (ppm). Dissolved solid values in the Pennsylvanian bedrock are in the range of 10,000 ppm and up. Due to the low permeability of the Pennsylvanian strata, very little groundwater movement or recharge occurs.

## **6. BIOLOGICAL RESOURCES**

The majority of the study corridor is comprised of urban built-up land. The most dominant vegetative natural communities occurring in the study corridor, although few, are the remnant upland and riparian forests (wooded areas). Grassed areas are predominantly composed of maintained cool-season grasses in residential and commercial/industrial areas. Wildlife, although not abundant, does exist in the study corridor, and potential habitat for threatened and endangered species exists.

### **a. Forest Communities**

The forested areas in the study corridor are isolated small tracts that are the result of previous fragmentation or alteration (see Exhibit III-6). The upland oak-hickory forest remnants occur on steeper slopes that are not conducive to development, in low-density residential areas or in park land (River Forest Park and Kessler Park). The majority of the riparian forest occurs in the floodplain on the north bank of the Missouri River and is dominated by cottonwood trees.

The riparian forest areas within the study corridor were determined by studying aerial photography, USGS topographic maps, floodplain maps, and NWI maps. Areas determined to be riparian forests were those designated on the NWI maps as palustrine forested areas, and all forested areas within the 100-year floodplain of streams. In addition, wooded areas within 25 feet (7.6 meters) of the banks of intermittent streams in the uplands were considered to be riparian forest for analysis purposes. All other wooded areas were considered to be upland.

The importance of these wooded areas in protecting water resources from runoff, stabilizing stream banks, inhibiting soil erosion, providing aesthetic value, wildlife habitat, and plant and animal diversity is evident, especially in areas where much of the forest has been cleared for development purposes. These wooded areas are important wildlife migration corridors.

### **b. High Quality Natural Communities**

The MDC has identified some high quality natural communities within the state that have been, for the most part, undisturbed and that possess defining characteristics of a specific type of natural community. These residual areas are important to the natural heritage of the region, not only because of their uniqueness, but also because they may provide habitat for rare species.

These units have been located, mapped, and compiled in the MDC's Natural Heritage Database (NHD). According to the MDC (see letter in Appendix G, dated January 9, 2004) the NHD did not contain any significant natural communities in the study corridor.

### c. Wildlife

The study corridor is located in a highly urbanized/developed area, and the original natural habitat has been disturbed. In general, some of the species of wildlife that have adapted to living in this urbanized area include many species of birds, such as the northern cardinal (*Cardinalis cardinalis*), the rock dove or pigeon (*Columba livia*), the mourning dove (*Zenaida macroura*), the American goldfinch (*Carduelis tristis*), the blue jay (*Cyanocitta cristata*), the northern mockingbird (*Mimus polyglottos*), the American robin (*Turdus migratorius*), the American tree sparrow (*Spizella arborea*) and the house wren (*Troglodytes aedon*).

Some of the mammals that have adapted to the area include the Virginia opossum (*Didelphis virginiana*), the striped skunk (*Mephitis mephitis*), the gray squirrel (*Sciurus carolinensis*), the eastern cottontail rabbit (*Sylvilagus floridanus*), the raccoon (*Procyon lotor*), and the white-tailed deer (*Odocoileus virginianus*).

The Missouri River provides habitat for some common fish species such as the grass carp (*Ctenopharyngodon idella*), the paddlefish (*Polyodon spathula*), the suckermouth minnow (*Phenacobius mirabilis*), the green sunfish (*Lepomis cyanellus*) the river shiner (*Notropis blennioides*) and catfish such as the flathead (*Pylodictis olivaris*). The ponds and damper environments in the study corridor can provide habitat for amphibians such as the eastern American toad (*Bufo americanus*), the southern leopard frog (*Rana sphenoccephala*), western chorus frog (*Pseudacris triseriata*) and the eastern tiger salamander (*Ambystoma tigrinum*). Some of the reptiles include the western painted turtle (*Chrysemys picta*), the five-lined skink (*Eumeces fasciatus*), the northern fence lizard (*Sceloporus undulatus*) and the eastern hognose snake (*Heterodon platirhinos*).

### d. Threatened and Endangered Species (Federal and State Listed)

Under the U.S. Endangered Species Act, the USFWS has primary responsibility in the protection of federally endangered and threatened species and designation of critical habitat areas for these species. All federally endangered and threatened plants and animals are protected by the Endangered Species Act of 1973 (ESA). The MDC determines species' state status in Missouri under constitutional authority (3CSR10-4.111 Endangered Species). Species that are listed in the Wildlife Code under 3CSR10-4.111 are protected by State Endangered Species Law 252.240.

Correspondence was conducted with the USFWS (see letter dated January 22, 2004, in Appendix G) concerning species listed as federally endangered or threatened that could occur in or near the study corridor. Correspondence was also conducted with the MDC (see letter dated January 9, 2004, in Appendix G) and information was obtained from the MDC's Natural Heritage Database to see if there are any rare species or rare natural communities that have been known to occur in or near the study corridor. Although there were no known locations or recorded occurrences directly within the study corridor, some occurrences were recorded near the corridor. It was determined that the following species could potentially occur in the area:

- **Bald Eagle (*Haliaeetus leucocephalus*)** (*Threatened on the federal level, Endangered on the state level*) – Bald eagles are common migrants and winter residents throughout Missouri and are uncommon breeders along some of the major rivers and larger reservoirs in the state. During winter, they gather near large open water areas, usually

occupying river habitats between November 15<sup>th</sup> and March 1<sup>st</sup>, and preferring areas with limited human activity. They usually perch within a riparian corridor, or along lake shores, and prefer trees greater than 11 inches (27.9 centimeters) diameter (at breast height – dbh) and within 100 to 600 feet (30.5 to 182.9 meters) of water. They also tend to roost on the tallest trees [greater than 63 feet (19.2 meters) above ground level] such as cottonwood and sycamore. At night, wintering bald eagles may congregate at communal roosts and may travel as much as 12 miles (19.3 kilometers) from feeding areas to a roost site. Nesting activity is most often initiated between January 1<sup>st</sup> and March 1<sup>st</sup>, and the most critical time for incubation and rearing of young is between March 1<sup>st</sup> and May 15<sup>th</sup>. Although the wooded corridor on the north shore of the Missouri River provides potential bald eagle nesting or roosting habitat, there are currently no known or recorded locations of bald eagle nests or roosting areas within or near the study corridor.

- ***Pallid Sturgeon (Scaphirhynchus albus)*** (*Endangered on both the federal and state level*) – The pallid sturgeon’s primary range and habitat is in the Missouri River, but it can also occur in the Mississippi River downstream of its confluence with the Missouri River. It is a bottom-dwelling fish that prefers the turbidity and swift current of the two rivers and locations with a firm sand bottom. In Missouri, the spawning season runs from June 1<sup>st</sup> to August 1<sup>st</sup>.

According to the USFWS, the pallid sturgeon has been captured in tributary mouths, over sandbars, along main channel borders and in deep holes, which can provide overwintering habitat. In addition, small pallid sturgeons have been captured in off-channel, shallow water areas. Deep holes can include scour holes behind bridge piers and at wing dike or L-dike tips where scouring takes place. Hydrographic surveys (dated 1994 and 1999-2000), aerial photography (flown March 2002) and field observations (October 2004) indicate that there are three dikes located within the study corridor [within 1000 feet (304.8 meters) of the Paseo Bridge] on the north side of the river. One is an L-dike west of the bridge and it appears that some breaching may have occurred. There appears to be a scour area on the downstream (east) side of the dike, but deposition has occurred in the area from the scour hole to the bridge. Another L-dike is located below the east edge of the bridge, and it appears that deposition has filled in the area inside of the dike except for a scour area at the tip of the dike. A wing dike is located about 800 feet (243.8 meters) east of the bridge and appears to have a large scour area on the downstream (east) side. The 1999-2000 hydrographic survey shows this scour hole to be approximately 40 feet deep from the shore and about 20 feet deeper than the adjacent river bed. In addition, one concrete bridge pier is located in the main river channel and one is located on the north edge of the river at the L-dike below the bridge. There would most likely be scour holes on the downstream side of the piers. The combination of scour holes, structures such as wing or L-dikes, and sandbars can provide an appropriate habitat complex for the pallid sturgeon. According to the MDC, there has been an occurrence of the pallid sturgeon west of the study corridor near the Broadway Bridge.

MoDOT conducted a hydrographic survey on the Missouri River at the Paseo Bridge location in March 2006 to obtain more up to date information than the 1994 and 1999-2000 studies. The survey was conducted to determine the existence of potential habitat within a 250 foot area that included the existing Paseo Bridge and the area within the proposed right of way on the east side of the bridge. This information is being shared with USFWS as part of an informal coordination effort on this issue.

Fishery sampling programs conducted by the USFWS have also indicated that the pallid sturgeon is often found along with the shovelnose sturgeon (*Scaphirhynchus platorhynchus*), which is not endangered, indicating some overlap in habitat requirements. Proper species identification is important due to the similarity in younger representatives of both species.

Rather than having a restricted home range, the pallid sturgeon can travel long distances and can be found at a variety of depths. A recent study in the lower Missouri River documented the sturgeon's preferences in regard to movement and water depth. A male and female were implanted with ultrasonic telemetry transmitters and archival temperature/depth recording tags in 2003. Within a year, the female remained within a two-mile (3.2 km) reach of the river, whereas the male moved rapidly and traveled 100 miles (161 km) in three months, at which time contact was lost. Both fish inhabited depths ranging from 4.5 to 35.4 feet (1.4 to 10.8 meters), and averaging depths of 13 feet (4 meters) while rarely using depths less than 6.5 feet (2 meters) (Delonay, 2004).

The U.S. Geological Survey Columbia Environmental Research Center is conducting studies on shovelnose and pallid sturgeon on the Missouri River. Data from May 2005 (Dr. Robert Jacobson, Research Hydrologist, USGS-CERC) showed that six shovelnose sturgeon were located via acoustic telemetry within 11 miles upstream and downstream of the Paseo Bridge (closest location, three miles downstream).

Recent capture data for pallid sturgeons in February and March 2006 were for sampling stations monitored by the Missouri Department of Conservation. These recent captures were approximately 20, 30, and 40 river miles downstream of the project area at the Paseo Bridge.

- **Peregrine Falcon (*Falco peregrinus*) (Endangered on the state level)** – The peregrine falcon has historically nested on cliffs, but it has also adapted to nesting on tall city buildings where pigeons, their primary source of food, also occur. The MDC's Natural Heritage Database indicated that a peregrine falcon nest site exists on a tall building in the downtown Kansas City area, just south of the study corridor.

### **Species of Conservation Concern**

Annually, the MDC publishes the Missouri Species of Conservation Concern Checklist (MSCCC), which is a list of rare plants and animals in the state. These species are given a "state rank", according to rarity, and those with a rank of 1, 2 or 3 are "species of conservation concern". To avoid violating state statutes, MoDOT considers these species during the project planning process. A brief explanation of each ranking is as follows:

- S1 – Critically imperiled (typically five or fewer occurrences or very few remaining individuals)
- S2 – Imperiled (six to 20 occurrences or few remaining individuals or acres)
- S3 – Rare or uncommon (21 to 100 occurrences)

According to the MSCCC the pallid sturgeon and the peregrin falcon are ranked S1 in the state and the bald eagle is ranked S3. All three species are endangered on the state level as discussed previously. The silver chub (*Macrhybopsis storeriana*) and the sturgeon chub (*Macrhybopsis gelida*) are ranked S3 in the state and have been observed in the Missouri River. The silver chub has been observed in the river east of the study corridor and the sturgeon chub has been observed in the river northwest of the study corridor.

## 7. CULTURAL RESOURCES

### a. Introduction

The proposed construction work on I-29/35 within Kansas City, Missouri could result in unavoidable impacts (or destruction and visual effects) to recommended significant cultural resources and existing National Register of Historic Places properties and districts. Cultural resources include all prehistoric and historic archaeological resources, as well as buildings, structures, objects, sites and districts. Of these resources, only those associated with significant persons or events in history or prehistory, that exhibit significant architectural features, or which could provide valuable new information, are deemed significant (National Register Bulletin 1995). The cultural resource investigations were performed according to the Scope of Services prepared by MoDOT. The cultural resource investigations consisted of an archival search, an architectural survey, and an archaeological evaluation.

### b. Previous Investigations

An archival search was performed in order to gain an understanding of the historical background of the project area and to identify any previously recorded cultural resources. These previously recorded cultural resources included, but were not limited to, properties eligible for the National Register of Historic Places (NRHP), properties and districts determined eligible by the State Historic Preservation Office and the Landmarks Commission of Kansas City, cultural resource management studies, archaeological (historic and prehistoric) sites, bridges and tunnels, local landmarks, cemeteries, cultural landscapes, mines, schools, churches, parks, hospitals, and other public facilities. The study area was defined as encompassing a 2,000-foot (620-meter) wide corridor, comprised of 1,000 feet (310 meters) on either side of the centerline of the existing I-29/35.

Several sources were consulted for the archival search. The records of the Missouri State Historic Preservation Office in Jefferson City and the Landmarks Commission of Kansas City were reviewed for content on previously recorded, as well as NRHP eligible, archaeology and architecture within the I-29/35 study area. MoDOT's Cultural Resources section was contacted in order to access applicable bridge information. Historical documentation regarding the general history of North Kansas City, Kansas City, and the study area was gained from the Clay County Archives and Historical Library, Inc., the Clay County Courthouse, the North Kansas City Public Library and High School Media Center, the Kansas City Public Library in Kansas City, Missouri, the Missouri Historical Society Library in St. Louis, and the libraries at Washington University in St. Louis.

### *Archaeology*

The records and literature search revealed that only one historic archaeological site has been identified within the study corridor. Site 23JA422, the original Town of Kansas, was first identified in 1992 during an archival study and archaeological investigations performed by the University of Kansas (Adair and Hedden 1992). The Town of Kansas Site is situated within vacant lots in the Missouri River floodplain along Front Street and a first terrace along Commerce Street. These lots are crossed by three north-to-south trending streets including Grand Avenue, Main Street, and Delaware. The western boundary is along a railroad track. Wyandotte Street was supposed to have been placed at this location, but it was never constructed within the site area. Platted in 1846, the original Town of Kansas was within portions of Blocks 1, 2, 12, and 13. Excavations conducted by the university verified that intact building remains and associated artifacts dating to the 19<sup>th</sup> century still existed and could provide valuable information for understanding the original inhabitants of Kansas City (Adair and Hedden 1992:80). Since that time, a number of other archaeological projects have been performed within the Town of Kansas Site.

A Phase I cultural resource survey, designated JA-122, was conducted in 1993 for a proposed Hilton Grand Riverpark Project in two areas within Kansas City; the first, Area A, located under the Paseo Bridge and the second, Area B, located at the foot of Main Street (Sturdevant 1993). The survey included a literature and records review, pedestrian observation, inventory and evaluation of existing architecture, subsurface coring, and inventory of potential cultural resources below the water level by diving. Area A was found to have no specific historic associations and was determined by the investigator to have little, if any, potential to contain significant cultural resources. Area B was found to have some potential to contain cultural resources. Coring data and historic records indicated that early historic remains (pre-1850) were possibly located ten to 14 feet below the surface on a Bethany Falls limestone escarpment. Existing structures within the project area included the City Wharffhouse, Missouri Pacific Produce Terminal Administration Building, and the Grand Avenue Viaduct. Sturdevant (1993:84) reported that these structures did not meet National Register eligibility criteria and were recommended as not significant. Surface investigations and the diving component of the project were found by the investigator to have produced no evidence of potentially significant cultural resources in the project areas.

A Phase I cultural resource survey, JA-130, of two square blocks in Kansas City bordered by Locust, McGee, 8<sup>th</sup>, and 9<sup>th</sup> streets was conducted in 1994 (Sturdevant 1994). The project was the proposed location of a United States Courthouse. This survey found no potential for archaeological resources within the project area. The investigator stated that heavy modification of the terrain during the historic period, primarily leveling of the bluffs and ravines above the Missouri River, resulted in the destruction of any potentially present prehistoric resources (Sturdevant 1994:48). The project area was not included in the development of the early Town of Kansas and historic land use of the area did not begin in earnest until after the Civil War. From the 1880s to the 1930s, the project area underwent a cycle of building construction and demolition that modified major portions of the project area every few years. By the 1980s, almost all of the project area had become a set of parking facilities, with the exception of the Fredric Hotel and the Irving-Pitt Building. Sturdevant (1994:48) determined that, based on the construction and demolition activities identified as a result of the archival research, no potential existed for buried archaeological resources in the project area. No archaeological testing or surveys were performed in this investigation to verify this.

Survey JA-139 was the monitoring of an underground fiber optic telecommunications cable installed across the Town of Kansas site in 1995, producing 19<sup>th</sup> century building remains and deposits. This investigation confirmed that the site still contains intact 19<sup>th</sup> century archaeological features and deposits. Further testing and monitoring was recommended prior to any future construction work in this area (Naglich 1995:21).

An archaeological resource master plan (JA-157) prepared for Kansas City and Liberty, Missouri, by McNerney et al. (1993) determined that archaeological resources have been impacted by building construction. Similar to the Town of Kansas Site, however, McNerney et al. concluded that other undisturbed archaeological remains could still exist under the streets and buildings of downtown Kansas City and within the grounds of historic residences. A few years later they were proven correct, when graves associated with the St. Francis Regis Cemetery (1845-1880) were exposed during the construction of a new office building at the corner of Jefferson and 11<sup>th</sup> Street in Kansas City (Powell 2000). Similar buried cultural remains have been identified at other urban areas across Missouri such as St. Louis (Naglich and Harl 1995; Harl 1996; Harl et al. 2003) and Hannibal (Hamilton and Nixon 1992; Lopinot et al. 1985). Thus, there is a possibility of intact archaeological resources buried beneath the modern grade within the I-29/35 area of potential effect (APE).

In 1997, the City of Kansas City, Missouri made plans to establish an interpretive park and visitor center displaying the history and archaeology of the Town of Kansas Site, designated JA-176. A National Register of Historic Places Nomination Form on the site was completed as part of this project (McCarthy and Ward 1997).

An archaeological survey, JA-177, of a portion of the Town of Kansas Site (23JA422) was conducted in 1998 in an area previously occupied by African-Americans during the late 19<sup>th</sup> century. These investigations failed to identify any intact cultural remains associated with the African-American occupation, although Ward and McCarthy (1998) concluded that subsurface deposits could still be intact below fill deposits.

In 1999, the Archaeological Research Center of St. Louis, Inc. performed a records and literature search, as well as an architectural survey, for the Missouri River Corridor Project in preparation for proposed highway improvements and construction, JA-199 (Naglich et al. 1999). Following the architectural survey report, an archaeological survey (also JA-199) was performed for the same boundaries. According to the 2003 archaeology report, nine new archaeology sites were identified and eight previously recorded sites were revisited; none of the identified sites are within the I-29/35 APE or study area. Four of the new sites, 23JA568, 23JA569, 23JA572, and 23JA574, were recommended as eligible for the National Register of Historic Places (Naglich 2003).

### ***Architecture***

Architectural survey reports, National Register of Historic Places Inventory Nomination Forms, and Landmarks Commission of Kansas City survey forms were examined to identify all previously recorded architecture within the study area. As of December 2004, the APE contained portions of four individual properties listed on the NRHP and two historic districts listed on the National Register of Historic Places; all of these are located within Jackson County (Table III-13). These include the Old Town Historic District and the Wholesale District. The 14th Avenue Industrial District in North Kansas City is an urban district that has undergone an architectural survey; it is not a registered district (Table III-14). Two urban neighborhoods and one multiple property survey within the Jackson County APE have also been the subject of architectural surveys, although they are not registered districts: Columbus Park, the Central Business District, and the Historic Colonnade Apartments of Kansas City, Missouri Survey (Table III-15). There are no certified local districts within the I-29/35 APE or study area; there are also no NRHP properties or districts within the Clay County APE. Historic railway tunnels have also been the subject of investigations within the area. The tunnels were constructed underneath Kansas City in an east-west direction along the alignment of Eighth Street between 1887 and 1888 (Leonard 1995:2). Leonard of Alpha-Omega Geotech, Inc., found the tunnels to be in excellent condition in 1995. Detailed descriptions of individual NRHP properties and districts within the I-29/35 APE can be found below and located on Appendix C Plates.

### ***Kansas City Masonic Temple (JA101), National Register of Historic Places***

The Kansas City Masonic Temple, located at 903 Harrison Street, was constructed under the supervision of Masonic members between 1909 and 1911. It was designated a Local Historical Landmark by the City Council of Kansas City in 1979 and was registered as a NRHP property in 1980. The building, designed by J. C. Sunderland to be fireproof, is described as an example of integrated Beaux Art Classicism and Neo-Classical Revival styles (Ryder 1980).

### ***Kelley-Reppert Motor Company (JA126), National Register of Historic Places***

The Kelley-Reppert Motor Company, located at 416-426 Admiral, was designed by architects Keene and Simpson and constructed in 1920 by E.L. Winn Construction Company. This

building originally contained the Kelley-Reppert Motor Company, which was one of the oldest retail motor companies in Kansas City (Piland and Norris 1994). This property was placed on the National Register of Historic Places in August of 2004 under criteria A and C, for Commerce and Architecture. This building represents a building form designed to address the distinctive needs of an automobile dealership, which included a formal showroom and functional service and storage areas. Its substantial reinforced concrete structure illustrates the adaptation of this twentieth century construction technique for auto-related buildings (Rosin 2004). The Kelley-Reppert Company was also important in itself, as this company exclusively sold and serviced Ford Automobiles in Kansas City from 1920-1940 (Rosin 2004).

**Table III-13  
Previously Recorded NRHP Buildings and Districts  
within the I-29/35 APE**

Name	Location	Construction Date	Property Type
Kansas City Masonic Temple/JA101	903 Harrison (Plates A-06 & B-06)	1909-1911	NRHP Building
Kelley-Reppert Motor Company/JA126	416-429 Admiral (Plates A-07 & B-07)	1920	NRHP Building
Buick Automobile Co. Bldg. /JA134	216-220 Admiral (Plates A-07 & B-07)	1907	NRHP Building
Western Union Telegraph Building/JA140	100-114 E. 7 <sup>th</sup> (Plates A-07 & B-07)	1920	NRHP Building
Old Town Historic District	Old Town Historic District (Plates A-07, A-08, B-07 & B-08)	Mid 1800s-present	NRHP District
Wholesale District	Wholesale District (Plates A-08, A-09, B-08 & B-09)	1874-1931	NRHP District

**Table III-14  
Previously Recorded Unregistered Districts within the APE  
in Clay County, Missouri**

Name	Location	Construction Date	Property Type
14 <sup>th</sup> Avenue Historic Industrial District	14 <sup>th</sup> Avenue Historic Industrial District (Plate Build-03)	1915-1940	Previously Recommended as Eligible NRHP District

***The Buick Automobile Company (JA134), National Register of Historic Places***

The Buick Automobile Company, located at 216-220 Admiral, was placed on the National Register of Historic Places in 2003 under Criterion A, a 'property [that] is associated with events that have made a significant contribution to the broad patterns of our history' (Millstein and Warfield 2003). This building, constructed in 1908 by Frank S. Rea, was the first automotive company in Kansas City to build a dealership and warehouse specifically to show and store the Buick corporation's line of automobiles (Millstein and Warfield 2003). Although the building has had several additions and has been altered, it has maintained its significance by illustrating the transition from the late 19<sup>th</sup> to early 20<sup>th</sup> century Main Street auto merchant first generation store front, to the salon-type showroom that coincided with the explosion of the automobile industry nationwide (Millstein and Warfield 2003).

**Table III-15  
Previously Recorded Unregistered Districts and Multiple Property Survey  
within the I-29/35 APE  
in Jackson County, Missouri**

Name	Location	Construction Date	Property Type
Columbus Park (CP)	Columbus Park (CP) (Plates A-05, A-06, A-07, B-05, B-06 & B-07)	Late 19 <sup>th</sup> -Early 20 <sup>th</sup> Century	Previously Recommended as Eligible NRHP District
Central Business District (CBD)	Central Business District (CBD) (Plates A-07, A-08, B-07 & B-08)	Late 1800s-present	Previously Recommended as Eligible NRHP District
Historic Colonnade Apartment Survey	Kansas City, MO, area bounded by Missouri River Van Brunt, 63 <sup>rd</sup> Street and State Line Road	Late 19 <sup>th</sup> –Early 20 <sup>th</sup> Century	N/A

***Western Union Telegraph Building (JA140), National Register of Historic Places***

The Western Union Telegraph Building, located at 100-114 East 7<sup>th</sup> Street, is significant under Criterion A, for its local impact in the communications industry. According to Ambler and Schwenk, the building, designed for Western Union by Charles A. Smith, a principal in the firm of Smith, Rea, & Lovitt, to house a regional telegraph wire switching center, was adapted over the years to utilize new technologies (2002). These new technologies included a computerized switching network installed in the building in the 1940s and the introduction of the Telex system in 1960 (Ambler and Schwenk 2002). Western Union occupied this building from its construction in 1919 until the late 1970s-early 1980s.

***Old Town Historic District, National Register of Historic Places***

Located within the riverfront area, the Old Town District is the oldest part of Kansas City and encompasses all of the original plat of the city. The district is situated in the general vicinity of Grand and Missouri Avenues, and Wyandotte and Second Streets. The Landmarks Commission of Kansas City prepared historic inventory forms and photographs of individual buildings within the area in 1977. In 1978, the Old Town District was placed on the National Register of Historic Places under Criteria A and C (Piland 1977).

***The Wholesale District, National Register of Historic Places***

In 1977, the Kansas City Landmarks Commission prepared historic inventory forms for the Wholesale District, an area primarily commercial and industrial in character. In 1979, the district was placed on the National Register of Historic Places under Criteria A and C (PBNI 1990). The district is located along three major thoroughfares: Broadway, West 8<sup>th</sup>, and West 7<sup>th</sup> Streets, and consists of sixty-one architecturally and historically important buildings. These buildings were constructed during a period from 1874-1931. The Wholesale District began as a residential area in the 1850s, but blossomed as a commercial avenue in the 1870s and early 1880s. Following World War II, the area shifted from being a prominent center of wholesale houses to an important textile manufacturing center, still popularly known as the Garment District (Millstein 2001).

***14<sup>th</sup> Avenue Historic Industrial District & 1345 Iron Street, Recommended as Eligible for Listing on the National Register of Historic Places***

The 14<sup>th</sup> Avenue Historic Industrial District includes 12 industrial properties constructed between 1915 and 1928 along 14<sup>th</sup>, Knox, Iron, and Jasper Streets. It was concluded that these buildings retained much of their historic integrity and were recommended as eligible for the

National Register under Criterion A. Within the eligible district, one property was individually recommended as eligible to the NRHP under Criterion C, the Waggener Paint Company building at 1345 Iron Street. The building was described as the best existing example of an industrial building influenced by the Chicago School of Architecture in North Kansas City (Millstein 1996:15).

### ***Columbus Park Neighborhood***

In 1987 and in 1994, the Landmarks Commission of Kansas City, Missouri performed an intensive survey of approximately 170 acres of Kansas City known as the Columbus Park neighborhood. This area extends from Front Street south to Independence Avenue and from Locust Street east to the North Midtown Freeway. Columbus Park is a cohesive neighborhood located directly northeast of Kansas City's CBD, containing late 19<sup>th</sup> and early 20<sup>th</sup> century residences (predominantly multi-family), commercial buildings, community centers, and churches. Although recommended as eligible as a district for the National Register of Historic Places by the Landmarks Commission, the Columbus Park neighborhood was not accepted as a local or national historic district by the city of Kansas City or by the SHPO (Betz 1987).

### ***Central Business District***

Today, the urban center of Kansas City is located in the Central Business District, just to the south of the Old Town District and I-70. The Central Business District is bounded on the south by 14<sup>th</sup> Street, the north by I-70, the east by I-29/35, and the west by Jefferson. The architecture of the Central Business District was originally surveyed in the 1970s by the Historic Kansas City Foundation (PBNI 1990:1). Included in this project was the Wholesale District, listed on the National Register of Historic Places in 1979. Although recommended as eligible for the National Register of Historic Places, the Central Business District was not accepted as a local or national historic district at this time. The Landmarks Commission of Kansas City, Missouri re-surveyed the Central Business District in 1994 and inventory forms were prepared on each property for a Downtown Preservation Plan that was never enacted; these forms were never submitted to the SHPO.

### ***Historic Colonnade Apartments of Kansas City, Missouri Survey***

In 2003, Sally Schwenk of Historic Preservation Services, LLC prepared an NRHP Multiple Property Documentation Form of colonnade apartment buildings in Kansas City, Missouri. This survey, which included over 500 apartment buildings in an area bounded by the Missouri River on the north, 63<sup>rd</sup> Street on the south, State Line Road on the west, and Van Brunt Boulevard, Winner Road and Belmont Boulevard on the east, provides both a period of significance and four architectural sub-types of colonnade apartment buildings that have direct associations with the contexts and property types established in this submission in nominating these properties to the National Register of Historic Places (Schwenk 2003). The four determined sub-types of colonnade buildings are as follows: Classical Colossal Column Porch, Combined Column Porch, Square Brick Column Porch, and Transitional Colonnade Apartment Building. The determined period of significance of these buildings was c.1900-1930, although the historical context for apartment buildings in Kansas City began as early as the 1880s.

### ***Previously Recorded Bridges***

All of the previously recorded bridges within the study area are listed in the MoDOT Transportation Management System (TMS) database. A total of 41 bridges have been recorded within the study area; 34 of these are in the APE. The structural types of all the previously recorded bridges include 20 stringer, 12 box beam girder, three slab, two girder, one suspension, one frame, one thru arch and one pedestrian overpass. The three previously recorded bridges within the APE located in North Kansas City (Clay County) are stringer bridges

and are located within the APE (Table III-16). Also within the APE are one suspension bridge (Paseo) and one trussed through arch bridge (Broadway) which are located in Jackson and Clay Counties (Table III-17). Thirty-six of the bridges are in the Kansas City portion of the study corridor (Jackson County), 29 of these are in the APE. Jackson County has 13 stringer, one frame, 11 box beam of girder, two girder, one slab which has since been filled underneath with earth and is no longer in use as a bridge, and one no longer existing pedestrian overpass (Table III-18).

**Table III-16**  
**Previously Recorded Bridges in the I-29/35 APE in Clay County**

Bridge #	County	Structure Type	Year Built
L07914/CLB2	Clay	Stringer	1953
L07904/CLB3	Clay	Stringer	1953
L07894/CLB4	Clay	Stringer	1953

**Table III-17**  
**Previously Recorded Bridges in the I-29/35 APE**  
**in both Clay and Jackson Counties**

Bridge #	County	Structure Type	Year Built
L07345/PASEO (Plates A-02, B-02 & C-02)	Clay/Jackson	Suspension	1954
A-4649/JAB24 (Not shown on plates)	Clay/Jackson	Thru Arch	1955

**Table III-18**  
**Previously Recorded Bridges in the I-29/35 APE**  
**in Jackson County**

Bridge #	County	Structure Type	Year Built
L07884/JAB1	Jackson	Stringer	1953
A32762/JAB1A	Jackson	Stringer	1973
L07872/JAB2	Jackson	Stringer	1953
L-786/JAB3	Jackson	Frame	1953
L-785P.O.	Jackson	Pedestrian overpass	1969
L-934-3R	Jackson	Box beam of girder	1958
L07823/JAB4	Jackson	Girder	1953
L-9341R/JAB5	Jackson	Box beam of girder	1958
L-9342R/JAB6	Jackson	Box beam of girder	1958
L-935R/JAB7	Jackson	Box beam of girder	1958
L-936R/JAB8	Jackson	Box beam of girder	1959
L-937/JAB9	Jackson	Box beam of girder	1959
L-938/JAB10	Jackson	Box beam of girder	1958
L09391/JAB11	Jackson	Box beam of girder	1959
L-781R2/JAB12	Jackson	Stringer	1953
A4114/JAB13	Jackson	Stringer	1985
A-4058/JAB14	Jackson	Stringer	1985
A44571/A-4112/JAB15	Jackson	Stringer	1985
A4115/JA16	Jackson	Stringer	1985
A4113/JAB17	Jackson	Slab	985
A4224/JA18	Jackson	Girder	1990
L-494R1/JAB19	Jackson	Stringer	1954

**Table III-18 (continued)  
Previously Recorded Bridges in the I-29/35 APE  
in Jackson County**

Bridge #	County	Structure Type	Year Built
A4223/JAB20	Jackson	Stringer	1985
L-492R1/JAB21	Jackson	Stringer	1954
L-490R2/JAB23	Jackson	Box beam of girder	1954
A1131R/JAB28	Jackson	Box beam of girder	1970
A1130R/JAB29	Jackson	Box beam of girder	1970
L-489R1/JAB30	Jackson	Stringer	1953
L-489R/JAB31	Jackson	Stringer	1953

### c. Architectural Survey

The architectural survey provided a glimpse into the area's growth and holds value primarily as a documentary record of the highway corridor's development. The architecture along the I-29/35 corridor reflects the sequence of residential and commercial construction which emanated from Old Town Kansas City. Expansion north of the Missouri River was encouraged following the construction of bridges and the creation of the North Kansas City Development Company. Expansion in Kansas City and North Kansas City also proliferated due to railroads and streetcar systems, which allowed residents to move further from the city's center.

Housing purchases were somewhat limited during the time period from the Great Depression to World War II, but increased dramatically in the years immediately following the war. One such neighborhood was the North Kansas City Development Company's 1<sup>st</sup> Addition, which was platted at the turn of the century, but did not undergo significant development until after World War II. Numerous neighborhoods in Clay and Jackson Counties had housing covenants that prevented African Americans from owning homes within their boundaries. The Supreme Court ruled in 1948 that such laws were unconstitutional, but the last covenant was recorded in Jackson County in 1954 and in Clay County in 1960. Further improvements to the transportation systems, the freedom fostered by the automobile, and cheaper residential construction methods made homes outside of the urban center more affordable to the common citizen. Although highway construction destroyed homes, businesses, and portions of one known cemetery, it furthered the development and resurgence of downtown Kansas City and better connected it with North Kansas City.

### **Survey Methodology**

Most of the APE associated with the proposed improvements to I-29/35 is limited to areas that have been previously impacted by the construction of the interstate. Proposed improvements do include a slight expansion in some locations along the interstate, with larger areas needed for interchanges. For this reason, properties evaluated in the architectural survey included those entirely within the proposed APE, those at least partially within the APE (even if the building[s] on the property were not threatened), those contiguous to the APE, and those that will come into direct view of the highway due to the proposed removal of intervening buildings. Prior to the architectural fieldwork, all properties were assigned a number from north to south in North Kansas City and east to west in Kansas City, which was used for identification on forms, maps, tables, and photographs. In addition to a property number, they were assigned either the designation *CL* (Clay County) or *JA* (Jackson County). The letters *M*, *V*, *L*, and *B* were also used to identify modern (*M*), vacant (*V*), landscape (*L*) and bridge (*B*). Modern is used to designate structures/buildings dating after 1945, including parking lots; vacant to designate empty parcels with no buildings/structures or objects present; and landscape to designate parcels which contain a levee, park, or objects.

The architectural survey was conducted from May through August 2004. All properties in the APE with at least one building constructed before 1945 were photographed and recorded on a Missouri Office of Historic Preservation, Architectural/Historic Inventory Form. At least two photos were taken of buildings/structures constructed prior to 1945, and at least one photo was taken of buildings/structures dating between 1945 and 1970. Buildings/structures dating after 1970 were photographed only if they represented high style or had unique architecture. Sketch maps were drawn for complexes which had three or more buildings that date prior to 1945. All bridges dating prior to 1961 were photographed and recorded on a *Bridge Inventory Survey Form* provided by the State Historic Preservation Office. Residential architectural styles were categorized using *A Field Guide to American Houses* by Virginia and Lee McAlester, *What Style Is It? A Guide to American Architecture* by John C. Poppeliers, S. Allen Chambers, Jr., and Nancy B. Schwartz; *Identifying American Architecture: A Pictorial Guide to Styles and Terms, 1600-1945* by John J.-G. Blumenson, *The Visual Dictionary of American Domestic Architecture* by Rachel Carley, *Ozark Vernacular Houses* by Jean Sizemore, *A Field Guide to American Architecture* by Carole Rifkind, and *American Architecture Since 1780* by Marcus Whiffen. Architectural styles for commercial buildings were categorized according to *The Buildings of Main Street* by Richard Longstreth.

Information on specific pre-1945 neighborhoods and properties was obtained from several sources. The Landmarks Commission of Kansas City was contacted for information on previously recorded architecture within the study area. Neighborhood information was acquired from the Kansas City Public Library. Other specific property information was obtained from the Clay County Historical Society, Clay County Courthouse, and the Jackson County, Missouri website ([www.jacksongov.org](http://www.jacksongov.org)). Most of the construction dates for the properties within the APE were assessed using Sanborn maps and City Directories found at the Kansas City Public Library in Kansas City, Missouri. Plat maps of individual subdivisions were obtained from the Jackson County, Missouri website ([www.records.co.jackson.mo.us](http://www.records.co.jackson.mo.us)) and from the Clay County Courthouse in Liberty, Missouri. The MoDOT *Transportation Management System (TMS) Database* was consulted for information on bridges.

### **Eligibility Criteria**

The significance of cultural resources was determined based on NRHP criteria. National Register Bulletin 15 (1995) lists criteria that originally appeared in the *Code of Federal Regulations, Title 36, Part 61* for evaluation of historically significant properties.

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

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

The cultural resource survey of the I-29/35 APE resulted in the identification of 200 previously unidentified properties, 78 previously recorded properties, 5 previously unidentified bridges, and 32 previously recorded bridges. Not included in the above numbers were 12 previously recorded properties that have been demolished, one previously recorded pedestrian overpass that has been removed (L-785P.O.), and one previously recorded bridge that has since been

filled underneath with earth and is no longer a bridge (L-934 3R). All previously recorded resources that currently stand were revisited during the architectural survey. The potential significance of each cultural resource was assessed as part of these investigations.

### **Individually Eligible Architectural Resources**

Of the 278 architectural resources recorded during the course of the survey, eight are eligible for listing on the National Register of Historic Places. None of these architectural resources are within a currently defined Landmarks or NRHP district. The resources are listed in Table III-19 in order from north to south/east to west. The table indicates the location, types of resource, date constructed, architectural style, and the eligibility criteria of the property. Unless stated otherwise, the period of significance for each property is its respective construction date, and the boundaries are the lot boundaries for each individual property. Although Kessler Park is listed below as a NRHP eligible property in the I-29/35 APE, it should be noted that only a portion of the park is considered eligible. The area of the park that is NRHP eligible is not within the I-29/35 APE.

**Table III-19**  
**NRHP Properties in the I-29/35 APE**

No.	Address	Type	Construction Date	Style	Criterion
JA4	1426 Guinotte (Plates A-03, B-03 & C-03)	Commercial	c. 1900s	Commercial	C
LJA9	Cliff Drive (Plates A-03, A-04, A-05, B-03, B-04 B-05, C-03, C-04 & C-05)	Landscape	1895-1939	City Beautiful Movement Works Progress Admin.	A & C
JA73	569-571 Campbell (Plates A-06 & B-06)	Residential	1883-1884	Italianate	C
JA86	520-526 Holmes (Plates A-07 & B-07)	Apartment	1913	Colonnade Apartment/ Square Brick Column Porch	C
JA89	611-613 Forest (Plates A-05, A-06, B-05 & B-06)	Apartment	1890s	Italianate	C
JA98A	1015 E. 8 <sup>th</sup> St. (Plates A-06 & B-06)	Commercial	1908	Two-Part Commercial	C
JA107A	703 E. 10 <sup>th</sup> St. (Plates A-06 & B-06)	Apartment	1925-1930	Mission	C
JA157	340 W. 5 <sup>th</sup> St. (Plates A-08 & B-08)	Commercial	c. 1920	Two-Part Commercial	C

*Property JA4*, located at 1426 Guinotte, contains Mid-America Storage, a commercial building constructed c.1900. Recommended under Criterion C, for architecture, the building has brick pilasters located between each bay on the north, south, and west walls. Between each floor and pilaster are circular, non-decorative iron anchors. The flat roof has tile coping and the cornice is emphasized with tooth-like dentils surrounded by rows of stretchers. Under the cornice and between each bay are seven rowlock arches with corbelled brickwork. A brick elevator shaft is located on the roof and a fire escape is positioned on the south wall. The property has arched windows with limestone sills and three rows of arched rowlock lintels. Above the north wall door is a two light sliding window and next to it is a 2/2 sliding window.

The east wall has 3/3 hung sash windows and is the only wall with unaltered windows. Alterations to the building include north, south, and west wall windows covered with sheet metal and the basement windows covered with concrete slabs. A ramp on the west wall leads to a door and two truck loaders that have doors post dating the building. Two additions are attached to the east wall and are contemporary with and have a majority of the same decorative detailing as the original. The southernmost addition is one and a half stories with a side gabled asphalt roof. The variation in decorative detailing from the original includes a concrete cap on the pilasters and the iron anchors are two in number between each pilaster. The east wall of the addition has a door and a loader on the first floor and the half floor, and a parapet extending around an elevator shaft resting on the roof. As seen on the 1909 Sanborn map, the elevator shaft was associated with additions that extended from the east wall of the current addition, but are no longer present. The elevator shaft has a flat asphalt roof with a 3/2 sliding window. Also shown on the 1909 Sanborn map are seven wire skylights that have probably been infilled or covered.

The two story addition, located on the northernmost portion of the original building's east wall, has a flat roof covered with asphalt, a single truck loader, 3/3 hung sash windows, and a portion painted white. According to the 1909 Sanborn map, the northernmost addition once had a hipped roof and more additions extending to the east that are no longer present. The last addition, located on the north wall, is set on a limestone foundation with four light basement windows, vinyl siding, 1/1 hung sash windows, and an asphalt shingled shed roof. The building does not appear to be contemporary with the foundation due to two factors: the foundation covers a larger space than the building and poured concrete has been used to mend the size differences.

*Property LJA9, Kessler Park.* The park is a long strip of land running east/west along the scenic route of Cliff Drive. North Terrace Park, the oldest component of Kessler Park, was established in 1895 and began as 5.5 acres on Prospect Point. From its establishment into the 1960s, the park grew south, east and west until it reached its current size of 302.87 acres. There were historical milestones of acquisition, which include growth in 1899, 1901, three additions in 1912, and the recent expansion in 1966. Kessler Park is recommended eligible for NRHP as Designed Landscape according to the NRHP Designed Historic Landscape Bulletin under Criterion C for Architecture and Criterion A for the park's historic relationship to the City Beautiful Movement and the Works Progress Administration. The historic landscape is a park. Architecture of the park was designed and planned by George Kessler (1862-1923) and the Kansas City Parks Department with the implementation of the plans completed by the Parks Department and the Works Progress Administration. The period of significance, 1895-1939 was the period when the land for the park was first acquired and the construction plans were completed. There are fourteen noted contributing resources that pre-date 1939: 1) Pillar Entrance to Kessler Park, 2) Cliff Drive, 3) Reservoir and Iron Fence, 4) North Terrace Lake, 5) Concourse, 6) Tennis Courts, 7) Sailing and Casting Pool, 8) Thomas Hart Benton Memorial, 9) Colonnade, 10) Retaining Walls along Cliff Drive, 11) Limestone Spring and Waterfalls, 12) Limestone Stairs, 13) Indian Mounds, 14) Lafayette Traber Garden. Non-contributing resources include modern structures and recreational equipment added to the park after 1939 such as the John F. Kennedy Memorial built in 1965, other markers and memorials including the Scarritt Point Memorial erected in 1975 and replaced in 1987, pedestrian bridges, modern playground equipment, tennis courts, basketball courts, Frisbee golf courses, and modern street lights.

In 1973, North Terrace Park was changed to Kessler Park after George Edward Kessler, a well-known landscape architect who is credited for designing Kansas City, Missouri's park and boulevard system, including Kessler Park. North Terrace Park was established in 1895 and began as 5.5 acres on Prospect Point. From its establishment into the 1960s, the Park grew

south, east, and west until it reached its current size of 302.87 acres (Lee et al 1995). The I-29/35 APE clips the western section of Kessler Park, of which is non-contributing to its NRHP recommendation of eligibility. Within this section is a partially destroyed limestone wall and two grass covered lots west of Cliff Drive. According to a 1909 Sanborn Map with 1951 paste-overs, this portion of Cliff Drive was part of Paseo Boulevard prior to the mid 1950s construction of the Paseo Boulevard extension and bridge.

The original western portion of the park ended at Highland Avenue, located east of the current boundaries, and, in 1966, the portion of the park located within the I-29 APE was acquired. The following is a rough chronology of events and construction within Kessler Park, based on Janice Lee et al's chapter in *A Legacy of Design* (1995). The oldest area of the park is the Concourse, constructed in 1896 for the purpose of sitting and relaxing in a peaceful, natural environment. In 1899, the park board acquired almost 200 acres from Gladstone Boulevard to Monroe Avenue. In 1901, the land located between Monroe and Elmwood Avenue was acquired, and in 1903 one block of Wabash Avenue was acquired. By 1905, Cliff Drive, one of the park's first constructed features, totaled 3.5 miles and was extended multiple times through the years. Cliff Drive currently stretches across 6.5 miles, but the western tip of Cliff Drive, its most recently constructed section, is all that is within the I-29/35 APE. Construction began on the Colonnade in 1906 and was completed by November of 1908. J.B. Neevel & Son won the contract to build the Colonnade at a cost of \$26,744; not included in that cost is the construction of the outer retaining wall and steps, as they were constructed by the park labor force. Both John Van Brunt and Henry Wright are credited for the design of the Colonnade and it was constructed to provide "naturalistic" scenery to the park. North Terrace Lake was established by 1907. Maple Boulevard to Missouri Avenue was designated as park land in 1909, but the plot is now a separate park called Maple Park. In 1912, two blocks were acquired at St. John to Wabash Avenue and Elmwood Avenue to Belmont Boulevard (Figure 1). Also in 1912, the Thomas Hart Benton Memorial was dedicated for Missouri's U.S. senator and Ella A. Traber donated Lafayette Traber Garden. From 1915 to 1921, the Board of Fire and Water Commissioners built a reservoir, but it had been abandoned by 1930. In 1931, Cliff Drive was extended to Indian Mound. The Indian Mound was restored in 1937 as part of the \$220,000 Works Progress Administration project, which involved adding soil to the mound to increase its height and reestablish its shape. In 1939, a sailing and casting pool was added within the Concourse. North Terrace Lake was established within park land by 1907, but later restoration occurred at two different times, 1941 and 1989. The John F. Kennedy Memorial was constructed in 1965 on the Concourse in place of a fountain (Lee et al 1995). In 1966, the western park boundary was extended across the bluff overlooking the Paseo extension (Board of Park Commissioners 1965-1973). In 1974, the William R. Royster Memorial was dedicated on the Concourse, in memory of a northeast political leader, and in 1987 the Scarritt Point Memorial was replaced (Lee et al 1995). The Carl J. DiCapo Fountain was dedicated in 1989 ([www.kansascity.about.com](http://www.kansascity.about.com)).

The park is bordered on the east by Chouteau Trafficway and Belmont Boulevard, on the north by the Missouri Pacific Railroad, on the south by primarily residential areas, and the western border is adjacent of the Paseo extension. The significant and contributing elements of Kessler Park, which includes the 1895 park boundaries, the park boundary additions from 1899 to 1912, and historic structures and landforms dating up to 1939, are located outside of the APE will not be affected by I-29/35 improvements. These reflect the parks period of significance, which dates from 1895 when the park was first established to 1939 when the last historic structure was installed. The APE only crosses the non-contributing portion of the park that was acquired in 1966.

*Property JA73*, located at 569-571 Campbell, is recommended as eligible under Criterion C. This residence, constructed in 1883-1884 in the Italianate Style, has two interior brick chimneys on its north and south walls. The roof has wide overhanging eaves that are boxed with brackets, and the two gabled projections on the facade have return eaves. Decorations on the molded entablature include a modillion course, paneled fascia boards, and single and paired incised scroll-sawn brackets. A stone course is located between the first and second floor across the facade. The residence experienced major renovations in 2003, which included sandblasting and tuck pointing the exterior walls, repainting the cornice, repairing the roof, replacing the exterior stairways, and installing new doors (Horsley 2003). Since its renovations, the first floor is the former basement, the second floor is the former main entrance, the third floor is the former second floor, and the attic is still the attic. The doors on the facade include two rectangular paneled doors entering the first floor and two sets of ten glass pane double doors with transoms and segmental soldier arches entering the second floor. The foundation is reinforced with concrete. Fenestration includes 1/1 hung sash replacement windows with a variety of exterior decorations; all surrounded by wood. The gabled projections have infilled doors and windows, and two ten-pane fixed windows with segmental soldier arches and centered stone keystones. On the gabled projection's facade, fourteen windows have stone sills and decorative molding under the lintel, of these ten have segmental soldier arches with centered stone keystones and four have complete rowlock arched lintels. Located on the recessed facade is two rectangular windows with stone sills; the mansard roof has two gabled dormers. The north, south, and east walls have 1/1 hung sash and infilled windows with double rowlock arches and stone sills. Some of these windows have decorative molding under the lintels, while others have brick filling that space. The front and rear balustrades and staircases are wood constructed, with one balcony covered by a shed roof. A two story addition extends from the east wall of the house and has the same wall construction and windows as the original portion. The addition also has undergone a majority of the same alterations as the original. The addition appears on the 1896 Sanborn map, so it can be assumed that it is contemporary with the original.

*Property JA86*, located at 520-526 Holmes, is recommended as eligible under Criterion C. Constructed in 1913, this building is a square brick column porch type as described in the Historic Colonnade Apartments of Kansas City, Missouri Multiple Property Survey. According to Schwenk, buildings of this sub-type have "...square brick columns that support multi-tiered porches. These columns either support a 'stacked' porch with separate sets of columns supporting each porch roof or they form a continuous brick column that extends the height of the majority of the facade and incorporates tiered porches" (2003). The colonnaded porch on this building extends to all three floors. The outer square columns, covered with a brick veneer, lead up to carved wooden posts on the third floor. Circular columns with dentil moldings at their respective capitals also lead up to carved wooden posts on the third floor. The wooden porch balustrades have intricate diamond and arched patterns. The porch roof, covered with asphalt shingles, is a shed roof with two front facing gables. The gables are infilled with wood and stucco. The roof of the main building is flat with corner parapets. The centered main entry on the first floor of the building has sidelights which are original, although the main door appears to be modern. The entries on the second and third floors appear to have the original 15 pane doors with sidelights. The facade windows, which flank the respective entries, are original 12/1 hung sash with limestone sills.

The north and south walls of the building are similar to each other, with a single, paired, and single row of 1/1 hung sash modern replacement windows with limestone sills on all three floors. The windows on the north wall, however, have brick rowlock segmental arches. The rear of the building has a modern wooden porch that extends to all three floors. This porch has a flat roof sided with wooden shingles, wooden posts, wooden balustrade, and wooden stairs. The

windows on the rear of the building are 1/1 hung sash modern replacement with brick rowlock segmental arches. All the rear doors have transoms, and all the basement windows have hopper windows.

*Property JA89*, located at 611-613 Forest Avenue, is recommended as eligible under Criterion C. Constructed in the 1890s, this Italianate residence has a hipped roof covered with asphalt shingles. The roof has wide eave overhangs, under which are decorative wooden cornice brackets and wooden dentil molding, reminiscent of Italianate styles. Directly underneath the cornice is a row of decorative brickwork. The facade has two, three-story projecting bays in which there are 1/1 hung sash windows (original), and 2/2 hung sash replacement windows; all windows have floral keystone lintels. The original 1/1 hung sash windows have concrete sills, whereas the modern 2/2 hung sash windows have brick sills, as the original window openings were modified to fit the new windows. There is also a concrete course that runs between the first and second floors. The entries on the first floor facade are unadorned; the entries on the second floor have transoms and floral keystone lintels that match those above the windows. The third floor entries do not have transoms, but they do have the floral keystone lintels. A modern wooden porch spans all three floors. There is also a centralized front gabled dormer that has paired fixed windows.

The north and south walls of the building have 1/1 hung sash (original) and 2/2 hung sash replacement windows. As with the facade, the 1/1 hung sash windows have concrete sills and the 2/2 hung sash windows have brick sills. All the windows have double rowlock segmental arches. The rear of the building has two gabled dormers with 1/1 hung sash windows and a chimney at the roofline. There are also two wooden porches and staircases on the first and second floors. A metal staircase and ramp lead up to the southernmost exit on the first floor. There are original 2/2 hung sash windows and some 2/2 hung sash replacement windows on the rear wall. The door openings contain replacement doors and the transoms are infilled with wood. Although alterations have occurred on the building, mostly involving the exterior window openings, no significant additions have been made to the building and it retains much of its original decoration.

*Property JA98A*, located at 1015 E. 8th Street, contains ABC Storage and Van Company, a Two-Part Commercial Block building constructed in 1908. Recommended as eligible under Criterion C, this four floor building is visually separated into distinct zones between the first and second floor by a tile cornice that runs the length of the façade. The side walls and rear are separated by a stretcher course of bricks. The main entry on the facade is inset, flanked by two engaged brick columns with Doric capitals with diamond accents. ABC Storage & Van Co. is written in tile above the entry. Large picture windows with wooden surrounds also flank the entry. The windows exterior to the picture windows, infilled with wooden shutters, have decorative brick molded surrounds with concrete sills. The other windows on the first floor facade, also infilled with wooden shutters, only have concrete sills. A concrete course runs just underneath the windows on the facade, but it does not continue onto the other walls of the building. The two exterior bays on the upper floors of the facade are separated by geometric patterned brickwork, while the center bay windows have a raised, brick surround. The windows, which appear to be original to the building, are all 2/2 hung sash with concrete sills. The arched parapet roof is infilled with cross-hatched brickwork and is lined with tile coping.

The west wall of the building has a mixture of openings, including small, infilled square openings that originally held vents, two pane casement windows, 2/2 hung sash windows, and loading docks. The small square openings have brick rowlock sills, while the rest of the windows have concrete sills. The windows in the bay nearest to the facade and those in the central bay on the west wall are surrounded by raised geometric brickwork; the cross hatching found on the front parapet is also above both of these bays. Castellated brickwork is also located just under the

roofline on the west wall. There is a roof projection just above the center bay that contains an elevator which provides access to the roof. The loading dock below these windows appears to be original, but it has been recently modified. The other loading dock on the west wall has had modern alterations, as the brick lintel is constructed out of modern brick and the loading dock opening is covered with sheet metal. The east wall is less ornate than the west, although it does have the castellated brickwork near the roofline. The only openings on this wall are the small square vent openings and 2/2 hung sash windows; the sills match those found on the west wall. The rear of the building has three openings infilled with wood siding that were used as loading dock areas. There are modern, fixed windows in these openings. The rest of the rear wall is unadorned, except for the checkered pattern created by concrete courses that intersect on this wall.

*Property JA107A*, located at 703 East 10th Street, contains the Wiltshire Apartments, constructed between 1925 and 1930. Recommended as eligible under Criterion C, this three story brick building has a flat roof with Mission style parapets on the north and west walls. The parapets, capped with urns and tile work, have decorative tile shields. The roofline of the building is capped with castellated tile, also indicative of the Mission style; the tile contains alternating face and fleur delis patterns. The corners of the building are capped with decorative domed pinnacles, inset with oriels. Tile quoins are located underneath the domed pinnacles. The windows are single or paired 1/1 hung sash replacement windows with brick rowlock sills. The main inset entry has been altered with a modern door and windows, and the entries on the west wall have been infilled with wood paneling and modern replacement doors. The south wall, which has an exterior brick chimney, only has tile coping at the roofline.

*Property JA157*, located at 340 West 5th Street, contains Colonial Patterns. This Two-Part Commercial Block building, constructed circa 1920, has large storefront windows on the first floor facade. A limestone lintel course runs above the first floor windows, and a limestone water table with dentil ornamentation is between the first and second stories. These two details divide the building into two distinct zones (Longstreth 2000). The windows on the second and third floors have limestone sills and brick soldier course lintels. On the facade, the windows are either paired or quadrupled, with engaged columns separating the quadruple sets of windows. The windows are paired on the east side and singular on the west side. There is also a large garage door opening on the west side. Below the roofline is a decorative cornice with tooth-like dentil ornamentation and modillions. The original windows on the first-story facade have been replaced with plate glass windows surrounded by aluminum paneling. Fenestration on the rest of the building consists of 1/1 double-hung sash replacement windows. The two original entryways on the facade have been replaced and topped with aluminum paneling as well. Although there have been alterations to the building, they are limited to replacement windows and doors. These alterations are minor and the building retains its integrity.

Attached to the rear or north side of the building is a two-story brick addition built on a concrete foundation (at 407 Broadway). All openings on this addition have limestone sills and are now covered with sheet metal. The west side of this addition has a limestone stringcourse between the second story and the parapet roof. On the east side of this addition all windows are covered with sheet metal, except for two narrow loading docks with garage doors. This addition has flat roof with a stepped parapet roof capped with limestone on the west side. A second addition (at 405 Broadway) is attached to the first addition on the north side. This addition is a T-shaped concrete block building resting on an older limestone foundation. The windows of this addition are multi-paned, but have been partially covered with wooden boards. Two loading docks are located on the east side, one with a concrete ramp and a low shed roof over the dock. On the west side, the facade of this addition has an entryway with concrete steps and a flat roof with a parapet. The roof of the main portion of this addition is side-gabled and covered with asphalt shingles.

### Eligible Districts

Within the I-29/35 APE, one district was identified as potentially eligible for the National Register of Historic Places. This district and its contributing buildings can be found in Table III-20, along with a more detailed description of the district.

*Properties JA129-JA131* are located in the potentially eligible Admiral Boulevard Commercial District, whose boundaries are Admiral Boulevard on the south, East 6th Street on the north, Superior Street on the west, and Page Street on the east. The boundaries include this entire city block except for Property JA128, whose architectural integrity is no longer intact. This district is recommended as eligible under Criterion C, for architecture, as the buildings represent a commercial style of construction that was prevalent in Kansas City in the 1900s and 1910s. None of the buildings have undergone major alterations, and the district represents an evolution of commerce within Kansas City, as the buildings located on this block were built ten to 20 years after the buildings of the nearby NRHP Wholesale District were constructed.

**Table III-20**  
**NRHP Recommended District within the I-29/35 APE**

No.	Address	Type	District Name	Date	Style	Criterion
JA129	404-406 Admiral (Plates A-07 & B-07)	Commercial	Admiral Boulevard Commercial District	1917	Two-Part Commercial Block	C
JA130	400 Admiral (Plates A-07 & B-07)	Commercial	Admiral Boulevard Commercial District	1913	Commercial	C
JA131	411-417 E. 6th St. (Plates A-07 & B-07)	Commercial	Admiral Boulevard Commercial District	c.1910	Two-Part Commercial Block	C

### Eligible Bridges

Thirty-seven bridges were examined and assessed for historical significance. Within the APE, 34 bridges were previously recorded and are listed in the MoDOT Transportation Management System (TMS) database. Of these, 31 were revisited during the architecture survey and found to be present. Of the remaining three previously recorded bridges, one pedestrian overpass was removed in 2000, one has since been filled underneath with earth and is no longer in use as a bridge, and one, the Paseo (L734R1), was surveyed by MoDOT. Twenty-seven bridges within the APE were constructed prior to 1961; five are previously unidentified. Of the bridges located in the I-29/35 APE, two bridges are eligible for listing on the National Register of Historic Places, and the Paseo Bridge was previously determined NRHP eligible as per the SHPO's concurrence with MoDOT's recommendation on March 29, 2004. The three structures are considered NRHP eligible under Criterion C in the area of engineering. These bridges can be found on Table III-21.

Bridge *L734R1*, the Paseo Bridge, is a self-anchored suspension bridge designed by Howard, Needles, Tammen, and Bergendoff. It was built by several local construction firms between 1952-54 and opened August 13, 1954. In 1796, James Finley was the first to construct a modern suspension bridge with cables strung on high towers and a level suspended roadway (Gordon 1978). The primary load bearing structure on a suspension bridge is the large catenary cable that is strung between two or more towers and usually anchored beneath the ground at

each end. Smaller suspender cables extend from the main cable to provide support for the roadbed (<http://www.worldhistory.com/wiki/c/cable-stayed-bridge.htm>). The Paseo, a three span suspension bridge, has four steel plate girder approach spans and is 1,832 feet (558.4 meters) in length (MoDOT 2004). Two steel towers anchored in concrete piers carry the main cable, which is anchored through the approach spans on the north and south ends. Each cable band consists of four twisted galvanized steel rope suspender cables connected to a stiffening truss. These suspender cables support the floor beams, stringers, and floor of the bridge roadbed (<http://www.inventionfactory.com/history/RHAbri dg/sbtd/>). When the bridge opened in 1954, a toll of 15-35 cents was collected to finance the construction bonds. During the late 1960s, I-29/35 was constructed and the bridge was incorporated into the interstate system. The convenience of the highway system added another link between Clay and Jackson Counties and promoted growth of the area. In 1972, the construction bonds were retired and the bridge tolls were discontinued. The next year the roadbed was resurfaced. Replacement of the expansion joints was completed in 1984 and the guardrails were finished in 1997. Extensive emergency repair work was completed in 2003. The number of vehicles crossing the Missouri River daily is approximately 94,000 (MoDOT 2004). On March 29, 2004, the SHPO concurred with MoDOT that the Paseo Bridge is eligible for listing in the National Register of Historic Places under Criterion C in the area of engineering.

**Table III-21  
NRHP Recommended Bridges within Jackson and Clay Counties**

Bridge #	Location	Current Name	Date	Style	Criterion
L734R1	Paseo Blvd, Over MO River (Plates A-05, 06 & 07)	The Paseo	1952-1954	Self-Anchored Suspension Bridge	C
JAB27	South of Broadway Bridge (not shown on Plates)	Pencoyd Bridge	1892	Pin-Connected Pratt Through Truss	C
JAB24/ A4649	Broadway, over MO River (not shown on Plates)	Broadway Bridge	1955	Truss Through Arch	C

Bridge *JAB27*, a pin-connected Pratt through truss railroad bridge, was constructed in 1892 by the Pencoyd Bridge Construction Company of Pencoyd, Pennsylvania. The company also constructed the Queensboro Bridge connecting Queens to Manhattan, New York. Three five-panel Pratt through trusses carry railroad tracks along the bridge. This common truss type has diagonal web members in tension, vertical web members in compression, and can be recognized by diagonal members forming a 'V' shape toward the center of the truss (Cridlebaugh 1999). Each truss has steel I-beam stringers resting on I-beams floor beams, which are connected to the bottom chords. Lateral bracing provides added stability. The bottom and top chords are connected by inclined end posts, vertical posts, counter bracing ties, and top lateral and lattice bracing. All vertical and diagonal web members are connected at the panel points by steel pins. The 1895 and 1906 Sanborn Maps reveal that *JAB27* has been limited to three spans. Each five-panel span is supported by one concrete and three limestone piers, and the entire bridge supports a wooden railroad deck. This railroad bridge was constructed as a viaduct for the Union Terminal Railroad, crossing over Broadway Boulevard, the Hannibal & St. Joseph Railroad, and the Chicago & Alton Railroad (Sanborn Perris Map Company 1895). This railroad bridge is no longer in use, and the west end is not connected to tracks. Although *JAB27* is closed, it has retained its integrity and is recommended eligible for inclusion on the NRHP under Criterion C, in the area of engineering. The Pencoyd Bridge is located under the two approach ramps to the Broadway Bridge and is within the APE.

Bridge *JAB24/A4649* is a three-span steel, double tied arch with thirteen steel stringer approach spans designed by the engineering firm of Howard, Needles, Tammen, and Bergendoff. Constructed in 1955, the bridge opened to traffic on September 5, 1956, and has since served to connect the Municipal Air Terminal and areas in Clay and Platte County with downtown Kansas City (Kansas City Star 1956). It has a truss that traffic travels through, and the bridge's weight load is passed to bearings at its abutments (Cridlebaugh 1999). Only portions of the two approach ramps on the south side of the truss through arch bridge are in the APE. The superstructure is supported on concrete piers and abutments.

### ***Non-eligible Resources***

Properties not eligible for the NRHP include a host of ubiquitous buildings constructed with common methods. According to National Register guidelines, a building "is eligible as a specimen of its type of period of construction if it is an important example (within its context) of building practices of a particular time in history" (National Register Bulletin 1995). Recorded buildings, districts, and structures not in the above recommended list fail eligibility requirements when held to this standard. Many recorded buildings were removed from consideration because they lacked integrity, having been subject to renovations that substantially altered their original massing, fenestration, or identifying features. Again, according to the National Register guidelines, "the property is not eligible, if it has lost the majority of characteristics that once characterized its style" (National Register Bulletin 1995).

### ***Areas of Archaeological Interest***

Past removal of the bluff tops, construction of homes and industry, and movement by the Missouri River appear to have destroyed any potential for prehistoric archaeological remains within the proposed I-29/35 construction corridor. It should be cautioned, however, that these remains may exist at other locations just outside this corridor. There is also a slight possibility that some of these remains may be buried beneath the construction rubble in areas where the bluff was not cut as extensively. If remains are exposed during construction, then the Cultural Resource section of the Missouri Department of Transportation or the State Historic Preservation Office should be contacted immediately.

The investigations did reveal that there is a chance for intact archaeological remains within the I-29/35 corridor dating from the mid 19<sup>th</sup> and early 20<sup>th</sup> centuries. Properties identified during the cultural resource study that could have intact remains are listed in Table III-22.

If any of these areas of archaeological interest are to be directly impacted by the proposed I-29/35 construction, they will be investigated to verify the potential of intact remains beneath the modern landscape and better evaluate the significance of these remains. One method of performing these investigations is to use a backhoe to dig exploratory trenches at the threatened sites. If the cemetery is to be directly impacted, ground penetrating radar and surface scraping may precede other testing methods in order to define the presence and the boundaries of the intact and disinterred burials. If the Church Hill property is to be directly impacted, it will be tested as well. Once testing is complete, the information will be evaluated for significance and recommendations for NRHP eligibility or further investigations can be made at that time. Further investigations will be conducted in accordance with the stipulations set forth in the Memorandum of Agreement found in Appendix F.

**Table III-22  
Areas of Archaeological Interest in the I-29/35 APE**

Property #	Cultural Affiliation	Association
VJA5C	Historic	Saloon
JA17-36	Historic	Immigrant Residence
JA41-45	Historic	Immigrant Residence
JA55-63	Historic	Immigrant Residence
MJA28	Historic	St. John's Catholic School
VJA85D	Historic	Immigrant Residence
VJA85E	Historic	Immigrant Residence
VJA90	Historic	African American Enclave, Church Hill
JA94	Historic	Church Hill
MJA95	Historic	Church Hill
MJA96	Historic	Church Hill
VJA98B	Historic	Church Hill & Joel F. Kinney Residence
JA99A	Historic	Church Hill
JA100	Historic	KCS Employees Hospital
VJA117	Historic	Church Hill
MJA122 (Plates A-07 & B-07)	Historic	Town of Kansas Graveyard
JA135	Historic	Residences
MJA138	Historic	Stores, Grand Missouri Hotel and Associated Buildings
MJA139	Historic	Stores and Residences
MJA149 & MJA150A	Historic	Stores and Water Works Building
VJA156	Historic	Red Light District
VJA157-160	Historic	Red Light District
JAB27	Historic	Railroad Station

#### **d. Conclusions**

Previously recorded properties within the APE include four NRHP properties, two National Register Districts, and three not registered districts and one Multiple Property Survey: the 14<sup>th</sup> Avenue Historic Industrial District, Columbus Park, Central Business District, and the Historic Colonnade Apartments of Kansas City, Missouri Survey.

Within the APE, a total of 278 properties and 37 bridges were examined and assessed for historical significance. From these, a total of 121 properties were built before 1945 and 27 bridges built before 1961 were recorded. All previously recorded properties, the two no longer existing bridges, and 12 no longer existing properties, were revisited during the architectural survey. All other previously recorded cultural resources were outside the APE.

Of the architectural properties recorded during the course of the survey, a total of eight were individually eligible for the National Register of Historic Places. Another three architectural resources comprise one NRHP-eligible historic district. In addition, three bridges are considered individually eligible for the National Register of Historic Places. All of these, except for Kessler Park, were a part of the SHPO's concurrence with MoDOT's recommendation on March 29, 2004. Kessler Park was submitted by MoDOT to the SHPO on May 26, 2005 and the SHPO concurred on June 20, 2005 that Kessler Park, as described in the submittal, was eligible for the NRHP. The area of Kessler Park that is considered eligible for the NRHP is not within

the APE although other areas of the park are within the APE. There are 59 properties within the APE that contain areas of archaeological interest. Should any of the 59 properties be impacted by the project, they will be evaluated for significance and based on that significance, appropriate measures will be undertaken. Further evaluations will be conducted in accordance with the stipulations set forth in the Memorandum of Agreement found in Appendix F.

## **8. HAZARDOUS WASTE SITES**

### **a. Survey Methodology**

A Phase I hazardous waste assessment was conducted for the I-29/35 Corridor. The purpose of the waste assessment was to identify sites within the study corridor that are contaminated or potentially contaminated with hazardous materials or waste. Sites containing excessive solid waste were also screened.

For the purposes of this assessment, hazardous wastes and materials are defined as products or wastes regulated by the EPA or the MDNR. These include substances regulated under the Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA), The Resource Conservation and Recovery Act (RCRA), The Toxic Substances Control Act (ToSCA), The Federal Insecticide Fungicide, and Rodenticide Act (FIFRA), solid waste management, and storage tanks.

The hazardous waste assessment for the I-29/35 Corridor involved extensive data collection efforts, including review of numerous government agency lists and files, review of current aerial photographs, and a field reconnaissance of the study corridor. The documents reviewed include the following: EPA and MDNR computer databases provided by Environmental Data Resources (EDR), Inc. (April, 2004); EPA Region VII files, Kansas City, Kansas; MDNR Central office.

The EPA databases include the following:

- CERCLIS - Comprehensive Environmental Response, Compensation and Liability Information System
- CERCLIS-NFRAP – CERCLIS No further Remedial Action Planned
- NPL - National Priorities List (Superfund)
- Proposed NPL
- CORRACTS – Corrective Action Report
- ERNS - Emergency Response Notification System
- RCRIS LGG - Resource Conservation and Recovery Information System - Large Quantity Generators (>1000 kg per month)
- RCRIS SQG - Resource Conservation and Recovery Information System - Small Quantity Generators (100kg - 1000kg per month)
- BRS – Biennial Reporting System
- CONSENT – Superfund (CERCLA) Consent Decrees
- ROD – Record of Decision
- DELISTED NPL – National Priority List Deletions
- FINDS – Facility Index System/Facility Initiative Program Summary Report
- HMIRS – Hazardous Materials Information Reporting System
- MLTS – Material Licensing Tracking System
- MINES – Mines Master Index File
- NPL LIENS – Federal Superfund Liens
- PADS – PCB Activity Database System
- DOD – Department of Defense Sites

- STORMWATER – Stormwater General Permits
- INDIAN RESERVATIONS – Indian Reservations
- US BROWNFIELDS – A listing of Brownfield Sites
- RMP – Risk Management Plans
- RAATS – RCRA Administrative Action Tracking System
- TRIS – Toxic Chemical Release Inventory System
- TSCA – Toxic Substances Control Act
- FTTS INSP – FIFRA/TSCA Tracking System
- SSTS – Section 7 Tracking Systems
- TSD - RCRA permitted treatment, storage, disposal facilities

The MDNR databases include the following:

- HWS – Registry of Confirmed, Abandoned or Uncontrolled Hazardous Waste Disposal Sites
- SWF/LF – Solid Waste Facility List
- LUST – Leaking Underground Storage Tanks
- UST – Petroleum Storage Tanks
- VCP – Sites Participating in Voluntary Cleanup Program
- AST – Aboveground Storage Tanks
- RRC - Certified Hazardous Waste Resource Recovery Facilities
- SPILLS - Environmental Response Tracking Database
- DEL SHWS – Registry Sites Withdrawn or Deleted
- AUL – Sites with Controls
- CDL – Environmental Emergency Response System

**b. Potential Hazardous Waste Sites**

The Phase I hazardous waste site assessment resulted in the identification of 127 individual sites (addresses/properties) within the study corridor, representing 251 entries from the various databases (available upon request). The research also included a 0.25-mile (0.4 kilometer) buffer area around the study corridor. The complete results with details of all of the sites, including those in the 0.25-mile (0.4 kilometer) buffer, are included in Technical Memorandum Number 1 titled *I-29/35 Paseo Bridge Corridor Hazardous Waste Material Screening* (available upon request). The potential hazardous waste sites located within the study corridor are shown on Exhibit III-8.

A potential impact area within the study corridor was defined, based on preliminary concept alternatives, in order to provide a narrower corridor to determine which properties would have the most potential of being impacted by the project. The potential impact area is a worst case scenario composite of all of the concept alternatives. Within this defined area, 44 sites were identified as having the potential for hazardous or solid waste contamination. These sites (and their potential severity) are listed in Table III-23 and are located on Exhibit III-8. State and federal agency lists document 41 of the 44 sites. The three additional sites were added from the field reconnaissance.

Forty-one of the 44 sites have regulatory documentation. These sites store or generate hazardous material; are former or operating service stations with known or unknown underground or above ground storage tanks; are suspected to be contaminated with hazardous materials by nature of land use or business; were reported to emergency spill response authorities; or store considerable amounts of solid waste.

There are four sites within the potential impact area that are screened as having a high potential for contamination where avoidance is desired. These are Site No. 14 American Railcar Industries, 1101 Bedford, North Kansas City, MO; Site No. 20 Cook Paint and Varnish, 919, E. 14<sup>th</sup> Ave, North Kansas City, MO; Site No. 31 Leo Eisenberg Property, I-35 & Armour Road, North Kansas City, MO.; and Site No. 40 Kansas City Limited Partnership, 2251 Armour Road, North Kansas City, MO. If necessary, portions of the property boundaries of Sites 14 and 20 may be taken with proper investigation. However, Site No. 31, located east of I-35 and south of Armour Road, was a previous construction debris landfill area and State Lead Cleanup Site (CERCLIS-NFRAP database), and should be avoided if possible. In addition, Site No. 40 is a Superfund site (NPL of the CERCLIS database) located at the east side of the north end of the study corridor. The site was used in the past for herbicide manufacture, blending and distribution and was known and operated in the past under the names Reade Manufacturing, US Borax and Habco. Elevated levels of 2, 4-D, pentachlorophenol, and arsenic were found in the soil. As of this date, further study is ongoing and remediation is planned. It is recommended that no excavation take place in the proximity of properties 31 and 40 without sampling.

The other 41 sites generate or store regulated hazardous materials under EPA cradle to grave regulations, have or had underground storage tanks, have had spills of hazardous materials requiring documentation, or are on various EPA regulatory lists. Although these properties were not thoroughly inspected, potential for contamination at these sites are considered low to moderate and are not thought to pose a considerable action in time and expense to remediate or delay construction of the improvements. Examples of this type of industrial site are the properties shown as KCI, Inc.

The KCI, Inc. properties, Sites Nos. 4 and 6, are immediately adjacent to I-29/35 Viaduct south of the Paseo Bridge. As noted below, the sites are listed as having "moderate" potential for hazardous materials contamination, primarily due to former industrial uses which include Excelsior Steel and Steel Furnace. Any location change to the existing I-29/35 alignment in this location could affect the KCI Inc. properties noted as Site No. 4 and Site No. 6.

Much of the land use in the study corridor is industrial and commercial use dating back 100 years or more. Former uses and possible contamination associated with former uses was not investigated, however, no documentation exists of contamination.

Numerous residential and smaller commercial properties along with the listed industrial properties were constructed prior to enactment of asbestos and lead based paint regulations. All structures predating 1980 have the potential for Asbestos Containing Material (ACM) and those predating 1978 also have the potential for Lead Based Paint (LBP). All structures planned for demolition should be surveyed for ACM and LBP content, and if found, they would be properly removed prior to demolition.

**Table III-23  
Potential Hazardous Waste Sites within Potential Impact Area**

Site No.	Site Name	Site Location	Federal/State Program List	Comments	Potential for Contamination
1	Cheep Antiques	500 W. 5 <sup>th</sup> St.	RCRIS-SQG	Potential for Asbestos	Low
2	J E Dunn Industries	929 Holmes	FTTS FINDS	Potential for Asbestos	Low
3	Vacant	1 <sup>st</sup> and Lydia	UST LUST	Former KCMO tow lot, tanks removed and soil excavated	Low
4	KCI, Inc. (former Excelsior Steel Furnace)	1501 Guinotte	FINDS RCRIS-SQG	Industrial use, trailer manufacturing, building on west side of I-29/35,	Moderate due to former uses

**Table III-23 (continued)**  
**Potential Hazardous Waste Sites within Potential Impact Area**

Site No.	Site Name	Site Location	Federal/State Program List	Comments	Potential for Contamination
5	Mid America Mini Storage	1426 Guinotte	Not listed	Former industrial uses include manufacturing, foundry & paint room.	Moderate due to former uses
6	KCI, Inc. (former Excelsior Steel)	1600 Guinotte	Not listed	Former industrial use, pipe and steel company, building on east side of I-29/35	Moderate due to former uses
7	Reed Oven Co.	1700-1720 Nicholson	RCRIS-SQG FINDS	Industrial use	Moderate due to use
8	Materials Packaging Corp	1640 Guinotte	FINDS	Unknown former use, not likely to take this property	Low
9	National Exterminating	915 Charlotte	UST	Use	Low
10	Office	801 Charlotte	ERNS LUST UST SPILLS	Commercial use	Moderate
11	Richkin	720 Troost	RCRIS-SQG	Commercial use	Low
12	International Brotherhood of Electrical Workers	1100 Admiral	UST	Commercial use	Low
13	George O'Donnell Rubbercraft Products	1209 Independence Ave.	RCRIS-SQG FINDS	Commercial use	Low
14	American Railcar Industries	1101 Bedford	UST CERCLIS-NFRAP FINDS RCRIS-LQG	Industrial use	High – Avoidance is desired
15	Pioneer Container	1000 Ellerbrook	FINDS	Industrial use	Low
16	ECHO/GLACO	1010 Ellerbrook	SPILLS	Industrial use	Low
17	Houseman Ready Mix	1014 E. 14 <sup>th</sup>	RCRIS-SQG FINDS UST	Industrial use	Low
18	Cook Composites and Polymers	1412 Knox	ERNS	Industrial use	Low
19	Cook Composites and Polymers	1533 Knox	HMIRS	Industrial use	Low
20	Cook Paint and Varnish	919 E. 14 <sup>th</sup>	FTTS INSP FINDS RCRIS-LQG CORRACTS CERCLIS-NFRAP	Industrial use	High – Avoid buildings
21	Cook Composites and Polymers	1402 Knox	FINDS	Industrial use	Low
22	Heritage Inks International	1801 Linn	RCRIS-SQG	Industrial use	Low
23	Farmland Industries	1736 Linn	FINDS RCRIS-SQG	Industrial use	Low
24	Sherwin Williams	1737 Macon	FINDS	Industrial use	Low
25	Midwest Coatings	1813 Macon	RCRIS-SQG FINDS	Industrial use	Low
26	Wagner Industries	1201 E. 12 <sup>th</sup> Ave.	RCRIS-SQG	Commercial	Low
27	Future Foam	1207 Macon	RCRIS-SQG FINDS	Commercial	Low
28	Harley Davidson Motor Co	1225 Bedford	RCRIS-SQG FINDS	Commercial	Low
29	ADM Gary Tauver (Grain Elevator)	1400 Nodaway	ERNS SPILLS	Industrial	Low
30	Dunn Construction and Realty	1225 E. 16 <sup>th</sup> Ave.	RCRIS-SQG FINDS	Commercial Construction Yard	Low

**Table III-23 (continued)**  
**Potential Hazardous Waste Sites within Potential Impact Area**

Site No.	Site Name	Site Location	Federal/State Program List	Comments	Potential for Contamination
31	Leo Eisenberg Property	I-35 and Armour Road	CERCLIS-NFRAP FINDS, State Lead Site	Vacant – previously a landfill	High – Avoidance is desired
32	Monarch Milling – ADM	1701 Armour Road	RCRIS-SQG FINDS TRIS UST	Industrial	Low
33	Gooch Milling	1717 Armour Road	FINDS	Industrial	Low
34	Conagra	2010 Taney	FINDS SPILLS FTTS INSP	Industrial	Low
35	Phillips 66 – Snappy Stores	1910 Armour Road	LUST SPILLS FINDS RCRIS-SQG	Commercial	Low
36	Texaco Service Station	1215 Armour Road	UST LUST FINDS RCRIS-SQG	Commercial	Low
37	Sutherlands	2201 Armour Road	RCRIS-SQG FINDS SPILLS	Commercial	Low
38	Norfolk Southern Railroad	1130 Bedford Ave.	VCP HMIRS ERNS RCRIS-SQG FINDS LUST SPILLS UST	Railroad	Low
39	Burlington Northern RR	1275 E. 16 <sup>th</sup> St.	HMIRS ERNS FINDS SPILLS	Railroad	Low
40	KC Limited Partnership (former Habco)	2251 Armour Road	CERCLIS ERNS RCRIS-SQG HWS FINDS UST	Industrial – Herbicide manufacturing & distribution	High – Avoidance is desired
41	Verde Garden Ornaments (former Holland Engraving)	422 Admiral Blvd.	RCRIS-SQG FINDS	Commercial	Low
42	6 <sup>th</sup> Street Auto Repair (former Roy's Conoco)	441 E. 6 <sup>th</sup> Street	UST	Commercial	Low
43	Other RR Properties	Various	Various	Railroad	Low
44	Kansas City Power & Light – N East Station	920 N Olive St.	CERCLIS - NFRAP	Chlorinated hydrocarbons detected in deep groundwater	Low

## 9. VISUAL QUALITY

### a. Existing Visual Environment

The I-29/35 Corridor is located in an urban, highly developed area of the Kansas City metropolitan region. It includes the existing I-29/35 highway facility and extends from just north of Armour Road in North Kansas City, Missouri to the northwest edge of downtown Kansas City, Missouri. The majority of the surrounding area is developed with commercial, residential and industrial buildings, with the exception of the Missouri River and its immediate environs, and the parks scattered throughout the area. Most of the commercial and industrial areas seem to lack harmonious or cohesive aesthetic relationships. In contrast, some of the older residential and commercial areas within the study corridor can be less intrusive and more aesthetically pleasing, depending upon architectural styles and maintenance practices.

The visual impacts of a project may be quite varied in different areas of a project corridor because the areas themselves can be visually distinct, can exhibit unique and consistent visual characteristics, and can possess varying degrees of visual quality. The study corridor can be divided into separate areas or units within which there are consistent visual characteristics and

a uniform visual experience. These areas, called “Visual Assessment Units,” have direct relationships to physiography and land use and can be thought of as “outdoor rooms.” The boundaries of the visual assessment units occur where there is a change in visual character. The strongest determinations of the visual boundaries are *topography* and *landscape components*.

- **Topography** – Topography influences many natural systems such as drainage, vegetation, geology, aspect, etc. These natural systems often have distinct and variable characteristics with visual consequences.
- **Landscape Components** – Landscape components are distinct elements in the visual environment. Natural land cover elements such as trees, water, rocks, and open areas; developed land uses such as roads, bridges, and buildings; and identifiable patterns such as power line corridors and agricultural crops, constitute landscape components.

The following visual assessment units (as presented on Exhibit III-9) were determined by analyzing the topography of the study corridor, studying the major landscape components, studying aerial photography and through windshield surveys:

1. **Downtown KC Area** – The Downtown Kansas City area (inside the Loop) is located on the south side of I-29/35/70, and bounded by I-70/US 71 on the east and I-29/35 on the west. The downtown area within the study corridor is characterized by older buildings of the “Wholesale Historic District” on the west end, some of which are being renovated into high density residential units, and by modern office and government buildings toward the middle and east end (see Figure III-1).
2. **River Market Area** – The River Market area is located just north of the Downtown Area, on the north side of I-29/35/70, between the Broadway Bridge and M-9/Heart of America Bridge. It is characterized by older brick buildings of the “Old Town Historic District” that have been renovated to house commercial, office and high density residential uses (see Figure III-2).
3. **Columbus Park Neighborhood** – The Columbus Park Neighborhood is located east of the River Market Area, on the north and west side of I-29/35. It is characterized by a mix of older and newer residential structures, commercial buildings, churches, community centers and parks (see Figure III-3).
4. **Troost Avenue Area** – The Troost Avenue Area is located just east of I-70/US 71. Troost Avenue runs through the middle of this area, which is predominantly characterized by one, two or three-story office and light industrial buildings (see Figure III-4).
5. **Chouteau Court/Paseo West Neighborhood** – The Chouteau Court/Paseo West Neighborhood contains the Chouteau Court public housing complex located between Independence Avenue, I-29/35 and the Paseo Boulevard; and contains the residential area south of Chouteau Court between Independence Avenue and Admiral Boulevard. The public housing complex is composed of clusters of three-story, apartment style brick structures. Although there are some run down commercial structures along Independence Avenue, there are several older single-family and multi-family residential buildings in this area (see Figure III-5).
6. **KC University of Medicine and Biosciences Complex** – The Kansas City University of Medicine and Biosciences Complex is located at the northeast corner of the Independence/Paseo intersection. The complex is characterized by older as well as

newer brick and limestone, three to four-story institutional buildings with open space and extensive landscaping (see Figure III-6).



**Figure III-1 – The Downtown KC Area.** (Notable view from the road.)



**Figure III-2 – The River Market Area.** (Notable view from the road)



**Figure III-3 – Columbus Park Neighborhood.** Some older single-family residential homes near Columbus Square.



**Figure III-4 – Troost Avenue Area.**



**Figure III-5** – Chouteau Court/Paseo West Neighborhood. Some typical residential buildings.



**Figure III-6** – KC University of Medicine and Biosciences Complex.

7. **Riverside Housing Complex** – The Riverside (public) Housing Complex is located just east of Kessler Park, on the east side of the Paseo Boulevard. It is characterized by new two-story multi-family residential units (see Figure III-7).
8. **Kessler Park** – Kessler Park is located north of Independence Avenue, between I-29/35 and the Paseo Boulevard. This portion of the park is characterized by undeveloped wooded, hilly topography. There are also some limestone retaining walls along the hill that faces I-29/35 (see Figure III-8).
9. **Industrial Area – KC** – This industrial area, in the City of Kansas City, is located mostly on the east side of I-29/35, between the Missouri River and Kessler Park. It is characterized by older (some vacant or abandoned) light industrial buildings and storage yards, and railroad tracks (see Figure III-9).
10. **Isle of Capri Casino** – The Isle of Capri Casino area is located at the south side of the Missouri River, on the east side of I-29/35. It is characterized by a riverboat-style casino structure, surface and garage parking, skywalks and extensive landscaping (see Figure III-10).
11. **Riverfront Park Area** – The Riverfront Park Area is located at the south side of the Missouri River, on the west side of I-29/35, and includes Berkley Riverfront Park, the open area south of the park that is planned to be a mixed-use development and the inside of the loop roads. The area is characterized by grassed open areas, extensive tree plantings, a pedestrian/bicycle trail and a lighted promenade (see Figure III-11).
12. **Missouri River Area** – The Missouri River is contained by a levee on each side and is crossed by the Paseo Bridge. The water surface is approximately 800 feet (243.8 meters) wide, and the north side of the river is characterized by a riparian wooded area (see Figure III-12).



**Figure III-7 – Riverside Housing Complex.**



**Figure III-8 – Kessler Park. Wooded portion near highway. (Notable view from the road)**



**Figure III-9 – Industrial Area – KC.**



**Figure III-10 – Isle of Capri Casino.**



**Figure III-11** – Riverfront Park Area. (Notable view from the Paseo Bridge).



**Figure III-12** – Missouri River Area with riparian woodland in background. (Notable view of the Paseo Bridge from Berkley Riverfront Park)

- 13. NKC Industrial Area (East)** – This industrial area, in the city of North Kansas City, is located on the east side of I-29/35, between the Missouri River and Armour Road. It is characterized by light and heavy/general industrial buildings including several prominent grain elevators. In addition, several railroad tracks run through the middle of this area (see Figure III-13).
- 14. NKC Industrial Area (West)** – This industrial area, in the city of North Kansas City, is located on the west side of I-29/35, between the Missouri River and Armour Road. It is characterized by newer light industrial buildings north of 16<sup>th</sup> Avenue and older light to Heavy/general industrial buildings south of 16<sup>th</sup> Avenue. In addition, several railroad tracks run through the middle of the older portion of this area (south of 16<sup>th</sup> Avenue) (see Figure III-14).
- 15. The Avenues Residential Area** – This mixed residential area is located at the north end of the study corridor, north of Armour Road and west of I-29/35. It is characterized by a mix of two-story multi-family residential units and small one-story single-family residential houses (see Figure III-15).
- 16. Sunny Hills Multi-family Residential Area** – This multi-family residential area is located at the north end of the study corridor, west of I-29/35 and north of the levee. It is characterized by clusters of two to three-story multi-family residential units (see Figure III-16).
- 17. Armour Road Commercial Area** – This commercial area is located at the north end of the study corridor, east of I-29/35 and north of Armour Road. It is characterized by hotels, fast-food restaurants and convenience stores, all of which vary in architectural style (see Figure III-17).



**Figure III-13** – Industrial Area – NKC – East.



**Figure III-14** – Industrial Area – NKC – West.



**Figure III-15** – The Avenues Residential Area. Typical one-story single-family houses.



**Figure III-16** – Sunny Hills Multi-family Residential Area.



**Figure III-17 – Armour Road Commercial Area.**

**18. River Forest Park** – River Forest Park is located at the north end of the study corridor, east of I-29/35 and north of the levee. It is characterized by wooded, gently rolling topography with a natural stream dissecting the area (see Figure III-18).



**Figure III-18 – River Forest Park.**

**b. Visual Quality Rating**

The “visual assessment units” described above were studied to determine a visual quality rating. The quality of the visual environment can be collectively defined using the attributes of *vividness*, *intactness*, and *unity*. *Vividness* is the relative strength of the seen image, *intactness* is the visual integrity of the natural or man-made landscape and its freedom from encroaching elements, and *unity* is the overall visual harmony of a composition and the degree to which the various elements combine in a coherent way. The identified visual assessment units present within the study corridor and the relative existing visual quality rating of each (on a scale of low, moderate, or high) is presented in Table III-24.

**Table III-24  
Visual Quality and Visual Receptors**

Visual Assessment Units	Visual Quality Rating	Relative Concentration Of Sensitive Visual Receptors
1. Downtown KC Area	Moderate to High	Low to Moderate
2. River Market Area	High	Moderate to High
3. Columbus Park Neighborhood	Moderate to High	High
4. Troost Avenue Area	Low	Low to Moderate
5. Chouteau Court/Paseo West Neighborhood	Moderated to Low	High

**Table III-24 (continued)  
Visual Quality and Visual Receptors**

Visual Assessment Units	Visual Quality Rating	Relative Concentration Of Sensitive Visual Receptors
6. KC University of Medicine and Biosciences Complex	High	Moderate
7. Riverside Housing Complex	High	High
8. Kessler Park	High	Low
9. Industrial Area – KC	Low	Low
10. Isle of Capri Casino	Moderate	Low
11. Riverfront Park Area	High	Moderate
12. Missouri River Area	High	Low
13. Industrial Area – NKC – East	Low	Low
14. Industrial Area – NKC – West	Low	Low
15. The Avenues Residential Area	Moderate to High	High
16. Sunny Hills Multi-family Residential Area	Moderate to High	High
17. Armour Road Commercial Area	Low	Low
18. River Forest Park	High	Low

### c. Visual Resources

Within the study corridor, there are several visual resources that are scenically significant and contribute to the visual identity of the environment. The most notable natural scenic area within the corridor is the Missouri River (see Figures III-12 and III-19). The water surface and adjacent riparian woodland provide a sharp contrast with the sometimes chaotic development of the urban environment. Other notable visual resources located throughout the study corridor include natural or landscaped areas such as Kessler Park, Berkley Riverfront Park and River Forest Park (see Figures III-8, III-11 and III-18). In addition, the built environment can also provide aesthetically pleasing visual resources such as the River Market area, with its historic brick buildings of the Old Town Historic District (see Figure III-2), and the Downtown Kansas City area with its historic buildings of the Wholesale Historic District on the west end and the mix of early and modern government and office buildings visible along the remainder of the north side of the CBD Loop (see Figure III-1).

### d. Viewers

Visual impact is determined by change in the visual environment as related to viewer response. For the purpose of highway project assessment, there are two distinct categories of viewer response to be considered: viewers who are users of the project facility (views *from* the road), and people who can observe the roadway from an adjacent vantage point (views *of* the road).

**Views FROM the Road** – The best potential for the most vivid views *from* the road occurs on and near the Paseo Bridge, near Kessler Park and near the River Market/Downtown Kansas City area. As travelers approach and cross the Paseo Bridge, they are provided excellent views of the Missouri River and its riparian woodland (see Figure III-19). Approaching from the north, travelers are also provided with high quality views of Berkley Riverfront Park and the downtown skyline in the background (see Figures III-11 and III-20). Another notable view from the road occurs at the wooded hills of Kessler Park (see Figure III-8). Although the roadway is somewhat recessed at the south end of the study corridor, travelers are provided short-duration views of the River Market and downtown areas (see Figures III-1 and III-2).



**Figure III-19** – View of the Missouri from the Paseo Bridge (looking west).



**Figure III-20** – View of the downtown Kansas City area from the Paseo Bridge (looking southwest).

**Views OF the Road** – Individuals that have the potential for undesirable views of the road are referred to in this discussion as “Sensitive Visual Receptors.” In the I-29/35 Study Corridor, those sensitive visual receptors are concentrated in the residential areas, parks and schools. The visual assessment units that contain or have the potential to contain concentrations of sensitive visual receptors include the River Market Area (residential buildings) the Columbus Park Neighborhood, the Chouteau Court/Paseo West Neighborhood, the KC University of Medicine and Biosciences Complex, the Riverside Housing Complex, the Riverfront Park Area, The Avenues Residential Area and the Sunny Hills Multi-family Residential Area. Although the Riverfront Park Area can have moderate concentrations of sensitive visual receptors, Kessler Park and River Forest Park do not have recreational use areas of any kind adjacent to the roadway and therefore contain no sensitive visual receptors. The relative concentration of sensitive visual receptors for each visual assessment unit is presented in Table III-24.

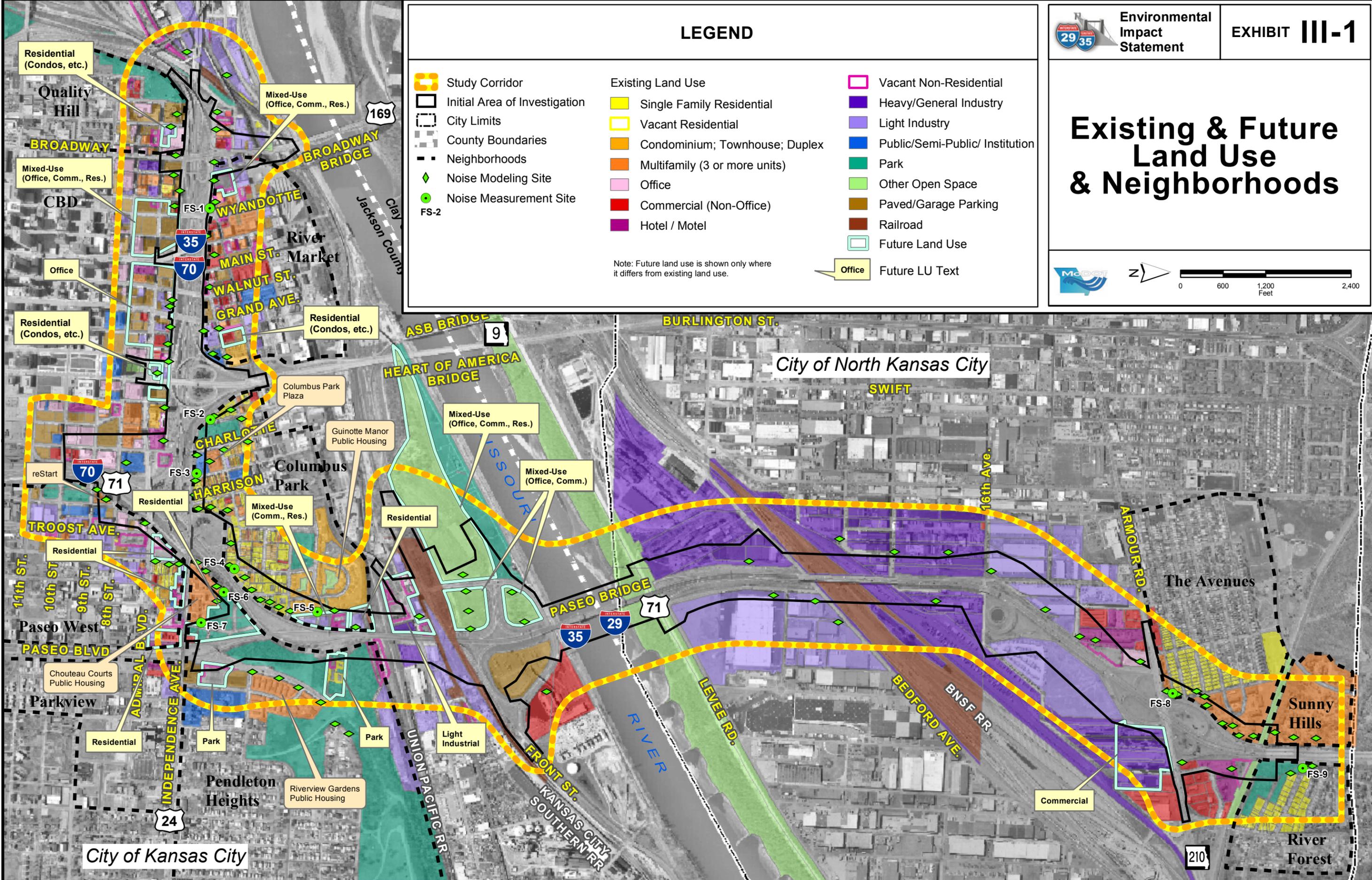
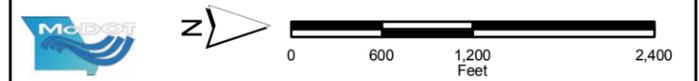
At the Missouri River crossing, the existing Paseo Bridge provides viewers at Berkley Riverfront Park and the Isle of Capri Casino with excellent views of the 50-year old, self-anchored suspension bridge that is eligible for the National Register of Historic Places (see Figure III-12). The bridge has recently received aesthetic lighting treatments such as illuminated pylons and cables. Other improvements have also been completed, including new paint and addition of gateway features.



### LEGEND

- |                               |                                |                                 |
|-------------------------------|--------------------------------|---------------------------------|
| Study Corridor                | Existing Land Use              | Vacant Non-Residential          |
| Initial Area of Investigation | Single Family Residential      | Heavy/General Industry          |
| City Limits                   | Vacant Residential             | Light Industry                  |
| County Boundaries             | Condominium; Townhouse; Duplex | Public/Semi-Public/ Institution |
| Neighborhoods                 | Multifamily (3 or more units)  | Park                            |
| Noise Modeling Site           | Office                         | Other Open Space                |
| Noise Measurement Site        | Commercial (Non-Office)        | Paved/Garage Parking            |
| FS-1                          | Hotel / Motel                  | Railroad                        |
| FS-2                          | Future Land Use                | Office Future LU Text           |
- Note: Future land use is shown only where it differs from existing land use.

# Existing & Future Land Use & Neighborhoods





# Council Districts and Planning Areas

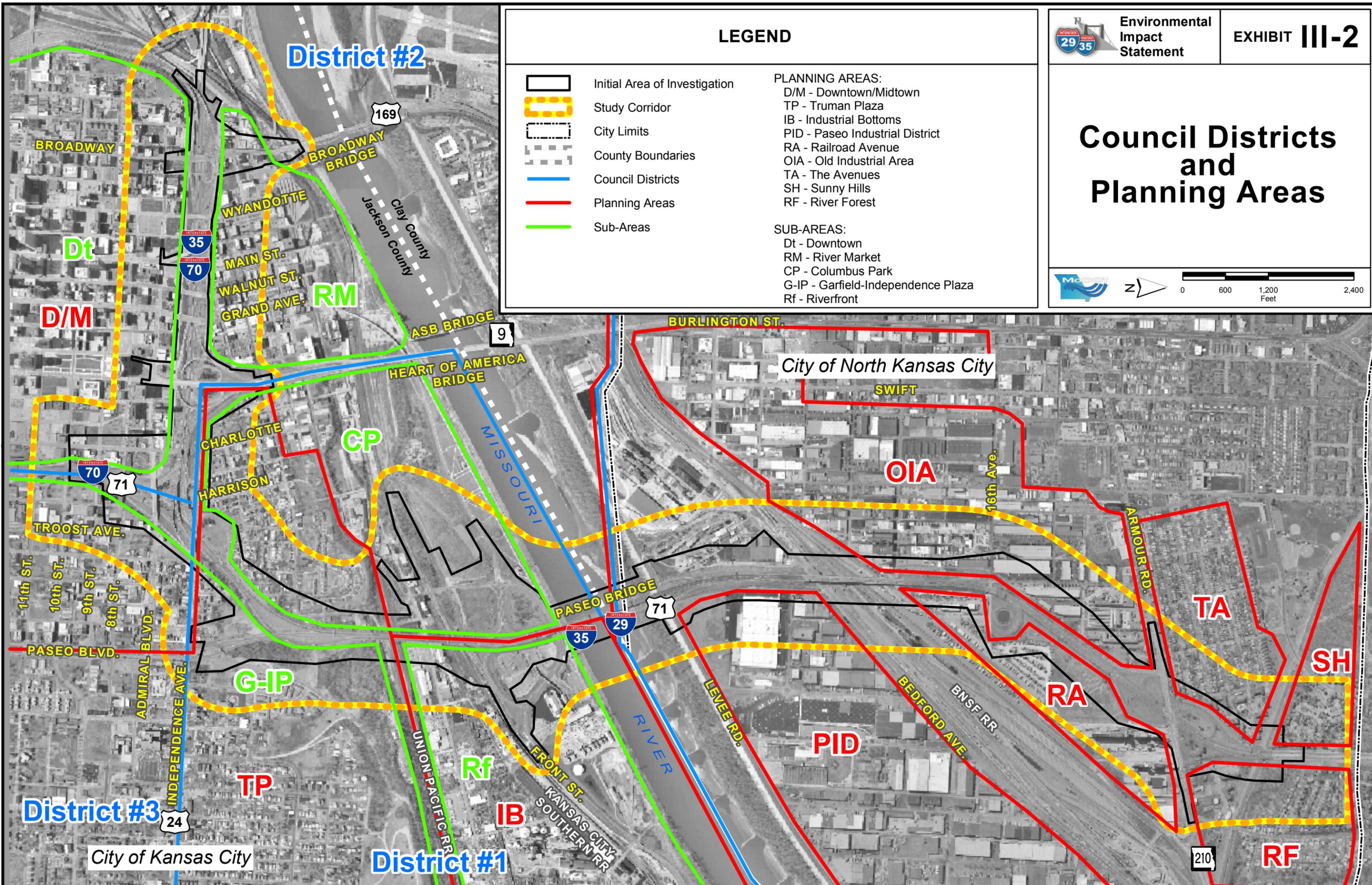


## LEGEND

- Initial Area of Investigation
- Study Corridor
- City Limits
- County Boundaries
- Council Districts
- Planning Areas
- Sub-Areas

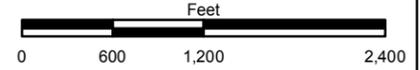
- PLANNING AREAS:
- D/M - Downtown/Midtown
  - TP - Truman Plaza
  - IB - Industrial Bottoms
  - PID - Paseo Industrial District
  - RA - Railroad Avenue
  - OIA - Old Industrial Area
  - TA - The Avenues
  - SH - Sunny Hills
  - RF - River Forest

- SUB-AREAS:
- Dt - Downtown
  - RM - River Market
  - CP - Columbus Park
  - G-IP - Garfield-Independence Plaza
  - Rf - Riverfront



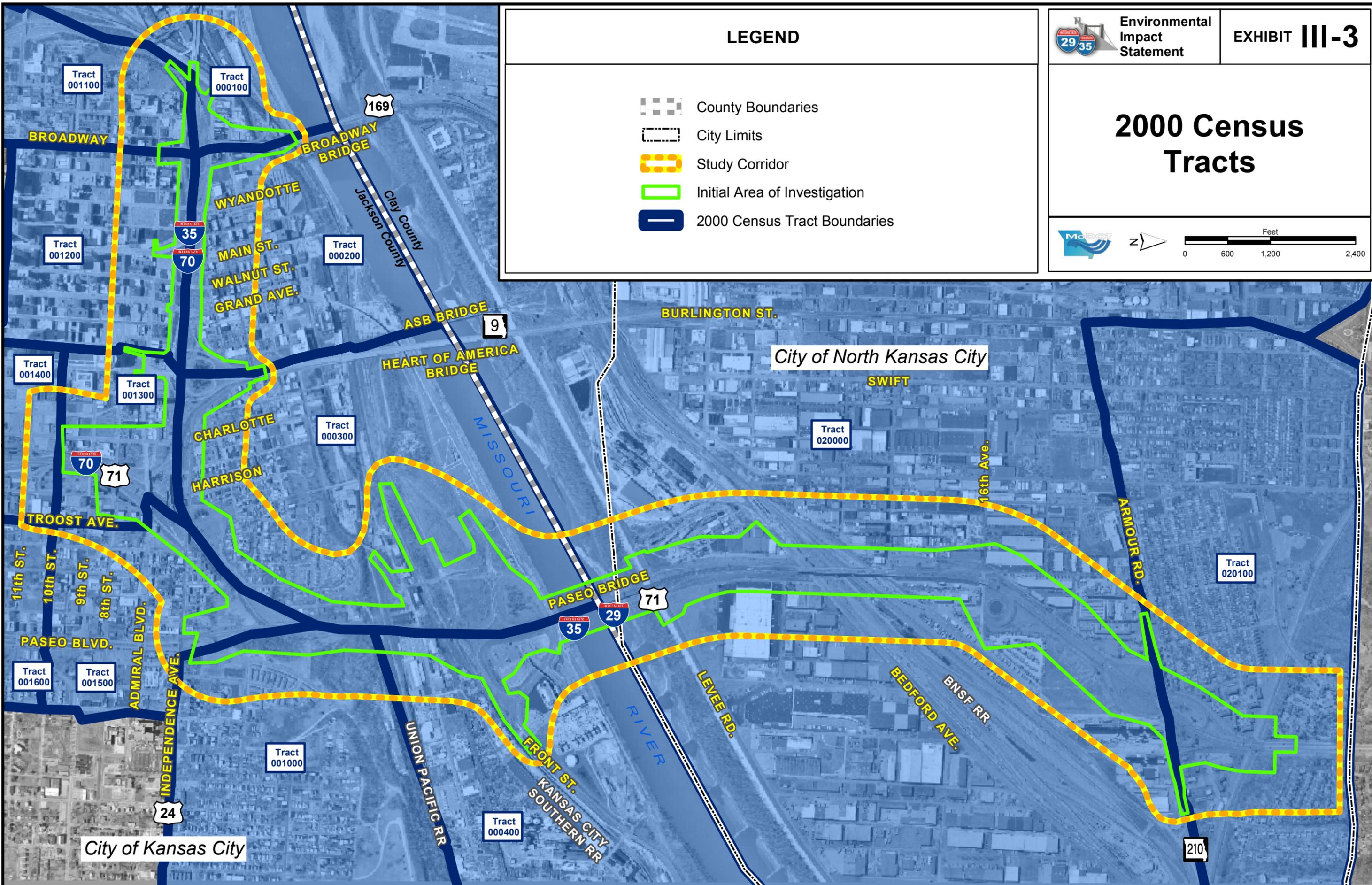


# 2000 Census Tracts



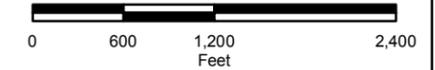
## LEGEND

-  County Boundaries
-  City Limits
-  Study Corridor
-  Initial Area of Investigation
-  2000 Census Tract Boundaries



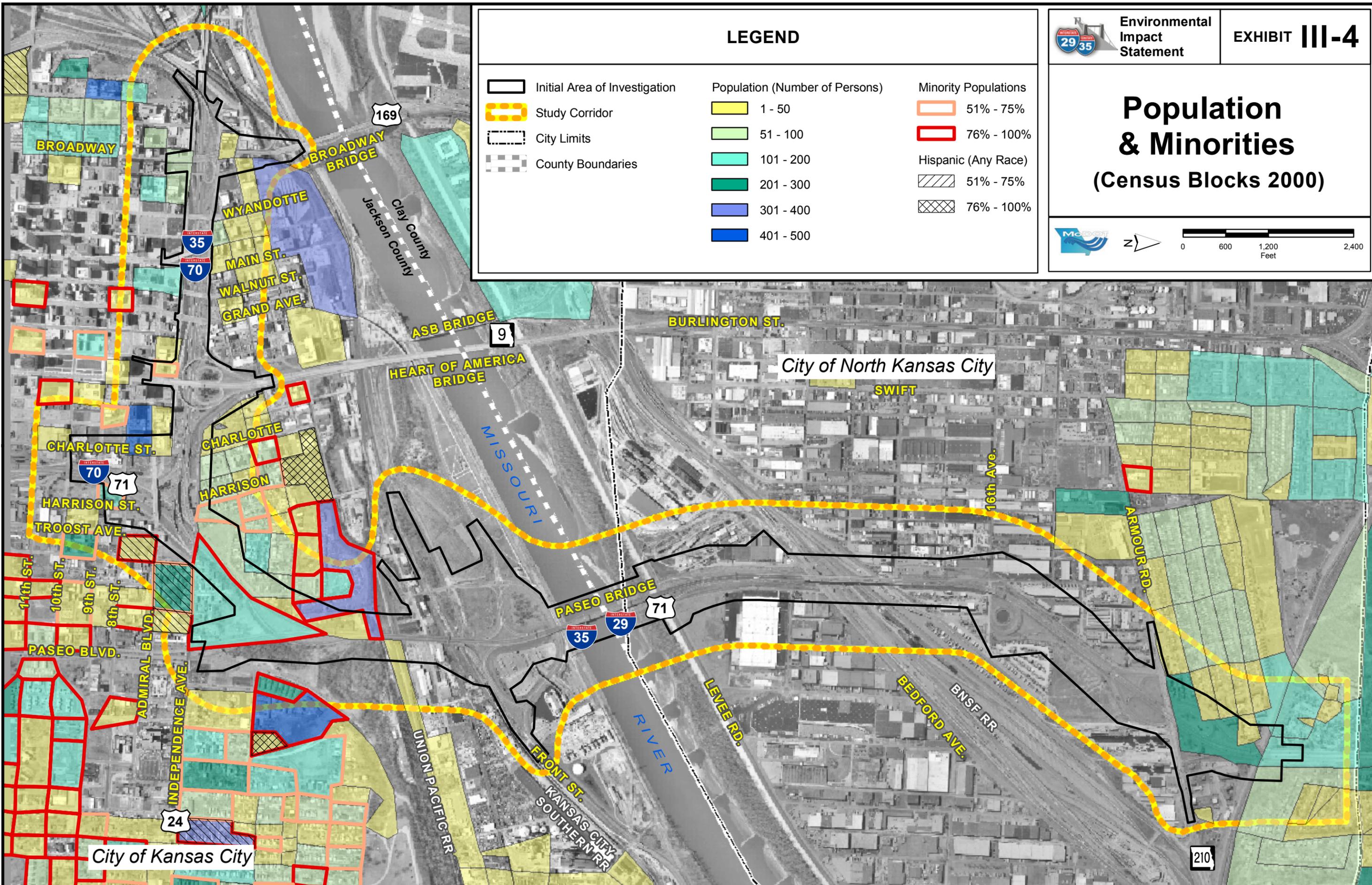


# Population & Minorities (Census Blocks 2000)



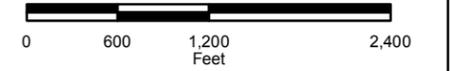
## LEGEND

	Initial Area of Investigation	<b>Population (Number of Persons)</b>	<b>Minority Populations</b>
	Study Corridor		
	City Limits		
	County Boundaries		<b>Hispanic (Any Race)</b>



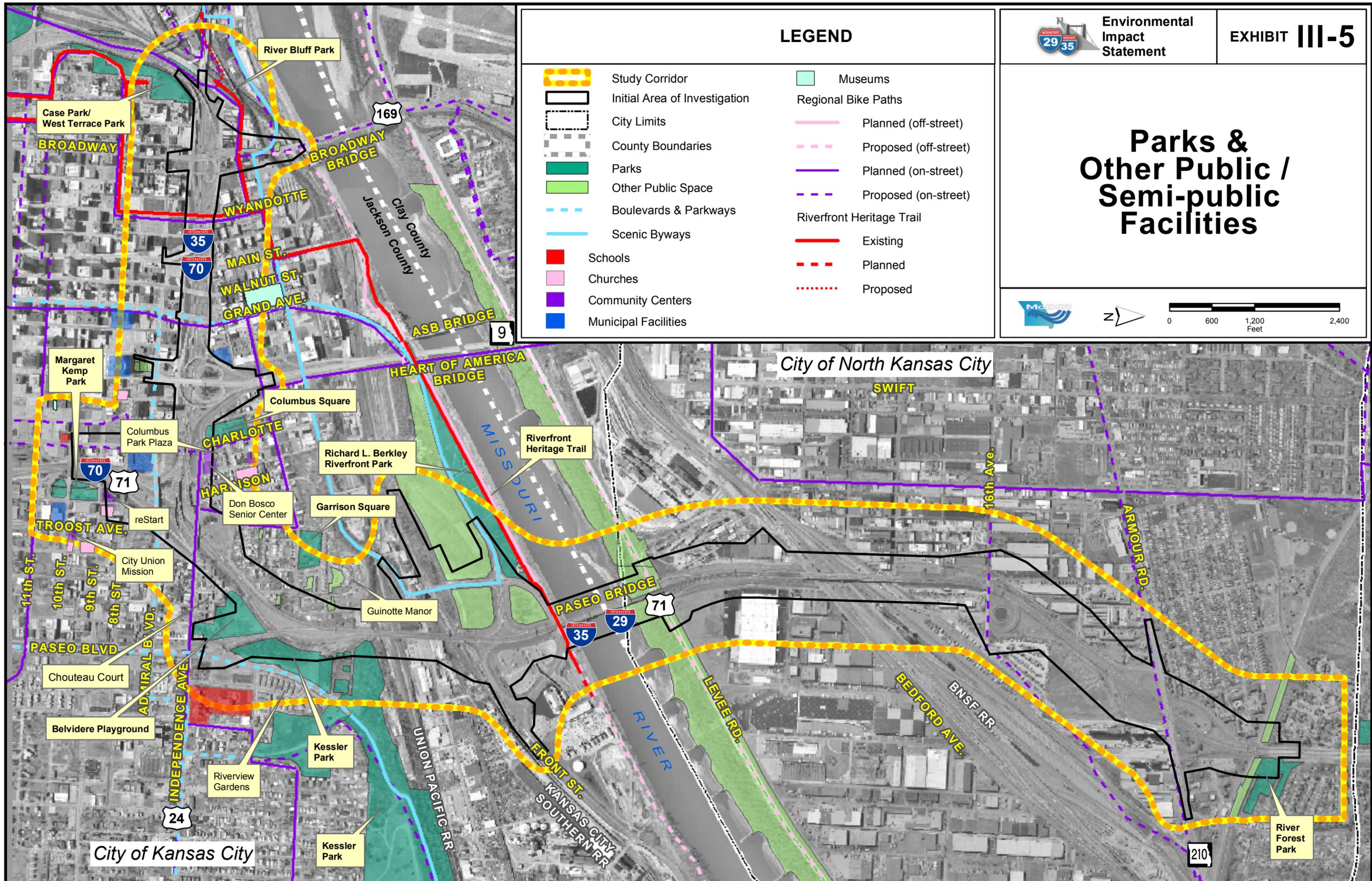


# Parks & Other Public / Semi-public Facilities



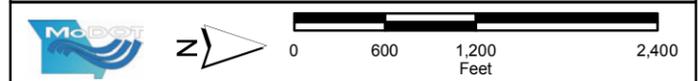
## LEGEND

- Study Corridor
- Initial Area of Investigation
- City Limits
- County Boundaries
- Parks
- Other Public Space
- Boulevards & Parkways
- Scenic Byways
- Schools
- Churches
- Community Centers
- Municipal Facilities
- Museums
- Regional Bike Paths
- Planned (off-street)
- Proposed (off-street)
- Planned (on-street)
- Proposed (on-street)
- Riverfront Heritage Trail
- Existing
- Planned
- Proposed

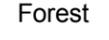


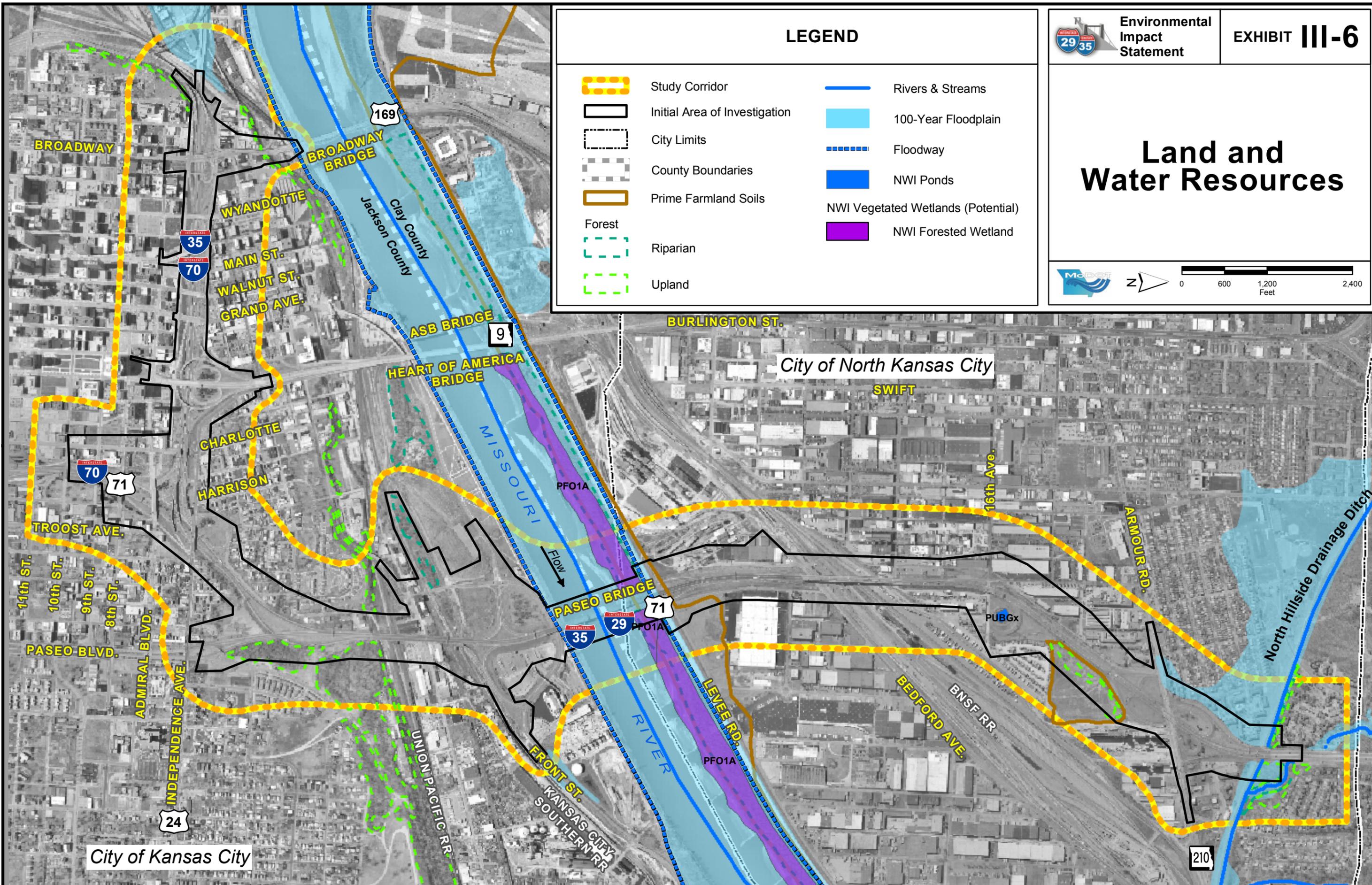


# Land and Water Resources



## LEGEND

-  Study Corridor
-  Initial Area of Investigation
-  City Limits
-  County Boundaries
-  Prime Farmland Soils
-  Forest
-  Riparian
-  Upland
-  Rivers & Streams
-  100-Year Floodplain
-  Floodway
-  NWI Ponds
-  NWI Vegetated Wetlands (Potential)
-  NWI Forested Wetland

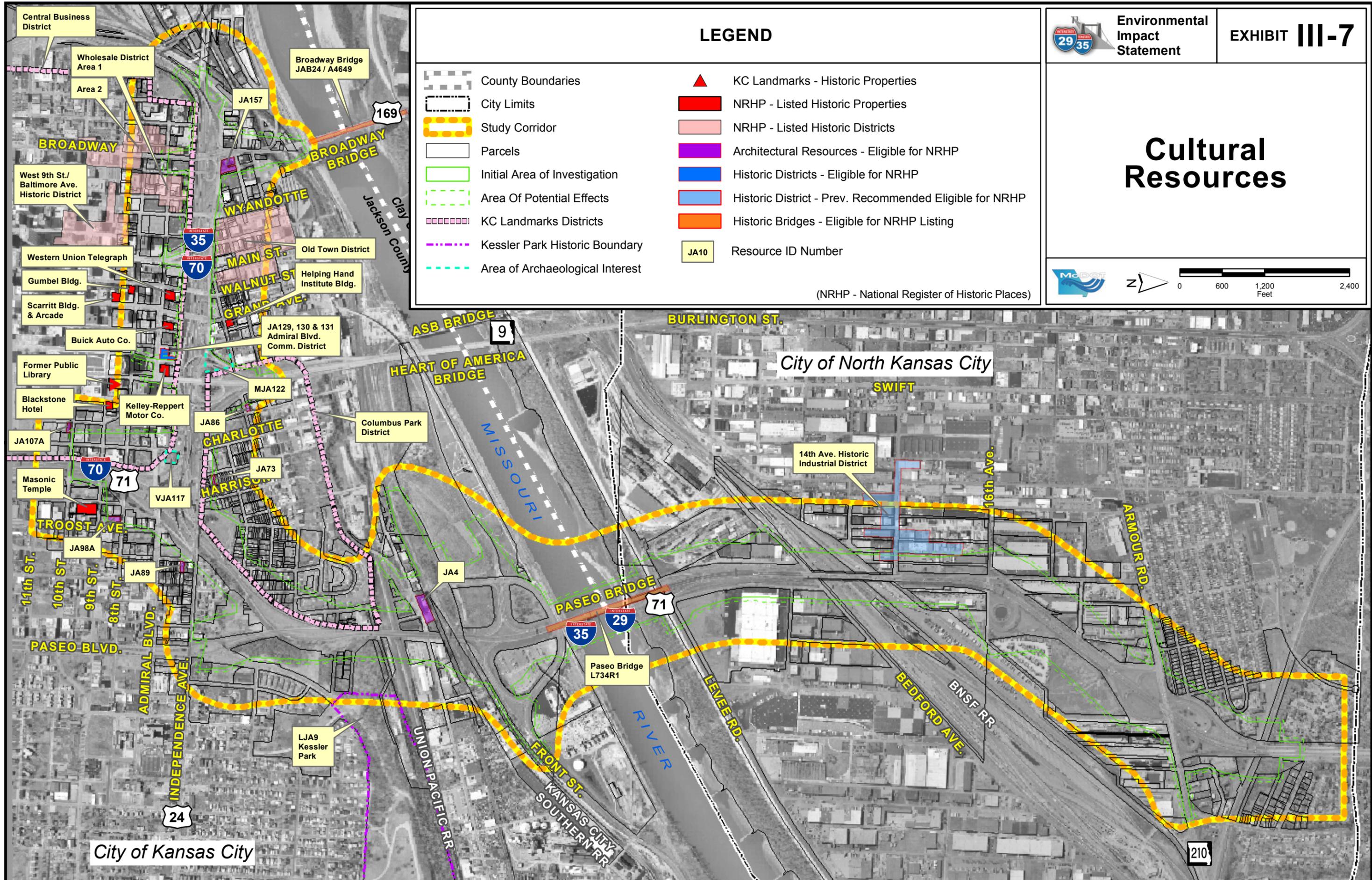
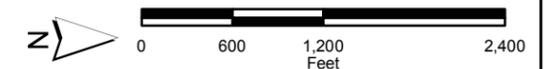




### LEGEND

- County Boundaries
- City Limits
- Study Corridor
- Parcels
- Initial Area of Investigation
- Area Of Potential Effects
- KC Landmarks Districts
- Kessler Park Historic Boundary
- Area of Archaeological Interest
- KC Landmarks - Historic Properties
- NRHP - Listed Historic Properties
- NRHP - Listed Historic Districts
- Architectural Resources - Eligible for NRHP
- Historic Districts - Eligible for NRHP
- Historic District - Prev. Recommended Eligible for NRHP
- Historic Bridges - Eligible for NRHP Listing
- Resource ID Number

(NRHP - National Register of Historic Places)

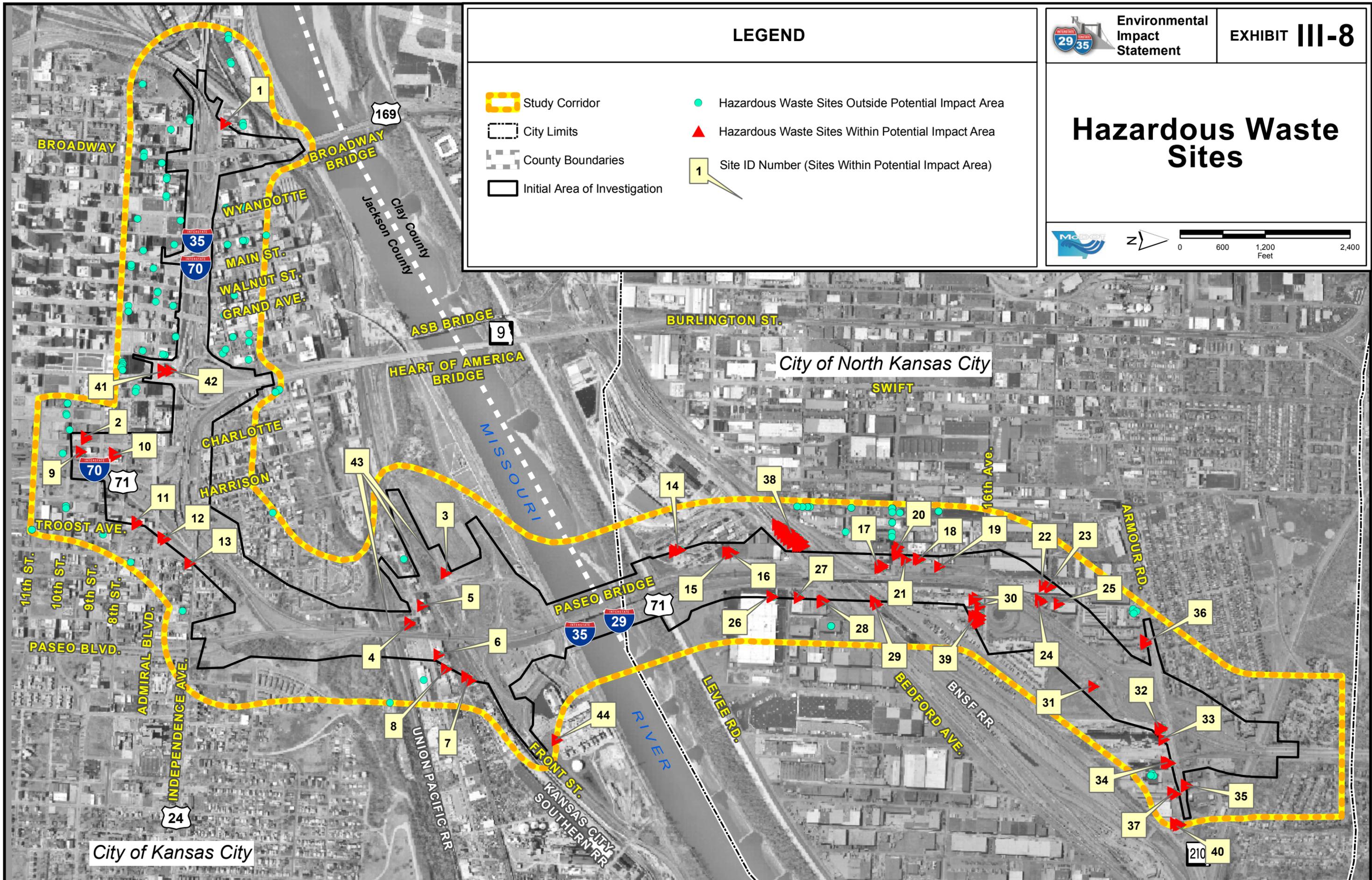




LEGEND

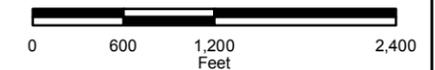
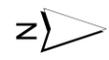
- Study Corridor
- City Limits
- County Boundaries
- Initial Area of Investigation
- Hazardous Waste Sites Outside Potential Impact Area
- Hazardous Waste Sites Within Potential Impact Area
- Site ID Number (Sites Within Potential Impact Area)

# Hazardous Waste Sites





# Visual Assessment Units



## LEGEND

- Initial Area of Investigation
- Study Corridor
- City Limits
- County Boundaries
- Visual Assessment Units

1. Downtown KC Area
2. River Market Area
3. Columbus Park Neighborhood
4. Troost Avenue Area
5. Chouteau Court/Paseo West Neighborhood
6. KC University of Medicine & Biosciences

7. Riverside Housing Complex
8. Kessler Park
9. Industrial Area - KC
10. Isle of Capri Casino
11. Riverfront Park Area
12. Missouri River Area
13. Industrial Area - NKC - East
14. Industrial Area - NKC - West
15. Avenues Residential Area
16. Sunny Hills MF Residential Area
17. Armour Road Commercial Area
18. River Forest Park

