

# TROOST CORRIDOR

## Environmental Consequences

### Purpose and Need

The purpose of the expansion of BRT within the Study Corridor is to:

- provide service enhancements to existing and potential new riders;
- provide travel time savings for riders;
- increase transit service reliability;
- provide enhanced passenger amenities;
- provide safe and secure transit stations;
- strengthen a positive identity of transit;
- increase system capacity and service levels;
- encourage transit supportive land development; and
- provide high quality transit access to major employment and activity centers

The need for this expansion results from:

- the Study Corridor's transit dependent population's desire for service enhancements;
- the potential to attract new riders;
- the opportunity to support and enhance the reinvestment that is taking place within the Study Corridor; and
- the lack of convenient and timely transit connections from residential areas to employment centers and major activity centers within the Study Corridor;

### PROJECT BACKGROUND

The Kansas City Area Transit Authority (KCATA) in cooperation with the City of Kansas City, Missouri, has studied transit improvement options in the Troost Corridor for many years. Major plans and initiatives include:

- **2001 Central Business Corridor Plan (CBC Plan):** The CBC Plan focused on fixed guideway alternatives for the Main and Troost Corridors. The preferred mode identified in the *CBC* plan for both corridors was light rail transit (LRT). BRT was the preferred mode if light rail transit was found to be financially infeasible. A ballot initiative to establish a sales tax for light rail in both the Main Street and Troost Corridors was defeated by the voters in 2001. Following that vote, the KCATA shifted the transportation focus in keeping with the CBC plan to reviewing options for BRT in the Main Street and Troost corridors. This resulted in planning and implementation of the Main Street BRT project (MAX) in 2005.
- **2004 regional Smart Moves Regional Transportation Plan (Smart Moves):** Smart Moves is a regional plan that identifies several BRT corridors including both the Main Street and the Troost corridors. Smart Moves was officially adopted as the region's transit plan in 2005.

## **STUDY CORRIDOR**

The Study Corridor is centered on Troost Avenue with the following limits:

- **north:** the Kansas City, Missouri Central Business District (CBD);
- **south:** Bannister Road/95<sup>th</sup> Street;
- **west:** Main Street; and
- **east:** US-71 (Bruce Watkins Freeway) and I-435.

Today, local bus service traverses Troost Avenue and provides a connection to the Bannister Mall area, a regional retail center. The Troost Corridor and the Bannister connection are part of the Troost Study Corridor.

## **ON-BOARD SURVEY**

To identify transit needs within the Study Corridor, an On-Board Survey was completed on February 20, 2007 to determine trip origin and destination, trip characteristics and questions about BRT/MAX service. The results of this survey are included within the Planning Report.

## **LAND USE AND ACTIVITY CENTERS**

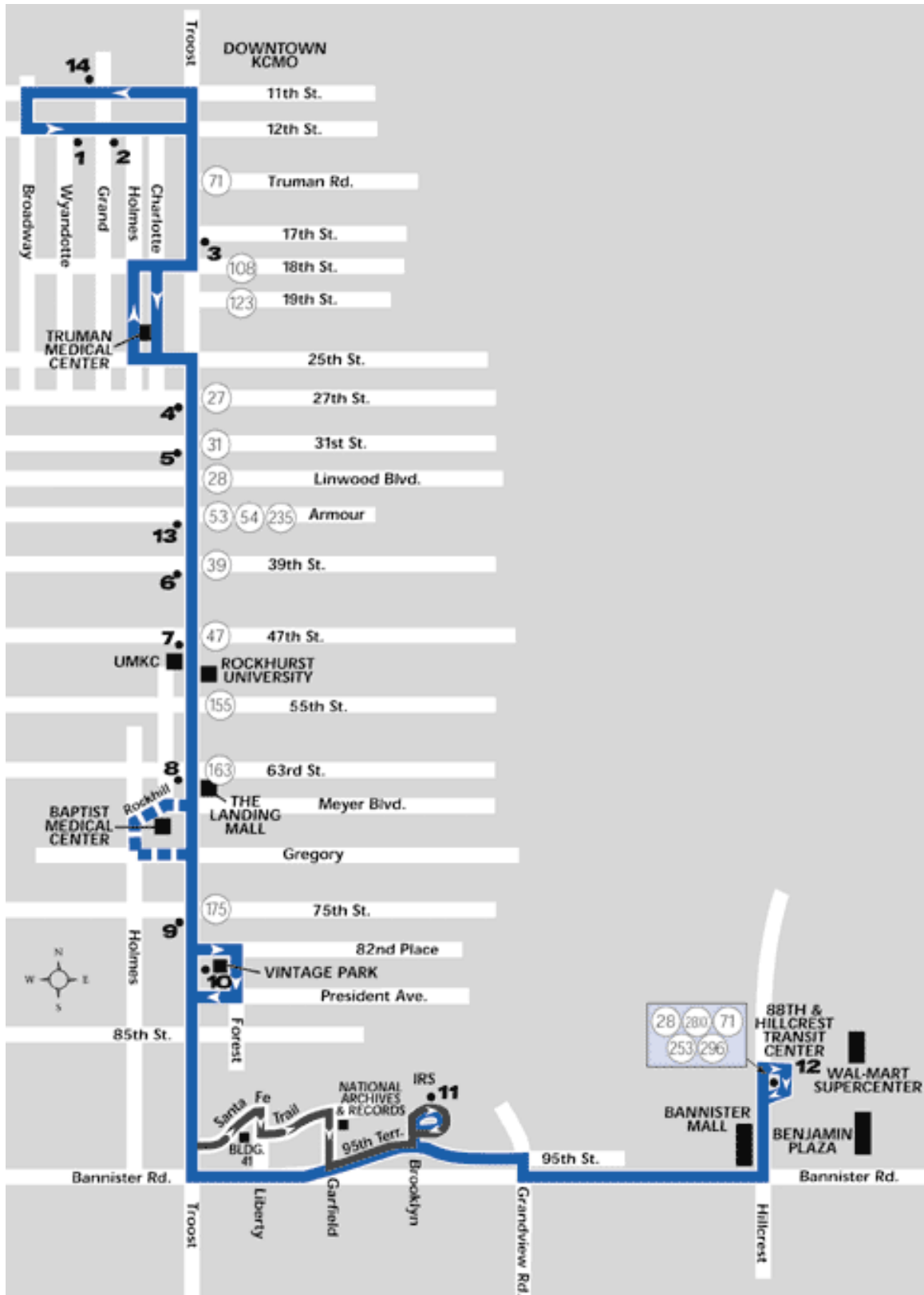
The Study Corridor is in the urban core of Kansas City, Missouri. Population within the Corridor decreased during the 1970s and 1980s as the metropolitan area experienced a high level of suburbanization. Within the past two decades, some corridor districts and neighborhoods have stabilized as reinvestment has occurred. Significant reinvestment is now taking place within the Downtown CBD and adjacent neighborhoods along the Troost Corridor. However, areas within the corridor south of the CBD continue to need substantial revitalization. A full description of uses, activity centers and demographics is included within the Planning Report.

## **EXISTING SERVICE**

The existing Troost local bus route (#25) circulates through the CBD on 11<sup>th</sup> and 12<sup>th</sup> Streets. It operates north-south on Troost between 11<sup>th</sup> and Bannister Road. The route then operates east-west between Troost and Hillcrest, terminating at the Hillcrest Transit Center. This local bus route operates at a 10 to 12 minute frequencies between 4:00 a.m. and 6:00 p.m. and 30-minute frequency from 6:00 p.m. to midnight. On Saturday, the frequency is 15 minutes during the day and 30 minutes in the evening. Sunday service frequency is 30 minutes for both day and evening.

Today, the local route #25 runs between the downtown and Bannister Transit Center in Kansas City, Missouri. Starting on 12<sup>th</sup> Street at Wyandotte Street the route is primarily on either 12<sup>th</sup> Street or 11<sup>th</sup> Street through the downtown, north and southbound on Troost Avenue and through Santa Fe Trail to terminate at the Bannister (IRS) Federal Complex. There is a slight deviation from this route to pass the Truman Medical Center on Charlotte Street as well as a number of deviations depending on the time of day. Thirty percent of the daytime service buses run along Bannister Road and extend past the Federal Complex to the Bannister Transit Center. A full description of this service including hours, frequency, ridership, vehicle requirements and crossing routes is included within the Planning Report.

Figure 1a – Existing Service Local Route #25



## **SERVICE**

Based on the results of the on-board survey that was conducted on February 20, 2007, and existing ridership data, many current customers would benefit from a limited stop service. In addition, current ridership patterns suggest that a local service is needed in the Troost corridor to serve riders whose trips are generally less than two miles in length.

The transit service recommendations for the Troost Corridor are:

- Provide BRT Service: A bus rapid transit service from Downtown to a location between 75th and Bannister would benefit 70% to 80% of the riders in the corridor who are traveling more than two miles for their trip. In addition, these users are typically boarding the current Troost #25 service within two blocks of the recommended station locations.
- Maintain Local Service: Local service is an integral service component to the Troost Corridor.
  - Downtown to Bannister Transit Center
  - Provide direct service along the entire Troost Corridor

## **BRT Route Options**

Many options were identified and evaluated to determine the route that would best serve customers along the Study Corridor. Existing travel patterns, transfers, boardings and alightings, development potential and land use were all factors in determining a final route recommendation. The Corridor was analyzed and route alternatives were generated for the following sections:

- Northern options into Downtown
- Central options between 27<sup>th</sup> Street and 75<sup>th</sup> Street
- Southern terminus options

## **LOCALLY PREFERRED ALTERNATIVE (LPA)**

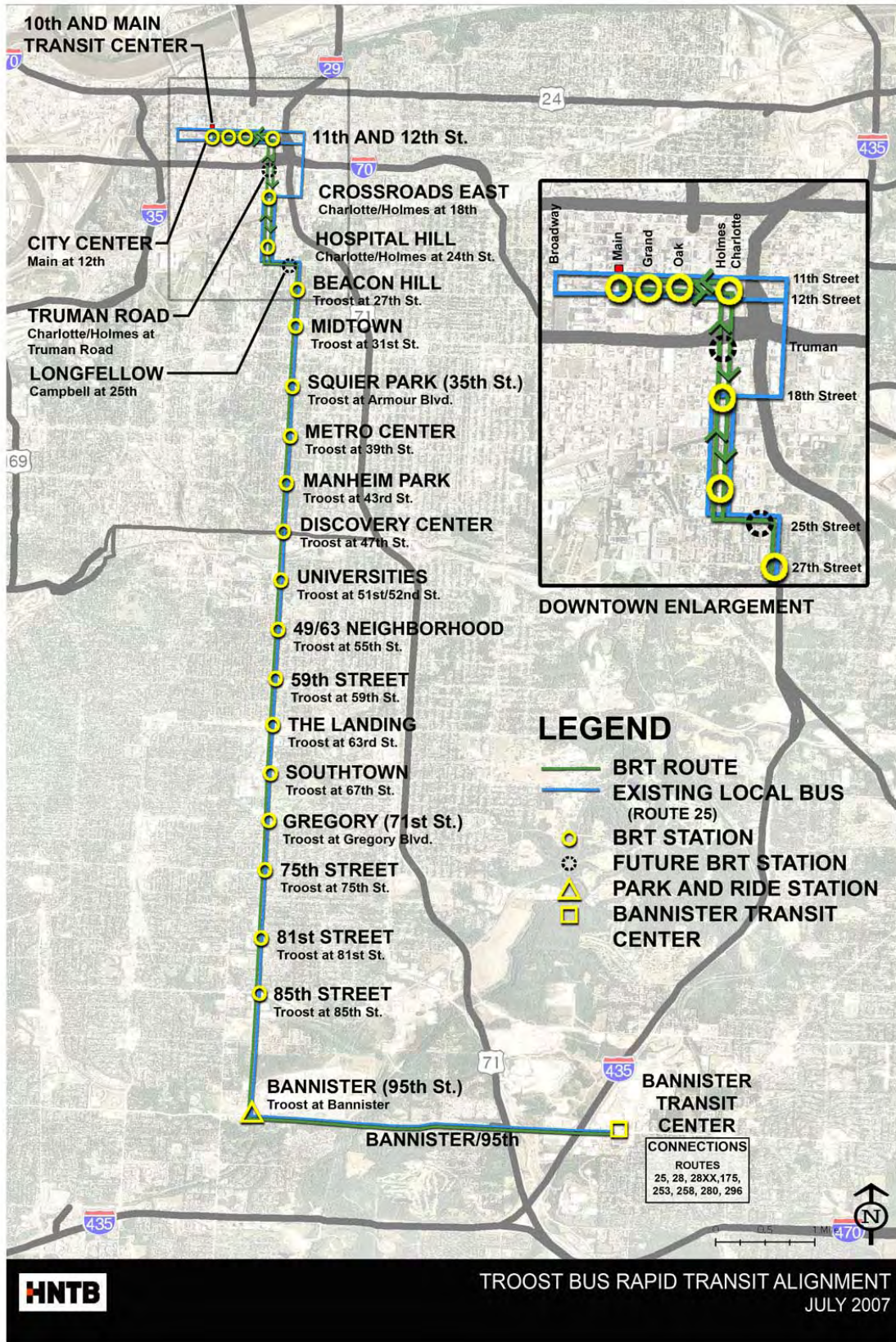
**Purpose and Need/Project Description** - The proposed transit corridor is located in Kansas City, Missouri and extends through the city's central business district from at the north end to 95<sup>th</sup>/Bannister Road and Troost on the south with a continuation to the old Bannister Mall area in the vicinity of Bannister and Hillcrest Road on the east. Specifically, the study corridor is centered on Troost Avenue with the Kansas City, Missouri Central Business District (CBD) as its northern limit, Bannister Road/95<sup>th</sup> Street as a southern limit, Main Street as a western limit and US-71 (Bruce R. Watkins Drive), I-435 and Bannister Mall as eastern limits. This service will be the second MAX street-running BRT route. The Troost BRT will be branded by color and will include real time BRT information at station locations. The general purpose of this Bus Rapid Transit (BRT) project is to improve transit service in the corridor. The Federal share of grant MO-03-0118 is \$24,475,120.

Average daily ridership in the corridor is approximately 7,500.

Troost BRT project improvements include:

- Purchase 13 buses
- New BRT service of 13 miles of which a 1/2 mile is exclusive lane operation during peak hour, peak direction.
- Signal prioritization improvements at 34 intersections
- Construction of 47 bus shelter/stations and associated passenger amenities
- Modifications to an existing maintenance facility at 1200 East 18<sup>th</sup> Street in Kansas City, Missouri
- A turnaround in the vicinity of 85<sup>th</sup> and Troost
- Two park and ride lots at Bannister (95<sup>th</sup> street) and Troost and at Bannister and Drury Road (at the former Bannister Mall)

Figure 1b – BRT Troost Alignment and Stations



**Administrative Record** – The 2007 Kansas City Area Transportation Authority Troost Corridor Environmental Consequences Report is hereby incorporated by reference. An electronic copy of the document is located in the FTA Region VII office project e-file system.

- *Kansas City Walkability Plan*, City of Kansas City, Missouri, March 20, 2003, can be viewed at: <http://www.kcmo.org/planning.nsf/plnpres/walkability>
- *Troost Corridor Planning Study*, Kansas City Area Transportation Authority, August 10, 2007.
- *Regional Smart Moves Regional Transportation Plan (Smart Moves)*, Mid-America Regional Council, 2004
- *The Central Business Corridor Transit Plan (CBCTP)*, City of Kansas City, Missouri, 2001
- *FOCUS Kansas City Plan*, City of Kansas City, Missouri, 1999
- *Troost Bridge Over Brush Creek Hydraulics and Design Report*, City of Kansas City, Missouri May 2006

### **Public Engagement**

The public engagement process for the Troost BRT project included:

- Zone Committee meetings
- Community Advisory Committee meetings
- Public meeting
- Special Briefings

#### ***ZONE COMMITTEE MEETINGS***

The NORTH ZONE COMMITTEE consisted of 11 representatives of neighborhoods, institutions and business surrounding the Troost Corridor, north of 31st St. At their first meeting on Nov. 1, 2006, and a second meeting was held in conjunction with an Advisory Committee meeting.

The CENTRAL ZONE COMMITTEE had 10 members, who lived or worked in the central section of the study corridor, between 31st St. and 75th. They met on November 8, 2006 and April 2, 2007

The SOUTH ZONE COMMITTEE consisted of 11 members, who represented not only neighborhoods and businesses along the Troost Corridor, but also were active in community development issues east of Troost, including the Federal Complex and the Bannister retail area. They met on January 9, 2007 and May 10, 2007,

#### ***COMMUNITY ADVISORY COMMITTEE***

The purpose of the Community Advisory Committee was to learn about, discuss and connect issues along the route and provide the consultant team and ATA informed input for key decisions. It was anticipated that this Committee would meet with the KCATA on three occasions, but they actually met seven times, including a bus tour of the Troost Corridor and the existing MAX line on Main St.

The bus and MAX tour took place on November 29, 2006 over the lunch hour. Participants met at the KCATA, took the Troost 25 to the Metro Center at 39th and Troost and toured the Metro Center facility, then used the 39th Street bus to 39th and Main to visit a MAX station and took MAX to 12th and Main. The tour group then completed the trip back the KCATA on a local service bus. The day was raining and chilly, everyone got to experience the challenging weather conditions that customers encounter.

The COMMUNITY ADVISORY COMMITTEE consisted of 16 representatives, including major City Departments, the Troost Merchant's Association, the Southtown Council, Brush Creek Partners Mid-America Regional Council, the universities and neighborhood leaders. After an orientation and in-depth introduction to Bus Rapid Transit, including an initial tour of the existing Troost route and Main St. MAX, the Advisory Committee reviewed data regarding the Troost Corridor and outlined

goals for the project. The Committee requested more information on origins and destinations, resulting in an on-board survey, completed in February. Committee members attended some of the Zone Committee meetings and included this input in their discussions regarding route alternatives and stop locations. Their input was informed and included several perspectives – users, civic leaders, marketing and the greater community good.

***PUBLIC MEETING***

One open public meeting was held during the planning process to keep the general public informed. This open house was held on the Rockhurst University campus on May 23, 2007.

***BRIEFING MEETINGS***

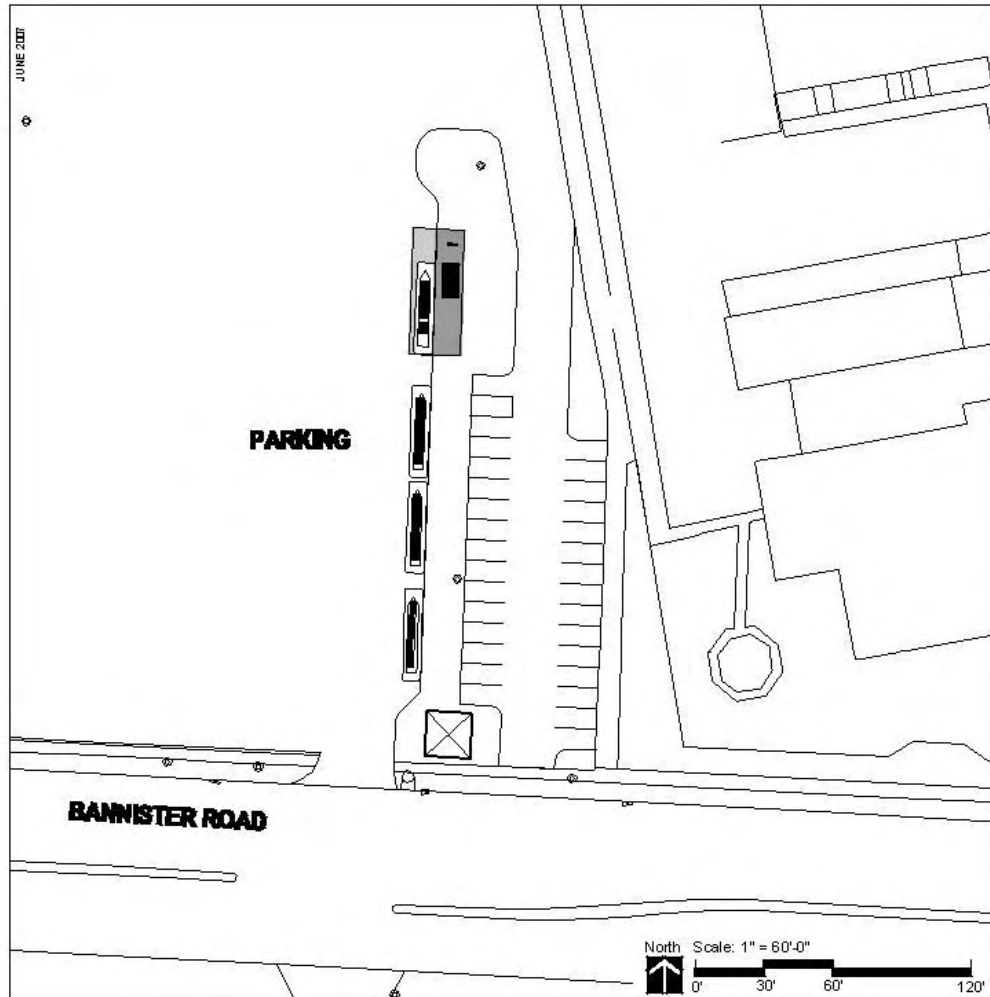
The KCATA and consultants conducted a series of briefing meetings with specific groups, including:

- Kansas City, Missouri City Council
- Kansas City, Missouri Public Works Department
- Kansas City, Missouri City Planning and Development Department
- Kansas City, Missouri Parks and Recreation Department
- ATA Board of Commissioners – 3 updates
- Southtown Council
- Brush Creek Community Partners
- University of Missouri, Kansas City
- Rockhurst University
- Bannister Area / Three Trails CID
- South Kansas City Chamber
- Mid-America Regional Council
- FTA

### Park and Ride Locations

Park and ride facilities will be located on existing parking surfaces and include a shelter, marker, parking for 20-30 vehicles and at select locations a comfort station for drivers.

Figure 1c – Bannister (95<sup>th</sup> Street) and Troost Park and Ride



#### STATION COMMENTS

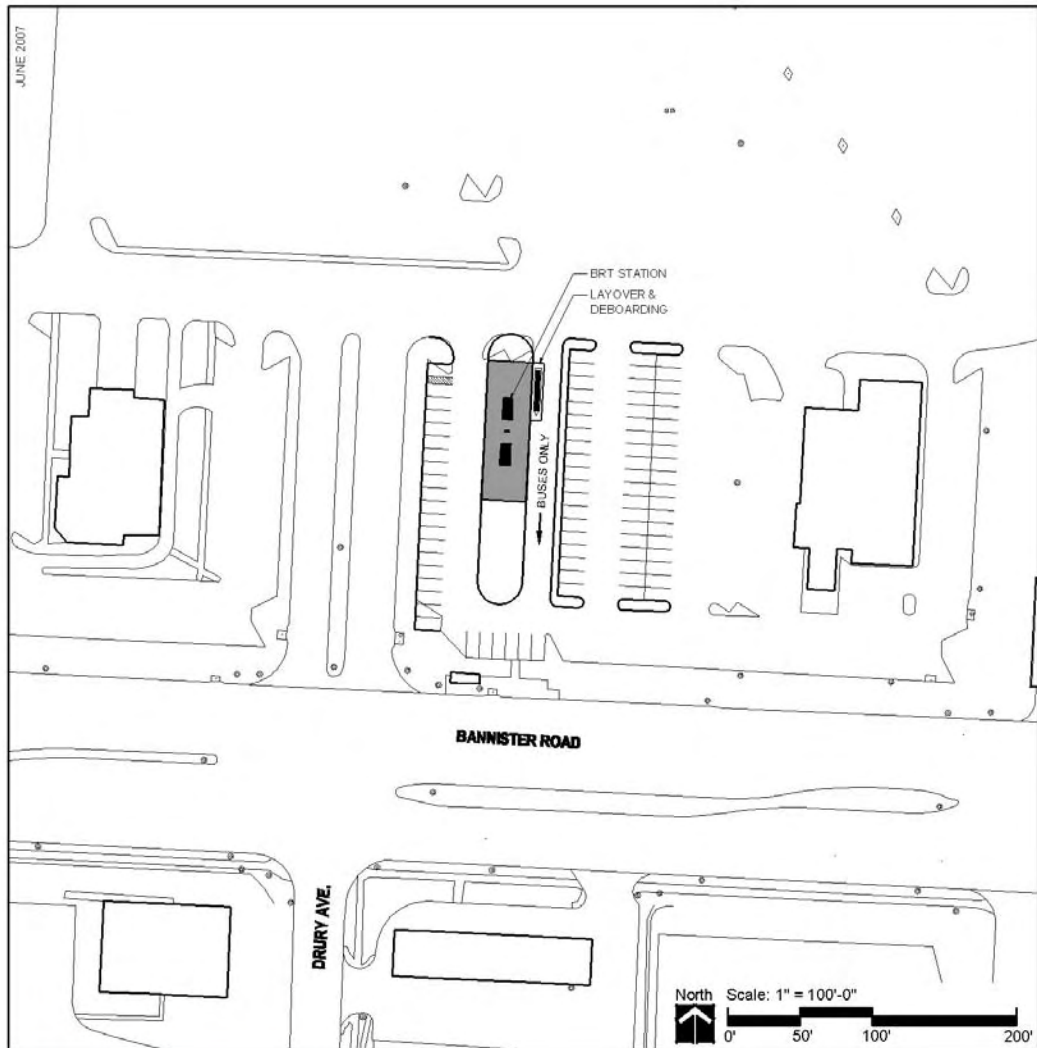
- Located within existing parking lot
- Use existing entry and exit



PARK AND RIDE

	Troost BRT <b>Bannister</b>
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Figure 1b – Bannister Mall Park and Ride



**STATION COMMENTS**

- Located within existing parking lot



**PARK AND RIDE**



Troost BRT  
**Bannister Mall**

## **Environmental Consequences**

### **1. Land Use Impacts**

Originally, land use along the Troost Corridor was residential, known as “Millionaire’s Row” in the late 19th century between Truman Rd. and Armour Blvd., showcasing large and ostentatious Victorian Homes. However, between the post-Civil War era and 1947, Troost also served as the western boundary of Kansas City’s historic African-American district, housing as many as 27,000 residents within a one square mile area that was hemmed in by restrictive covenants and deeds on surrounding properties. Vestiges of this segregation are still visible and recognized in the community, as the demographic data illustrates. Troost has been known locally for years, even since the 1947 Supreme Court decision striking down the 27th Street “color line”, as the racial dividing line in Kansas City, Missouri. As black residents began to move south and predominantly east in the decades after World War II, practices such as redlining and block-busting led to neglect of many of the neighborhoods along Troost Ave. The original neighborhood shopping areas at the commercial intersections in midtown were abandoned or left to survive with few customers. The 1968 riots after Martin Luther King’s assassination sealed the fate of most of the commercial properties along Troost north of 47th St.

In the 1980’s and 1990’s, several community efforts to revitalize the Troost Corridor have begun to have some impact on the community. The City’s Troost Corridor Plan, completed in 1999, with significant public involvement provided a masterplan and revitalization framework for redevelopment. New businesses, an art studio, expansions of major institutions such as the Nazarene Church Publishing facilities and Operation Breakthrough’s Day Care Facility, the location of the Kansas City Health Department, the new Western Missouri Mental Health facility, additions to Truman Medical Center and the UMKC Schools of Medicine, Nursing and Dentistry, The Beacon Hill Neighborhood Redevelopment, the Stowers Institute for Cancer Research, the Kauffman Foundation Headquarters, new drug stores and campus improvements at both UMKC and Rockhurst University have all added value and momentum to the redevelopment of Troost. These developments, coupled with neighborhood revitalization along both the east and west sides of the corridor have significantly improved the area’s character and stability.

### **EXISTING LAND USE**

The Troost BRT Corridor is in a built urban environment. With very few exceptions the corridor consists of open commercial zoning, approximately one-half block deep on either side of Troost Ave. Zoning at the designated park and ride lots is M2b (Heavy Industrial) at the Troost and Bannister site and C3a2 (Intermediate Business) at the Bannister and Drury site. Although, there are a few industrial zoned properties and Urban Redevelopment Plans scattered along the corridor. The current zoning is intended to allow large scale commercial development serving regional trade areas and to permit development and continuance of office, retail trades and commercial services. These two zoning classifications are part of the City’s cumulative zoning ordinance. Uses that include park and ride lots are allowed in both of these districts. The following are general uses allowed by the zoning classifications:

#### **Professional uses:**

- Artist studios
- Clinic, for people only
- Office buildings
- Photographic studios

#### **Retail and personal uses:**

- |  |                           |
|--|---------------------------|
| Aluminum or metal collection centers                     | Bars and cocktail lounges |
| Bakery and Pastry shops                                  | Barber shops              |
| Banks, savings and loan and other financial institutions | Bicycle repair shops      |
|  | Bookbinding               |

Book stores  
Business and commercial schools  
Clothing or ready to wear stores  
Confectionery stores  
Commercial greenhouses  
Dancing schools  
Diaper services  
Drugstores  
Dry goods or notions stores  
Dyeing and dry cleaning plants and shops  
Electrical appliance repair shop  
Eleemosynary  
Feed stores  
Florist or gift shops  
Film exchanges  
Frozen food lockers  
Furniture homes or stores  
Funeral homes  
Grocery, fruit or vegetable stores  
Grooming for small pets  
Hardware stores  
Ice delivery stations  
Jewelry stores  
Laundromats

Meat markets or delicatessens  
Meat processing  
Media store  
Motels  
Music studios  
Newspapers, job printing, lithographing and publishing  
Nightclubs or taverns  
Package liquor store  
Pet shops  
Photographing print shops  
Printing and reproduction services  
Plumbing or sheet metal shops  
Recreation centers  
Restaurants  
Shoe stores and repair shops  
Sign painting and sign shops  
Stationary stores  
Tailor shops  
Taxidermy  
Trade schools  
Travel agencies  
Video stores

**Automobile related uses:**

Automobile or trailer sales  
Auto body shops  
Brake lining, only installation and repair  
Bus stations for pickup and discharge only  
Carwashes  
Drive-in businesses  
Drive-in restaurants  
Drive-in theaters  
Garages for passenger vehicles parking and repair

Parking stations for trucks and buses  
Public garages  
Public parking facilities  
Service stations  
Street car and bus barns  
Taxi cab businesses  
Tire and battery stores  
Used car sales lots or trailer sales garages  
Wheel alignment shops

**Distribution and warehouse uses:**

Bakeries  
Bottling works  
General distribution and wholesaling  
Manufacture of articles to be sold at retail on the premises only

Storage  
Transfer and storage offices or warehouse  
Wholesale uses

**Miscellaneous uses:**

Armories  
Battery stations  
Cabinet and carpenter shops  
Catering or food preparation businesses  
Commercial radio and television broadcasting stations or transmitting stations or towers  
Fiestas and street fairs  
Heating and cooling plants  
Laundries

Public utility stations, substations or terminals  
Short term loan establishments  
Small animal hospitals  
Telephone exchange  
Tourist camp and motels  
Wireless communications facilities

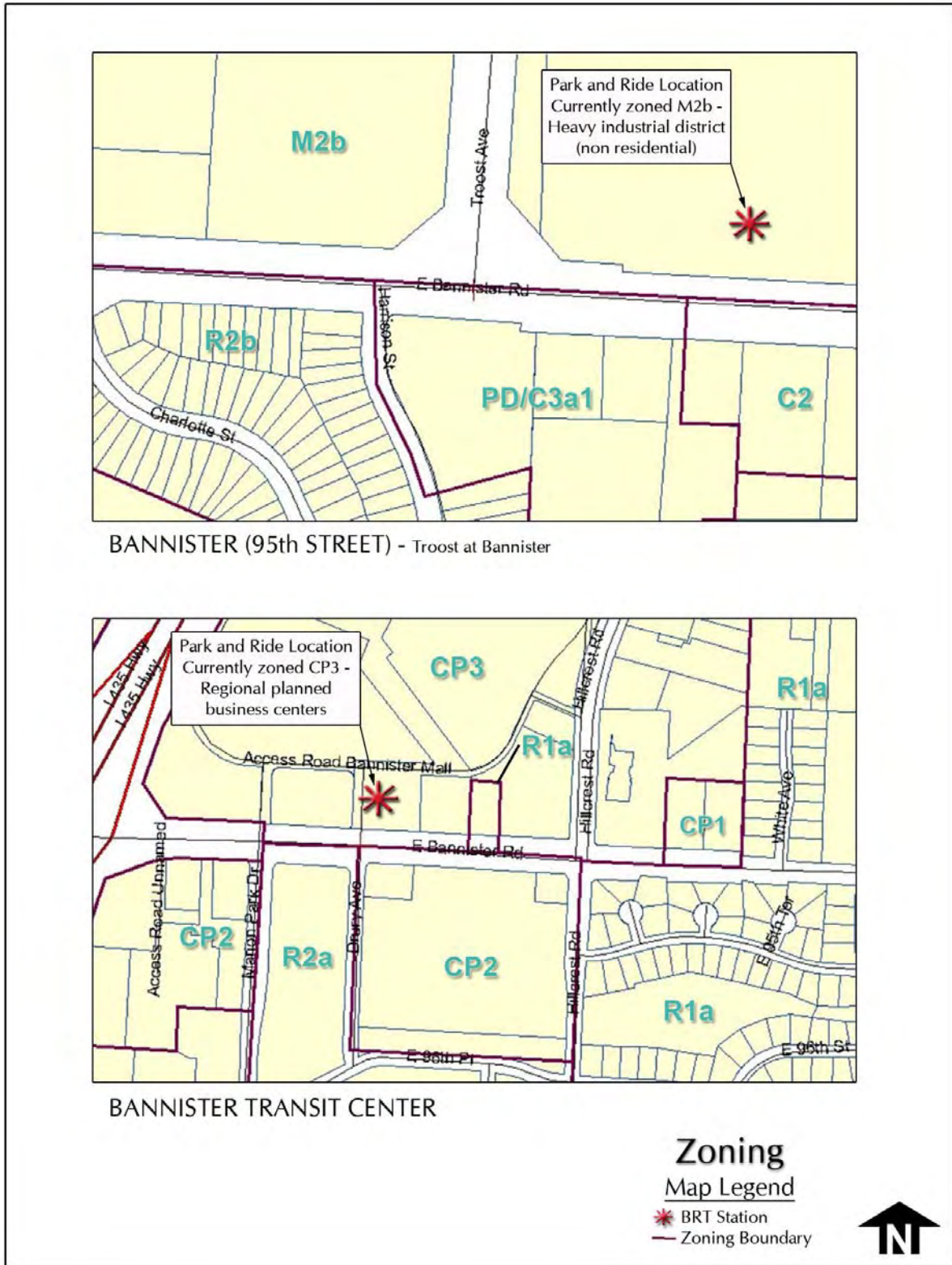
There are encouraging new developments, but the thirteen mile long corridor from downtown to Bannister and Drury. still contains vacant properties, gasoline stations, used car dealers, apartments in various conditions, fast food restaurants, neighborhood retail, several public and private schools and pockets of residential Adjacent land use is primarily residential, with the exception of downtown, the Hospital Hill area, the Kauffman Foundation and the UMKC and Rockhurst University properties.

The selected BRT would have the same effect on existing land use along the majority of the corridor, with the exception of the Troost alternative north of 22nd St. This alternative would pass over a connector bridge with no land use on either side and then pass through a low-activity zone with few residents and businesses between 19th Street and 11th Street. The ATA facility at 18th and Forest Ave. would be well-served by this route. All three alternatives would have little impact on existing land use patterns. The availability of more efficient bus transit may make individual properties more attractive to existing or prospective tenants. It would likely not have large scale land use impacts which are associated with fixed guideway systems, but it certainly will support the momentum of positive land use changes, encouraging investment and addressing economic justice issues related to employment destinations in the busiest transit corridor in the city.

No zoning changes are needed and no land use is being changed. Bus stops and shelters are located on existing street and sidewalk rights-of-way at major intersections.

There will be no acquisition in fee simple with the exception of the bus turn around and two park and ride locations. The turn around is located at 85<sup>th</sup> Street and Troost and the Park and rides are located at Bannister (95thStreet) and Troost and Bannister and Drury (Bannister Mall). Property is expected to be donated and no relocation actions will be necessary for the Troost BRT project. Limited permanent easements and temporary construction easements may be required.

Figure 2 – Zoning at Park and Ride Locations



## **FUTURE LAND USE**

BRT on Troost presents some exciting opportunities to support new redevelopment efforts along the corridor and those currently in the planning stages. The selected alternative will have a positive impact on the Beacon Hills redevelopment project at 27th and Troost, which plans approximately 250 new market rate homes. The planned alternative turns west on 25th St., with a stop at Campbell St., where new student housing and the School of Dentistry will be completed by UMKC. Turning north again at Holmes, the route will directly access Truman Medical Center and the various support facilities at Hospital Hill, providing a direct and efficient connection between UMKC's Volker campus in midtown and its facilities at Hospital Hill. As the preferred route then stays on Holmes north toward downtown, it passes through the east Crossroads district, an old warehouse area between Oak St. and Troost that is beginning to see new life for urban artists, galleries, lofts, entrepreneurs and restaurants. BRT access through this newly developing area will be an asset. At approximately 11th and Holmes, the preferred route will pass directly by the proposed East Village mixed use project that plans a signature office building, new downtown housing and possibly additional government offices. This route serves the government district (with over 10,000 employees) on the east side of downtown, before turning west to serve the financial and entertainment districts.

The timing of the installation of the BRT System would be beneficial to the design of these new developments, possibly leading to some coordinated development at or adjacent to stations, but also to augment the rapid redevelopment activity occurring in downtown Kansas City, better serving the city's east side residents. Besides the opportunity to impact these key developments, the provision of more efficient bus service would likely make existing properties more attractive to those who use and favor the BRT service. The service to and from downtown via the Holmes/Charlotte route reinforces the walkability of the existing neighborhoods for transit use. The service to and from downtown via the Holmes/Charlotte route reinforces the walkability of the existing neighborhoods for transit use and directly serves the Hospital Hill campus which is home to Truman Medical Center one of the regions major trauma centers and a significant health care provider to those without health care insurance; the UMKC Schools of Pharmacy, Medicine and Dentistry; Missouri Western Mental Health Clinic; Children's Mercy Hospital and the City of Kansas City, Missouri Health Department. Troost Avenue is east of all of these uses and an express service like bus rapid transit would not directly serve all of these institutions and major employers.

## **2. Farmland Impacts**

There are no farmland impacts within the corridor. The route is in an urban environment and is developed.

## **3. Social and Economic Impacts**

### **A. POPULATION AND EMPLOYMENT**

The FOCUS Kansas City Plan and the Alternatives Analysis report dated September 15, 2006 provided much of the social and economic background information for these sections. The population of the Troost Corridor was demonstrated to be within the highest population density of Kansas City, at approximately 6,400 people per square mile. This combination of high residential density, such as the Hyde Park, Manheim Park, Squier Park and 49-63 Neighborhoods, and high employment density, such as the Downtown Loop, Crossroads and Hospital Hill makes the Troost Corridor one with the highest potential for transit improvements to enhance and serve the work trip.

Overall, the residential density has declined somewhat since its peak in 1960. However, new residential areas, previously classed as commercial, such as the loft residential trend in Midtown and Downtown, are bringing residents back into the city. The population, which has declined overall, is expected to stabilize and increase given new housing opportunities in the northern portion of the Troost Corridor.

The Troost Corridor connects many of the major employment centers in Kansas City. These include the Downtown Loop, the Crossroads area, Hospital Hill, UMKC and Rockhurst University, and the institutional uses near Brush Creek. These employment centers and other business along the corridor total over 200,000 jobs within one mile of the Troost Corridor.

**I. No-Build Alternative**

There would be no impact from the No-Build Alternative.

**II. Build Alternative**

The Build Alternative would have the effect of making the work trip more convenient for the area's residents and enhance the desirability of the Troost Corridor for a residential and work location. Locating within the Troost Corridor would be considered important if access to an automobile is limited or by preference to avoid making a work trip by automobile. Major institutional and professional services uses along this corridor add to the desirability of enhancing transit operations.

**B. HOUSING AND NEIGHBORHOODS**

Kansas City is often described as a community of neighborhoods. During the development of the FOCUS Kansas City Plan, thirty neighborhood districts were identified as being along or in proximity to the BRT Troost Corridor, much of which corresponds to the City Council Districts 3, 4, 5 and 6. The residential neighborhoods are considered to be good quality and a desirable location for urban reinvestment. Many young professionals are moving to the neighborhoods for their amenities, quality, style of housing choices, and proximity to work and entertainment centers.

The FOCUS Plan discussion of the area which includes the Troost Corridor noted fewer persons per household than previous years and more non-family households. These non-family households include the younger single adults moving into the area for the urban lifestyle. The portion of the corridor south of Hospital Hill includes more traditional single family residential neighborhoods and the families who are a target component of the work trip ridership of the Troost Corridor.

**I. No-Build Alternative**

This alternative would have no impact on housing and neighborhoods.

**II. Build Alternative**

The Build Alternative would have no significant impact on housing and neighborhoods. The BRT route could enhance some localities for convenience to the work trip rider but would not have an appreciable effect on neighborhood density or composition.

**C. COMMUNITY FACILITIES AND SERVICES**

The Troost Corridor includes proximity or direct access to many community facilities, churches, child care center, institutions and health care facilities and hospitals. Schools are located nearby, but local bus service would be more appropriate for these, as these destinations are generally not peak period trips. Public service and emergency facilities, such as fire stations and police stations, are located along nearby transportation corridors.

**I. No-Build Alternative**

The No-Build Alternative would have no impact on community services and facilities.

## **II. Build Alternative**

The Build Alternative would have no impact on community facilities and services. However, the Build Alternative would reduce the time needed to access these facilities.

## **D. PARKLAND AND RECREATIONAL FACILITIES**

Kansas City has a well developed Parks and Recreation system. The Troost Corridor passes by some of the parks including Brush Creek Park (Thomas J. Kiely Park) and Brush Creek Parkway. Brush Creek Park is along both sides of Brush Creek and is crossed by the Troost Avenue Bridge.

### **I. No-Build Alternative**

The No-Build Alternative would not affect parks and recreational facilities.

### **II. Build Alternative**

The Build Alternative would not affect the city parks and community recreational facilities along the BRT Troost Corridor. Buses presently operate on the streets to be used by the BRT service and this would continue. Bus operations would increase during the morning and evening commute periods, which does not generally coincide with the peak periods for park or recreational facility usage.

The transit improvements provided by BRT provide enhanced alternative transportation options for those wanting to use the park facilities. Indeed, the original philosophy of the streetcar and boulevard system was to provide access to parks.

## **E. ENVIRONMENTAL JUSTICE**

The Central Business Corridor Transit Plan (CBCTP), 2001, developed a number of exhibits which included race and income by Census Tract. The BRT Troost Corridor passes directly through census tracts which vary from greater than 80 percent or more white to those that are 60 percent or more minority. The BRT service would be available to a similar number of minority residents as it would non-minority residents. Income levels again show similar results. There are census tracts where the income levels are less than \$20,000 to those that are \$75,000 or more. There are nearly equal amounts of low, moderate, and high income residents in the BRT Troost Corridor. *There is a larger percentage of low-income and minority residents to the east of the BRT Troost Corridor. These residents are already well served by public transit but this project will provide an additional benefit allowing for the use of east-west connectors to use the BRT Troost Corridor. Existing service will not be reduced as a result of this project.*

The public involvement program included meetings with neighborhood residents, neighborhood associations, civic and community groups during several periods. These include the public meetings for the FOCUS Kansas City Plan, the CBCTP Plan 2001, and currently the BRT meetings which included several meetings with residents, stakeholders and other officials.

### **I. No-Build Alternative**

The No-Build Alternative would have no impact on environmental justice considerations.

### **II. Build Alternative**

The BRT project would have no displacements and no measurable change to current KCATA service to predominately low income or minority neighborhoods. For those low income and minority residents who use bus service for their work trips, the BRT would allow for better service along the corridor in both directions. The new station design provides an attractive and clean image. The

reduced stops will cut down on noise, vibration, and pollution in the corridor. BRT would not have a negative effect in removal of bus service from any existing route.

#### **4. Relocation Impacts**

There are no relocation impacts within the corridor.

#### **5. Transit Oriented Development**

##### **East Village, 12th and Holmes**

A multi-block redevelopment plan known as East Village has been discussed with property owners, business owners, developers and the City of Kansas City, Missouri over the past two years. This plan includes the new headquarters for JE Dunn Construction at 11th and Locust. In addition, new residential, retail and office uses have been evaluated as part of the redevelopment plan. Opportunities exist to coordinate with the City to integrate transit service into the proposed development along Holmes, Charlotte, 11th and 12th Streets.

##### **Hospital Hill and University of Missouri Kansas City (UMKC)**

UMKC officials anticipate expanding their research presence on the Hospital Hill campus as well as providing new, on-campus, student housing. These new facilities would be located along 25th Street between Holmes and Troost which is along the recommended route for the Troost bus rapid transit line.

##### **Beacon Hill**

Planning for the redevelopment of the Beacon Hill neighborhood has been underway for over a decade. Joint development opportunities exist at the corner of 27th and Troost where the developers and the City have purchased property for redevelopment. In addition, Route 27 crosses at this intersection and provides transfer activity.

##### **University of Missouri Kansas City (UMKC) 47<sup>th</sup> to 55th**

UMKC has recently updated their campus master plan and the plan anticipates new investment along Troost Avenue. UMKC officials have expressed interest and support the Troost bus rapid transit line and KCATA officials have met with UMKC to identify some potential joint use options.

##### **The Landing (63<sup>rd</sup> Street and Meyer Boulevard)**

This aging and economically challenged retail shopping area has seen significant disinvestment in recent years. The Landing is within a TIF redevelopment district that Research Medical Center organized about 10 years ago. New, single use retail stores such as O'Reilly Auto Parts and Walgreens have built new facilities along Troost taking advantage of the TIF District. However, the parcels on which The Landing is located on are yet to be considered for redevelopment. Catalysts, like Troost BRT may provide additional interest in the property.

#### **I. No-Build Alternative**

Existing consideration to transit oriented development will remain the same under the No-Build Alternative.

#### **II. Build Alternative**

With better mobility, accessibility, renewed interest and increased users, the BRT project could stimulate interest in redevelopment at several locations along the corridor as well as providing for transit oriented development opportunities.

## **6. Considerations Relating to Pedestrians and Bicyclists**

The BRT system itself encourages walkability. Walkability plans include information regarding engineering safety applications such as placement and location of crosswalks, sidewalk treatments, and the importance of connections. In compliance with the Kansas City Walkability Plan Adopted by City Council on March 20, 2003 by Resolution Number 030211 the BRT Troost project will improve pedestrian safety, provide a better walking experience and eliminate the possibility for pedestrian injuries by providing adequate maintenance to the improved areas. All aspects of the shelter, marker and surrounding improvements will be ADA accessible.

Bicycling provides citizens with another mode of affordable transportation. The BRT buses are fitted with bike carriers to allow users to take their bikes with them for a portion of their trip or to connect from one location to another that may not be linked by bikeways. As indicated on the KCMO bikeway plan, 11th Street, 12th Street, Charlotte and Holmes are designated bikeways. The Troost corridor crosses six on-street bikeways at, 29th St., 30th St., Armour Boulevard, 64th Street, Meyer Boulevard, and 95th Street and 1 off-street bikeway at the Trolley Track Trail (85th Street). The crossings are key cross connection points to many destinations within the city.

Copies of the KCMO walkability plan can be viewed at:  
<http://www.kcmo.org/planning.nsf/plnpres/walkability>

### **I. No-Build Alternative**

Existing consideration to pedestrians and bicyclist will remain the same under the No-Build Alternative.

### **II. Build Alternative**

The BRT project will increase walkability and mobility in the corridor, and improve the walkways, streets, curbs and ADA access.

## **7. Air Quality Impacts**

### **A. AIR QUALITY STANDARDS**

The National Ambient Air Quality Standards (NAAQS) are designed to protect the public health and welfare from the adverse effects of air pollution. National standards have been established for ozone (O<sup>3</sup>), carbon monoxide (CO), nitrogen dioxide (NO<sup>2</sup>), particulate matter (PM), sulfur dioxide (SO<sup>2</sup>), and lead (Pb).

Urban areas that violate one or more of these standards are classified as “non-attainment areas” by the U.S. Environmental Protection Agency (U.S. EPA). The State of Missouri, in cooperation with the Mid-America Regional Council (MARC), has developed a State Implementation Plan (SIP) that identifies how the national air quality standards will be attained and maintained.

### **B. EXISTING AIR QUALITY**

The Kansas City area is currently in attainment of the NAAQS for all criteria pollutants. The region was an ozone maintenance area under the former one-hour ozone standard. In 2004 EPA implemented a new eight-hour ozone standard that is more protective of public health. The Kansas City region was designated an attainment area under the eight-hour standard; however, EPA required the states of Kansas and Missouri to develop an eight-hour ozone maintenance plan for Kansas City because the region was classified as a maintenance area under the old standard. These plans have been submitted to EPA and are expected to be approved by the end of summer 2007.

Photochemical modeling completed in 2004 suggests that region will struggle to stay in compliance with the eight-hour ozone standard. At this writing, the region appears likely to experience a violation of the eight-hour ozone standard in 2007 under typical summer weather conditions. If a violation occurs, Kansas and Missouri are expected to require new controls on area power plans and industrial boilers. The states would also limit idling by heavy-duty diesel vehicles.

## **C. QUALITATIVE ASSESSMENT**

### **I. No-Build Alternative**

Existing air quality will remain the same under the No-Build Alternative.

### **II. Build Alternative**

The BRT project is not expected to have a negative effect on air quality. An additional five buses will be added for peak hour service to the service already existing in the corridor. Faster and more frequent service will attract new riders to transit, leading to some reduction in auto trips and emissions. Traffic signal priority and fewer stops will result in lower BRT emissions compared with current bus service. Buses used on the BRT route will run on ultra-low sulfur diesel and will comply with EPA's 2007 Highway Rule. Ultra-low sulfur diesel engines are cleaner to operate and produce lower emissions than the current bus fleet.

## **8. Noise Impacts**

Traffic noise, specifically transit-vehicle noise, is the primary noise and vibration source of concern relative to this analysis. Sources of general traffic noise and vibration include vehicle operating noise, tire noise made by rubber-tired vehicles, noise generated by changes in traffic volumes (i.e., differences between peak and non-peak period noise levels), and noise generated by vehicle equipment that continues to run after a vehicle is stopped or parked (e.g., fans or radiators, air conditioning pumps, etc.). Specific sources of transit-vehicle noise include vehicle operating noise and exhaust noise from diesel bus engines, noise caused by diverted or increased traffic due to a transit improvement, and noise from vehicle equipment that continues to run while a vehicle is stationary.

### **A. EXISTING NOISE LEVELS**

Acoustical or noise monitoring of existing conditions within the Corridor were conducted as part of the Corridor Transit Study in 1994. Each monitoring site was chosen to represent a typical noise condition for a specific area of the corridor (i.e., near a sensitive receptor such as a residence, school, medical facility, church, etc.). Daily traffic volumes along the Troost Avenue section of the BRT route have declined by about 31 percent since that analysis was completed. Although it is anticipated that traffic-related noise levels have declined along with the decline in traffic volumes, the Troost Avenue corridor remains a major urban arterial street with the associated traffic noise sources.

## **B. QUALITATIVE ASSESSMENT**

### **I. No-Build Alternative**

Existing noise and vibration levels will remain the same under the No-Build Alternative.

### **II. Build Alternative**

Construction activities associated with the implementation of the Build Alternative will result in temporary increases in noise and vibration levels in the immediate vicinity of the construction zone for the duration of construction activities. Those increases are not anticipated to result in significant noise or vibration impacts.

The addition of five peak hour BRT buses to the current service levels in the corridor will not have any impact on noise quality. The addition of these buses will simply bring bus service levels to those provided in this corridor 10 years ago. In addition, although total traffic volumes along the Main Street section of the BRT route have declined in the past three years, 10 peak-hour transit vehicles make up an extremely small portion of overall traffic on this major arterial street.

## **9. Water Quality Impacts**

### **A. SURFACE WATER QUALITY**

Brush Creek, located at 49<sup>th</sup> and Troost, is the only stream that falls within the project area. Brush Creek is a tributary of the Blue River. The city plans to rebuild the existing bridge at roughly 49<sup>th</sup> and Troost over brush creek. The City's actions are pursuant to an environmental analysis, **insert document and date published**. Some pedestrian improvements related to this reconstruction may be part of this project. The entire route and all proposed improvements are elevated above the 100 year floodplains.

#### **I. No-Build Alternative**

The No-Build Alternative would have no impact on surface water.

#### **II. Build Alternative**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property and limited construction outside of the ROW for the park and ride locations. In most cases the park and rides will be developed on existing parking surface. All local and State stormwater requirements will be met for all development. No bus shelters would be built near Brush Creek. BRT would have no impact on drainage or on Brush Creek itself.

### **B. GROUNDWATER**

The principal source of present and future ground water supplies for Jackson County is the Missouri River alluvium. Water for Kansas City comes directly from the Missouri River. The water table in the Missouri River alluvium generally is between 5 and 25 feet below the surface of the floodplain. The alluvium reaches a maximum of 100 feet in thickness and averages between 80 and 90 feet.

#### **I. No-Build Alternative**

The No-Build Alternative would have no impact on groundwater.

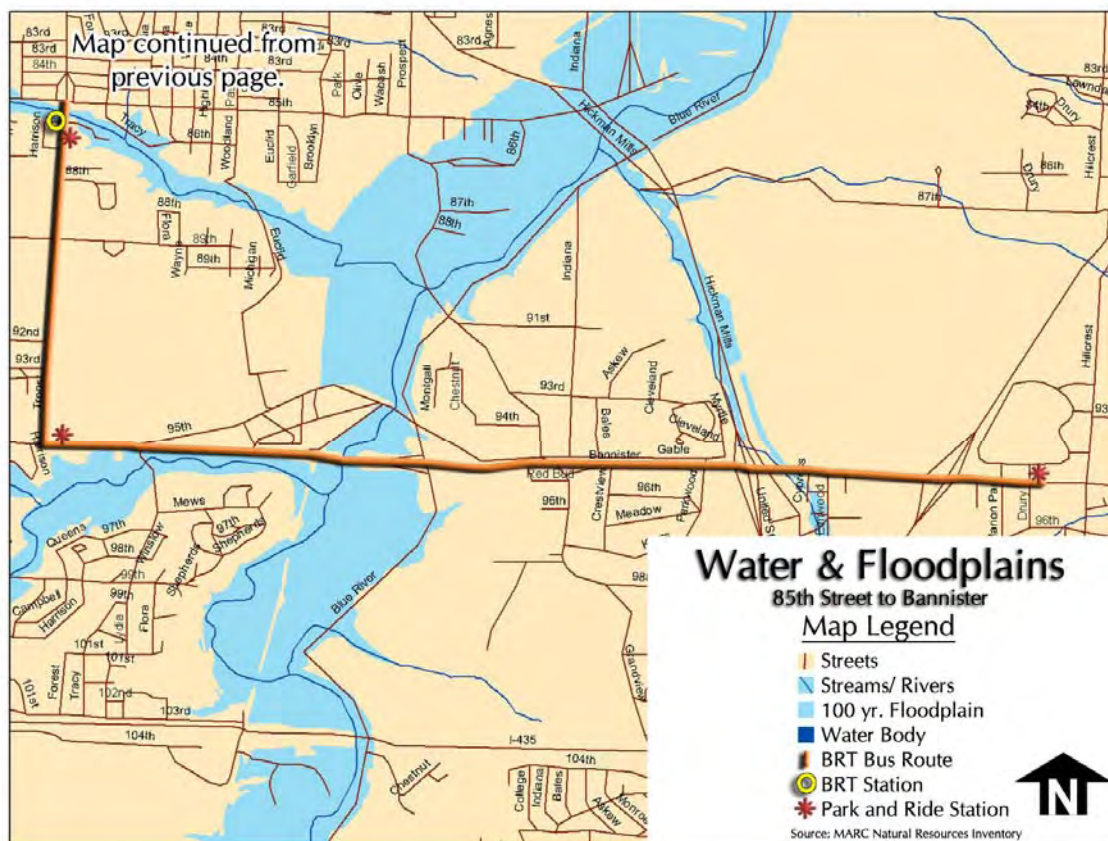
#### **II. Build Alternative**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property and limited construction outside of the ROW for the park and ride locations. In most cases the park and rides will be developed in or on an existing parking surface. All local and State stormwater requirements will be met for all development. BRT would have no impact on groundwater.

Figure 3a – Floodplain and Stations



Figure 3b – Floodplain and Stations



## 10. Permits

There are no Federal or DOT permit impacts within the corridor. Standard city construction permitting would apply. A stormwater permit from MDNR/KCMO will be required for any land disturbance greater than 1 acre.

## 11. Wetland Impacts

In most cases the park and rides will be developed in or on an existing parking surface. All local and State stormwater requirements will be met for all development. BRT would have no impact on groundwater. There are no wetland impacts within the corridor.

## 12. Water Body Modification and Wildlife Impacts

In most cases the park and rides will be developed in or on an existing parking surface. All local and State stormwater requirements will be met for all development. BRT would have no impact on groundwater. There are no water body modifications or wildlife impacts within the corridor.

## 13. Floodplain Impacts

### A. FLOODPLAINS

The Missouri River floodplain is one of the major physiographic areas in Jackson County. It is in the northern part of the county and ranges from less than ¼ mile to more than 3 miles wide. Most of the floodplain is level or nearly level. The silty and sandy soils generally are close to the river, and the more clayey soils generally are closer to the uplands. A portion of the project corridor falls within the 100-year floodplain.

The entire route and all proposed improvements are elevated above the 100 year floodplains (See section 9A of this document).

Note: Information about the Troost BRT and a map of the flood plain was sent to Ms. Jane Beetem Missouri Department of Natural Resources.

**I. No-Build Alternative**

The No-Build Alternative would have no impact on floodplains.

**II. Build Alternative**

None of the proposed BRT route is within a floodplain. The route will cross over Brush Creek on an existing bridge used by existing buses. No changes are being made to the bridge as part of this project except for possible pedestrian improvements. HNTB prepared a study of the bridge in May of 2006 titled “Troost Bridge Over Brush Creek Hydraulics and Design Report”. The report indicates that the roadway is not in the Floodplain. State and local stormwater management requirements will be met for all parking areas.

**14. Wild and Scenic Rivers**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property and limited construction outside of the ROW for the park and ride locations. There are no wild and scenic river impacts within the corridor.

**15. Coastal Barriers**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property and limited construction outside of the ROW for the park and ride locations. There are no coastal barrier impacts within the corridor.

**16. Coastal Zone Impacts**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property and limited construction outside of the ROW for the park and ride locations. There are no coastal zone impacts within the corridor.

**17. Threatened or Endangered Species**

**A. VEGETATION AND WILDLIFE**

Vegetation located within the corridor is made up of planted materials used for landscaping and aesthetic purposes. Vegetation is maintained as manicured lawns or park areas on developed properties. There is virtually no native vegetation anywhere in the BRT Troost Corridor. Wildlife present is generally of a type that can coexist in a dense urban area, and the limited parks and residential areas

of the BRT Troost Corridor. Small animals such as rabbits and squirrels can be found most places where lawns or trees are found. Avian species are well represented, especially along the Missouri River, and south of Brush Creek, to the end of the BRT Troost Corridor.

### **I. No-Build Alternative**

The No-Build Alternative would have no impact on vegetation and wildlife.

### **II. Build Alternative**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed urban environment, with no construction on undeveloped property. There may be some removal of landscaping along the corridor where the bus shelters are located, but landscaping would be replaced. The Build Alternative would have no impact on vegetation and wildlife. The following is a list of threatened and endangered species of Missouri. None of these animals or their habitat will be impacted by the project development.

#### **Threatened and Endangered Animals of Missouri:**

Bat, gray ([\*Myotis grisescens\*](#))  
Bat, Indiana ([\*Myotis sodalis\*](#))  
Bat, Ozark big-eared ([\*Corynorhinus \(=Plecotus\) townsendii ingens\*](#))  
Beetle, American burying ([\*Nicrophorus americanus\*](#))  
Cavefish, Ozark ([\*Amblyopsis rosae\*](#))  
Cavesnail, Tumbling Creek ([\*Antrobia culveri\*](#))  
Crane, whooping ([\*Grus americana\*](#))  
Curlew, Eskimo ([\*Numenius borealis\*](#))  
Darter, Niangua ([\*Etheostoma nianguae\*](#))  
Eagle, bald ([\*Haliaeetus leucocephalus\*](#))  
Higgins eye (pearlymussel) ([\*Lampsilis higginsii\*](#))  
Madtom, Neosho ([\*Noturus placidus\*](#))  
Mapleleaf, winged ([\*Quadrula fragosa\*](#))  
Mucket, pink (pearlymussel) ([\*Lampsilis abrupta\*](#))  
Mussel, scaleshell ([\*Leptodea leptodon\*](#))  
Pearlymussel, Curtis ([\*Epioblasma florentina curtisii\*](#))  
Plover, piping ([\*Charadrius melodus\*](#))  
Pocketbook, fat ([\*Potamilus capax\*](#))  
Shiner, Topeka ([\*Notropis topeka \(=tristis\)\*](#))  
Sturgeon, pallid ([\*Scaphirhynchus albus\*](#))  
Tern, least ([\*Sterna antillarum\*](#))  
Wolf, gray ([\*Canis lupus\*](#))

Source: US Fish & Wildlife Service, 2005.

## **18. Historic and Archeological Preservation**

The proposed action includes new bus shelters at various locations along the BRT route. These will be located on the sidewalk as it presently exists. There are numerous historic properties located throughout Kansas City. These are presently listed on the National Register of Historic Places (NRHP) and the Kansas City Register of Historic Places (KCRHP). Both lists were obtained and the properties were noted as to location and compared with the proposed BRT routing. Information obtained during this archival search has been summarized below.

The National Register of Historic Places, maintained by the State Historic Preservation Office (SHPO) of the Missouri Department of Natural Resources (MDNR) includes 191 historic buildings, structures, sites, and archeological sites within the city limits of Kansas City. Of those, 188 are in that portion of Kansas City that is within Jackson County.

The Kansas City Register of Historic Places, maintained by the Landmarks Commission, contains listings that are on the NRHP as well as those only on the KCRHP.

Note: information about the Troost BRT and a map of the historical sites was sent to Mr. Jade Liska, ASLA, Acting Division Manager, Kansas City, MO and Mr. Mark Miles, State Historic Preservation Officer, Missouri Department of Natural Resources, a copy of these letters and materials is included in the appendix.

## **A. HISTORIC RESOURCES**

### **I. No-Build Alternative**

The No-Build Alternative would not affect any properties on or eligible for inclusion on the NRHP and/or the KCRHP. The No-Build Alternative utilizes existing bus service which already passes by the same historic properties and districts as would occur in the Build Alternative.

### **II. Build Alternative**

The Build Alternative would pass by a number of historic properties or pass through a historic district. The historic properties or districts which could be affected were determined by reviewing the BRT route along with the listing of properties as noted above.

The BRT route would include a station at the following location:

Alana Apartment Hotel, 2700-2706 Troost Avenue, National and State

The BRT route would include a station within the following Historic District:

Armour Boulevard District, 800-1328 E. Armour Boulevard, National and State

The BRT route would pass by the following Historic District:

President Gardens Apartments Historic District, 82nd Street to 83rd Terrace, Troost Avenue to Lydia, National and State

The BRT route would pass by the following resources listed on the NRHP & the KCRHP, which are already accessed by bus service:

Bryant Building, 1102 Grand Avenue, National, State and Local

Chambers Building, 25 East 12<sup>th</sup> Street, National and State

Highland Telephone Exchange Building, 1020 East 63<sup>rd</sup> Street, National and State

St. Marks Lutheran Church, 3800 Troost, Local

St. Mary's Episcopal church, 1307 Holmes, National and Local

Woolworth Building, 3120-3122 Troost Avenue, National and State

Peck, George B. Dry Goods Company Building, 1044 Main Street, State

Boley Building, 1130 Walnut Street, National and State

Palace Clothing Company, 1126-1128 Grand Avenue, National and State

Bonfils Building, 1200 Grand Avenue, National and State

J.W. Jenkins Music Company Building, 1217-1223 Walnut Street, National and State

National Garage, 1100-1110 McGee Street, National

Professional Building, 1101-1107 Grand Avenue, National and State

Gate City National Bank, 1111 Grand Avenue, State and Local

Curtiss, Louis, Studio Building, 1116-1120 McGee Street, National, State and Local

Argyle Building, 306 East 12<sup>th</sup> Street, National and State

As can be noted from the buildings and properties listed above, there is a wide range of historical resources along the BRT route, which is in keeping with history of Kansas City and the roll that mass transit has played in its development. The horse drawn trolley, the cable car, the gasoline and electric trolleys, buses and street cars have transported Kansas City's residents, commuters, and visitors along these transportation corridors since before the 1900's, and transit service continues there today.

The BRT shelters, while having a generally uniform design and color scheme, can be modified as appropriate in order to comply with context sensitive design considerations. Generally speaking, though, a bus shelter in front of or next to a historic building would not affect the historic nature of the building. The KCATA will coordinate on a case-by-case basis. Bus shelters already exist throughout the corridor today.

## **B. ARCHAEOLOGICAL RESOURCES**

The NHRP and KCRHP were reviewed for the names of archeological sites located in Kansas City. As with all archeological sites, the addresses are suppressed for safety and site integrity reasons. However, the sites are listed by name, city and county location. The NRHP listed only one archeological site in Kansas City, the Deister Archeological Site.

### **I. No-Build Alternative**

The No-Build Alternative would not affect any known archeological sites on or eligible for the NRHP.

### **II. Build Alternative**

The BRT proposed action, consisting of providing additional bus service and new bus shelters at appropriate locations would have no impact on known archeological resources within Kansas City. No excavations are planned as the bus shelters would be located on existing sidewalks and the busses would run on existing streets.

Figure 4 – DNR Letter – Historic Property

**CULTURAL RESOURCE ASSESSMENT  
Section 106 Review**

CONTACT PERSON/ADDRESS ..... C: .....

Wayne Feuerborn  
HNTB Corporation  
715 Kirk Drive  
Kansas City, Missouri 64105

Christopher Van Wyk, FTA  
Brad Wolf, KC

PROJECT:  
Troost Corridor Bus Rapid Transit, Kansas City

FEDERAL AGENCY  
FHWA

COUNTY:  
JACKSON

The State Historic Preservation Office has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

- After review of initial submission, the project area has a low potential for the occurrence of cultural resources. A cultural resource survey, therefore, is not warranted.
- Adequate documentation has been provided (36 CFR Section 800.11). There will be "no historic properties affected" by the current project.
- An adequate cultural resource survey of the project area has been previously conducted. It has been determined that for the proposed undertaking there will be "no historic properties affected".

For the above checked reason, the State Historic Preservation Office has no objection to the initiation of project activities. PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK ARE CHANGED, A BORROW AREA IS INCLUDED IN THE PROJECT, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of compliance with Section 106 of the National Historic Preservation Act, as amended.

By: Mark A. Miles  
Mark A. Miles, Deputy State Historic Preservation Officer

June 15, 2007  
Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES  
STATE HISTORIC PRESERVATION OFFICE  
P.O. Box 176, Jefferson City, Missouri 65102

For additional information, please contact Judith Deel, (573) 751-7862. Please be sure to refer to the project number:  
135-JA-07

## **19. Hazardous Waste Sites**

In reviewing the EPA's EnviroMapper, there are 53 hazardous waste sites along the corridor. There are no Superfund sites within the corridor. The hazardous waste sites appear to be spread out along the corridor with the exception of a concentration of 10 sites between 55<sup>th</sup> and 59<sup>th</sup> street. The locations are described as follows: there are eight sites within the downtown interstate loop; fifteen sites between the loop and 25th Street; four sites between 25th Street and Brush Creek; 23 sites between Brush Creek and 85th Street; three sites between the 85th Street and 95th Street.

None of the proposed station locations are directly adjacent to any of the listed sites.

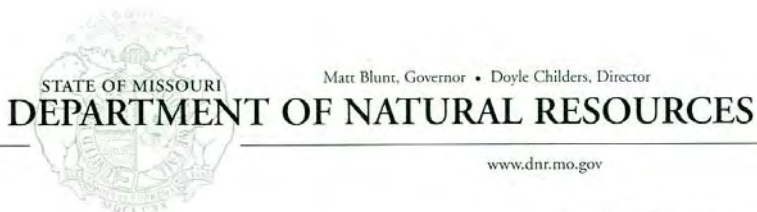
### **I. No-Build Alternative**

The No-Build Alternative would not affect any of the hazardous waste sites along the corridor.

### **II. Build Alternative**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property. BRT would have no impact on hazardous waste sites.

Figure 5 – DNR Letter – Hazardous Waste



July 20, 2007

Mr. Wayne Feuerborn, AICP  
Project Manager  
HNTB Corporation  
715 Kirk Drive  
Kansas City, Missouri 64105

HNTB	
K. C. MO	
JUL 30 2007	
JOB NO.	

Re: Troost Corridor Bus Rapid Transit, Kansas City, Missouri

Dear Mr. Feuerborn:

The Missouri Department of Natural Resources (department) appreciates the notice that your organization is assisting the Kansas City Area Transportation Authority in its study of the Troost Corridor for use by rapid transit vehicles. After reviewing the information provided, the department offers the following comments regarding potential environmental impacts of the proposed construction and operation of the facility. We hope these assist you in development of this project.

While there are a number of hazardous waste sites in the Kansas City area, none appear to be located close to the proposed bus turnaround location. The two closest sites are Arrow Truck Sales at 3215 East 85th and Southeast Sanitary Landfill at 83rd & Indiana. If these sites are within your study area, we will be glad to provide more detailed information on cleanup efforts to date at these locations. The only federal facilities identified near the project area are located on the attached map. None of these appear to be close enough to have any environmental impact on the proposed bus turnaround location. Databases for underground storage tanks, Superfund sites, federal facilities, brownfields / voluntary cleanups and RCRA permits were checked, and no further sites were identified near the proposed project area.

If jurisdictional waters, streams or wetlands will be impacted by the project, a federal 404 permit from the Army Corps of Engineers will be necessary. Please contact Craig Litteken of the Army Corps of Engineers, Kansas City District at (573) 634-5657 (extension 3835) to determine if the Corps will require a federal 404 permit. If the Corps requires a federal 404 permit, the project may also require a state 401 water quality certification.



Mr. Wayne Feuerborn, AICP  
Page Two

If more than 1 acre will be cleared on contiguous lands in the construction of the bus turnaround, the Kansas City Area Transportation Authority will need to obtain a stormwater permit for land disturbance from the department. This permit will pertain to land disturbance for construction, wastewater discharge and stormwater management during operation. Information on water permits and certifications can be found on the department web site at:  
<http://www.dnr.mo.gov/forms/index.html#WaterPollution>

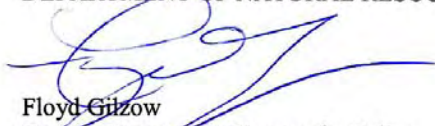
If there are questions about the water quality certification or land disturbance permit, please contact the department's Water Protection Program at (573) 751-1300.

As more information is developed about the project, we would appreciate an opportunity for further review and input. Should refueling stations be incorporated into the turnaround, for example, an air permit from the department might be required. The department would also be glad to offer information on energy efficient measures that may be incorporated into this project, such as use of biofuel, energy efficient buses or energy efficient buildings onsite.

If you have any questions regarding these comments, or need clarification, please contact me or Ms. Jane Bectem, telephone number 573-751-3195. Her address for correspondence is Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102. Thank you.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES



Floyd Gilzow  
Deputy Department Director for Policy

/jb

Attachment

# FFS 85th St. and Troost Ave. Proposed Bus Depot

The Federal Facilities Section reviewed the July 17, 2007 request from Jane Beetern of the Missouri Department of Natural Resources Director's Office for the proposed bus turnaround located on the southeast quadrant of the intersection of 85<sup>th</sup> St. and Troost Ave. There are three Federal Facilities Section projects within a five-mile radius of this area.

The FFS project sites are:

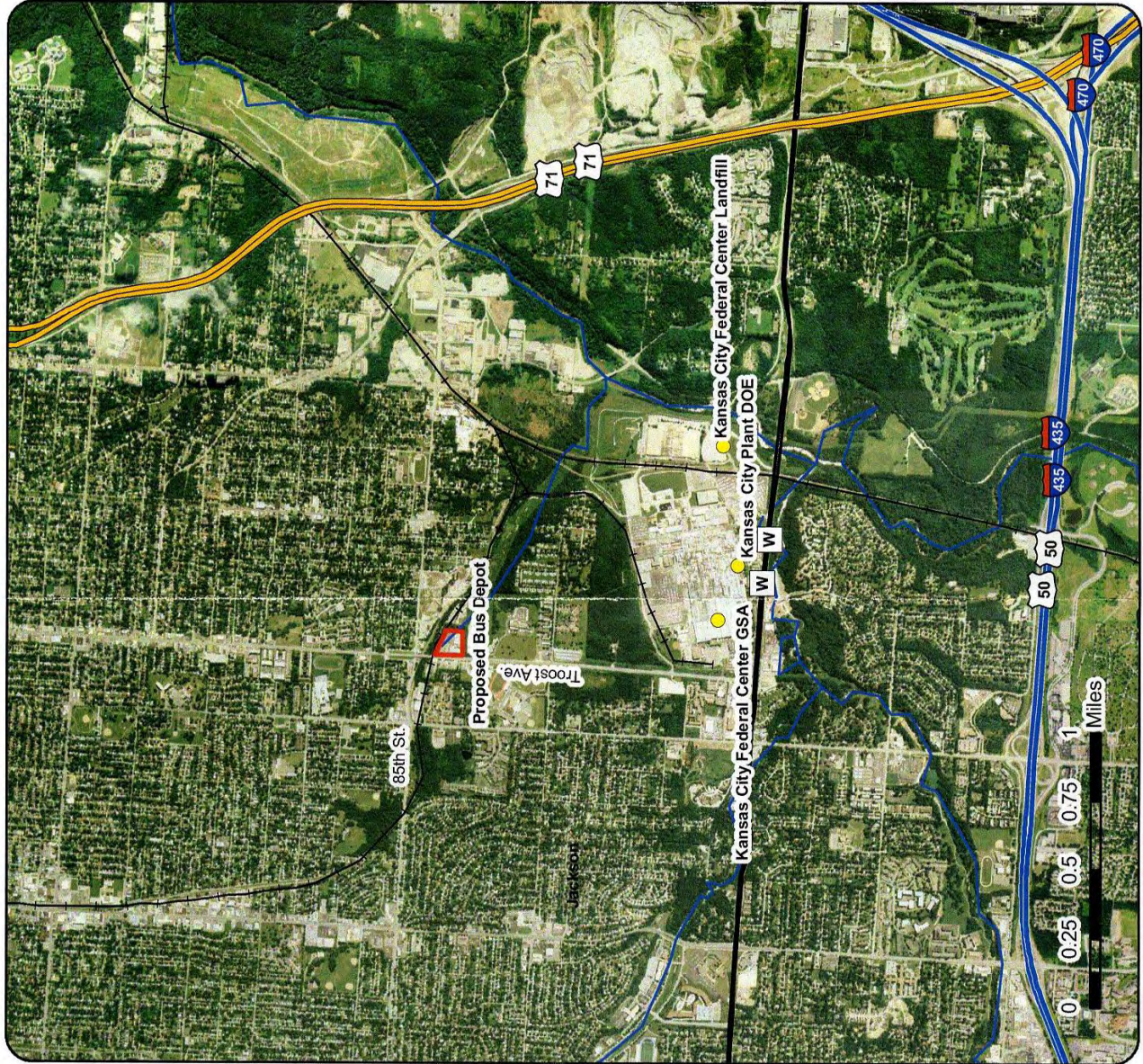
- Kansas City Federal Center GSA
- Kansas City Plant DOE
- Kansas City Federal Center Landfill



**Missouri Department of Natural Resources**  
 Division of Environmental Quality  
 Hazardous Waste Program  
*Created by Shawn Muehls on July 19, 2007*



Although data sets used to create this map have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.



## **20. Visual Impacts**

The visual impacts of this project refer to the degree of visual change that would occur in the existing visual environment in relation to viewers who can observe the facilities (BRT shelters) from an adjacent vantage point.

### **A. VISUAL RESOURCES**

The visual environment of the transit corridor contains several visually distinct areas or districts with various building types and architectural styles. These areas include the University of Missouri-Kansas City, Rockhurst University, Hospital Hill, the Anita B. Gorman Discovery Center, Stowers Institute for Medical Research and the Brush Creek vicinity business district with adjacent residential neighborhoods.

Within the transit corridor there are also some historic resources (individual buildings and districts) listed on the Kansas City Register of Historic Places, some of which are also listed on the National Register of Historic Places. They are located from the downtown loop, south into the midtown area. (A further discussion of these resources can be found in the Historic and Archaeological Resources section of this document.)

### **B. AESTHETIC CONSIDERATIONS**

The new BRT shelters, located at various stations along the transit route, would be placed at the far side of the existing city sidewalk public right-of-way, except at locations where physical constraints or special considerations prohibit it. The shelters and related transit infrastructure improvements would be distinctive in design and color (compared to existing bus shelters), fully ADA compliant, approximately the same size as existing bus shelters, and would include real time bus arrival information.

An important element of BRT effectiveness is the ability of even the most casual or unfamiliar bus customer to locate stations. Effectiveness would be accomplished primarily through a distinctive shelter and marker design and distinctive vehicles. Visibility and distinctive colors are important for both. No final decisions have been made on color schemes; however, the design would be similar to MAX on Main Street. Max on Main Street utilized a series of design charettes, public meetings and input sessions, construction of a prototype station, and individual meetings with each property owner adjacent to a proposed station location. The BRT station design is flexible and allows for modifications at each location to accommodate many concerns without comprising the design or intent. For instance additional landscaping was added, the arrangement of elements were flipped, smaller stations and markers were utilized where appropriate to comply with neighboring concerns. Construction of the station was performed in a manner that did not impede business operations. With the exception of building a prototype, the same principles and methods will be utilized in the Troost BRT design and construction.

Although it is planned that the BRT shelters would have common elements (color, logo, etc.), opportunities exist for some variation along the route in order to comply with context sensitive design considerations, especially near historic buildings. Shelters located in front of or adjacent to an historic building will not affect the historic nature of the building. However, context sensitive design can complement the historic structure.

Other opportunities for context sensitive design include major public and private ventures that are underway in downtown Kansas City to address streetscape and other enhancements. Twelfth Street, a portion of the BRT route, has been targeted to receive substantial city funding for transformation to a more attractive pedestrian corridor. The City's proposed improvements would be an integral part of implementing BRT stations, shelters and amenities, further helping to create the transit identity needed for BRT.

This project also provides an opportunity to upgrade the existing sidewalks, curbs, gutters, and streets adjacent to these shelters/stations at selected locations. Additional amenities could also include landscaping, either at the sidewalk level or in planters placed near the shelters.

The shelters are not major structures and their design and related amenities/improvements would have a low visual impact on the surrounding visual environment. The shelters would not disrupt pedestrian circulation or business operations anywhere along the BRT alignment. The parking lots at the park and ride locations can also be enhanced with landscaping to lessen the visual impact.

## **21. Energy**

KCATA agrees to perform an energy assessment for any building constructed, reconstructed, or modified with FTA assistance, as provided in FTA regulations, "Requirements for Energy Assessments," 49 C.F.R. Part 622, Subpart C. There are no energy impacts within the corridor.

The shelters currently used on the existing BRT route use LED lights which is a low voltage source.

## **22. Construction Impacts**

### **I. No-Build Alternative**

The No-Build Alternative will not cause any construction impacts.

### **II. Build Alternative**

There will be minor construction impacts as most of the construction would replace existing improvements. The construction would consist of bus shelter construction, limited repaving, curb, gutter, and sidewalk reconstruction. Temporary impacts would include some construction noise and some temporary existing lane and sidewalk closure.

*City regulations will be followed when determining the hours of construction. Access to businesses will be maintained during construction.*

## **23. Irreversible and Irretrievable Commitment of Resources**

### **A. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

#### **I. No-Build Alternative**

The No-Build Alternative would not cause an irreversible and irretrievable commitment of natural, physical, human, and fiscal resources.

#### **II. Build Alternative**

The implementation of the proposed project would entail, to a limited degree, an irreversible and irretrievable commitment of natural, physical, human, and fiscal resources. Bus shelter construction, limited repaving, curb, gutter, and sidewalk reconstruction, money, manpower, construction materials, and energy resources would all be committed to project implementation. In addition to these quantifiable resources, a commitment of amenity resources that reflect the subjective value of a community to its residents is often a cost of transportation to adjacent landowners. At the same time, it is a benefit to the traveling public. The commitment of these resources is to a large part predicated on the basic concept that transportation systems contribute to health, safety, and welfare of local, county, and state residents as well as those traveling from other parts of the country.

## **24. Traffic and Parking**

Traffic volumes along Troost Avenue have declined since the opening of the Bruce R. Watkins freeway (US 71) in 2001. Traffic has shifted to this expressway corridor. Traffic has been reduced on Bannister Road with the closings of the Wal-Mart at 93<sup>rd</sup> and Hillcrest and the Bannister Mall.

On-street parking is allowed on 11<sup>th</sup>, 12<sup>th</sup>, Main, Holmes, Charlotte, 25<sup>th</sup>, and Troost within the project area. On-street parking is limited to the restricted posted times that the City of Kansas City, Missouri has enforced. On-street parking is not allowed on Bannister Road.

### **I. No-Build Alternative**

The No-Build Alternative will not reduce traffic along Troost nor impact on-street parking.

### **II. Build Alternative**

Outside of downtown where an exclusive travel lane for busses already exists, no additional lane exclusivity is part of this BRT project. Parking will generally remain as signed along the corridor. Any on-street parking modifications needed to meet the needs of the BRT project and/or BRT stations will be coordinated with the City of Kansas City, Missouri.

## **25. Safety and Security**

The BRT stations are planned to provide additional security and safety for transit users. The stations will provide real time information and other enhanced communication to provide users with current information about the BRT route, the local #25 service and connecting services. In addition, the shelters used on the first BRT route had LED lighting incorporated into the shelter to provide lighting in the evening and night time. Pedestrian light fixtures are also proposed as part of the station elements for the Troost BRT project to provide additional lighting of the platform area at night.

The new BRT buses will be stored in a secured location at the existing maintenance facility. A proposed 1,000 square foot building will be constructed to store station components at the existing maintenance facility at 17<sup>th</sup> and Forest.

## **26.4(f)**

This project would involve an upgrade of existing bus service and the building of new bus shelters on existing sidewalks in a developed, urban environment with no construction on undeveloped property and limited construction outside of the ROW for the park and ride locations. There are no parks, historic properties or other federally regulated impacts within the corridor.