

# Transit Feasibility Study

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*Prepared for  
The City of Jefferson, Missouri  
and*

**JEFFTRAN**

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## Executive Summary

The Jefferson City Transit Division is responsible for providing convenient, reliable, comfortable, accessible, and safe transportation for the citizens and visitors of Jefferson City, Missouri. The Jefferson City Transit System operates fixed route transit service and paratransit service. JEFFTRAN also provides a complementary paratransit service called “Handi Wheels” and serves citizens with disabilities who qualify for this special service under the Americans with Disabilities Act (ADA).

The Jefferson City Transit Division is commonly referred to as “JEFFTRAN.” JEFFTRAN has a fleet of 29 vehicles including 2 back-up shuttle buses operating on seven regular fixed routes and four commuter school tripper routes. JEFFTRAN currently operates out of offices at 820 East Miller Street. These offices are contiguous with the Charles E. Robinson Transit and Maintenance complex. This complex houses the City’s Central Maintenance department which provides maintenance for a variety of City-owned vehicles and equipment including JEFFTRAN buses. JEFFTRAN is a division of the City’s Department of Community Development.

JEFFTRAN hired TranSystems to conduct a feasibility study to assist them in the evaluation of alternatives and ultimately the selection of a preferred option that will provide JEFFTRAN with adequate and fully functional facilities allowing them to meet their future transportation and operational goals. As part of this feasibility study, an evaluation of existing facilities as well as the identification of the future needs of JEFFTRAN operations was conducted. This study will serve as the basis for future planning decisions relative to JEFFTRAN operations.

The study includes an assessment of JEFFTRAN’s current and future transportation and facility needs and conceptual design of the recommended site. The study also includes the environmental analysis and other documentation required for application for transportation funding through the Missouri Department of Transportation (MoDOT) and the Federal Transit Administration. This final report summarizes project activities for submission to MoDOT and FTA for the purpose of securing funding.

The current facility has six facility components including a Transit Administration Office, a City Fleet Maintenance Facility, a Transit Bus Parking Structure, a Fleet Fueling Station, a Drive-Through Vehicle Wash Building and a Bus Transfer Station. A description and a physical and functional analysis of each facility is included. The study concluded that the existing facilities are inadequate and should be replaced. The major findings included:

- Existing space is not readily expandable and is inadequate to meet the needs of the current JEFFTRAN operation. It will not accommodate future needs as the operation grows.
- Growth in administrative staff levels has far exceeded the administration building’s ability to accommodate this growth in any organized manner. Current space utilization is very disorganized and congested in all portions of the building.
- The storage building does not accommodate the current vehicle fleet size.

Through site programming sessions with JEFFTRAN staff, the current and future functional space requirements for JEFFTRAN operations were determined. The Administrative Office requires an office area of 5,276 SF, Bus Storage requires approximately 20,000 SF of space and the Bus Transfer station will need 1,500 SF of space to operate. City Maintenance and Transit Maintenance currently occupy shared space and it has been determined that to operate most efficiently, these maintenance components will remain joined.

In order to meet the needs of its clients, JEFFTRAN must locate its new or enhanced transportation facility in an optimal location. Seven sites were evaluated based on criteria ranging from parcel size and shape to access to various cost measures. The study determined that “Option 1 Scenario A” best meets the site selection criteria used to evaluate six site alternatives. An environmental analysis concluded that the JEFFTRAN transportation facility at this location would not have any significant environmental or community impacts. Construction of a new

facility was found to be a fiscally responsible option that would meet not only the current but also future needs for operations.

An Environmental Analysis for Probable Categorical Exclusion for Option 1 Scenario A was performed. The environmental analysis has determined that the proposed project will have no adverse environmental impact.

The estimated cost to develop the transportation operations facility is approximately \$X million. If this project is approved, a grant application would be submitted to MoDOT and FTA for Section 5309 funding. Eighty percent of the cost of the project would be funded through Section 5309 funds while JEFFTRAN would provide the local, twenty percent match.

## Introduction

The Jefferson City Transit Division is responsible for providing convenient, reliable, comfortable, accessible, and safe transportation for the citizens and visitors of Jefferson City, Missouri. The Jefferson City Transit System operates fixed route transit service and paratransit service. The Jefferson City Transit Division is commonly referred to as "JEFFTRAN." JEFFTRAN currently has a fleet of 29 vehicles including 2 back-up shuttle buses operating on seven regular fixed routes and four commuter school tripper routes. JEFFTRAN also provides a complementary paratransit service called "Handi Wheels" and serves citizens with disabilities who qualify for this special service under the Americans with Disabilities Act (ADA).

JEFFTRAN is a division of the City's Department of Community Development. A Division Director is directly responsible for JEFFTRAN operations. The Division is managed by the Division Director and staffed by two operations assistants and two full-time dispatchers and one part-time dispatcher.

JEFFTRAN hired TranSystems to conduct a feasibility study to assist them in the evaluation of alternatives and ultimately the selection of a preferred option that will provide JEFFTRAN with adequate and fully functional facilities allowing them to meet their future transportation and operational goals. As part of this feasibility study, an evaluation of existing facilities as well as the identification of the future needs of JEFFTRAN operations was conducted. This study will serve as the basis for future planning decisions relative to JEFFTRAN operations. The feasibility study is intended to meet the following objectives:

- Assessing the feasibility for a new JEFFTRAN transit operations facility consistent with MoDOT and FTA guidelines for requirements;
- Evaluating and preparing conceptual design for the site selection Options;
- Providing an environmental analysis to establish the project's eligibility for a Categorical Exclusion under 49 CFR 771.117 (d) (8) consistent with MoDOT and FTA Guidelines;
- Developing a final report summarizing project activities suitable for submission to MoDOT and FTA for the purpose of securing funding.

During this feasibility analysis a thorough review of JEFFTRAN's transportation and management functions was conducted and a complete functional and space program was developed identifying both current and future needs. As part of the analysis, six options were considered as alternatives for the location of the new facility.

## Feasibility and Needs Identification Process

During development of the feasibility and needs analysis for this study, it was necessary to evaluate and capture both the physical and functional capabilities and liabilities presented of the existing JEFFTRAN Transit and Fleet Service complex buildings. The specific goals of this evaluation process were as follows.

- Understand the current functional space utilization and identify critical areas where the existing space limitations pose challenges to meeting current and future Transit operational needs.
- Understand how the physical layout and condition of existing facilities may be influencing the JEFFTRAN staff's effectiveness and their ability to perform critical job functions.
- Evaluate the physical condition of all existing building components, and identify critical areas of concern such as compliance with current building code, environmental and energy codes, and ADA compliance.

- Provide a cursory evaluation of properties surrounding the Facility with respect to possible expansion of operations onto these properties.
- Determine if the existing facilities or specific portions thereof can successfully and feasibly be incorporated into the long-term plan and help satisfy established goals of the organization as stated in the Request for Qualifications dated August 14, 2009, and as further identified in the evaluation process.

It is with these goals in mind that the general facility evaluations were conducted looking at both the physical and functional aspects of the Charles E. Robinson Transit and Maintenance complex. The team visited the site on several occasions. Visual inspections were made, photographs were taken, existing drawings were reviewed and critical staff members were interviewed. Visual observations were made during peak operational periods to analyze existing traffic flow through the complex. Focus was given to identifying inherent operational challenges presented by physical arrangement, condition and location of the various site components.

The Jefferson City Transit Development Plan prepared in 2006 by TranSystems was consulted and reviewed for information that would assist in developing a baseline condition report for this study. The Whitton Expressway Environmental Impact Statement prepared in partnership by the U.S. Department of Transportation, the Federal Highway Administration and the Missouri Department of Transportation in 2009 was also consulted for information related to the reconfiguration of the Expressway that could impact the Facility.

## Existing Facilities Overview

The combined transit and maintenance facility located at 820 East Miller consists of six (6) components housed in four (4) individual and interconnected buildings located on a single block bordered by Miller Street on the north, Chestnut Street on the east, and Cherry Street on the west and the Whitton Expressway on the south. The complex has two occupants: Jefferson City Transit and Central Maintenance. The complex supports JEFFTRAN by providing areas to store and maintain JEFFTRAN's fleet of transit vehicles. Additionally, the Central Maintenance Facility serves all other City-owned fleets including those of the Public Works, Fire and Police Departments. The site also serves as the primary transfer station for all transit bus routes. The six components of the facility include the following:

- Transit Administration Offices;
- City Fleet Maintenance Facility;
- Transit Bus Parking Structure;
- Fleet Fueling Station;
- Drive-Through Vehicle Wash Building;
- Bus Transfer Station.

Facility record drawings, obtained from the City, indicate that the facility was originally designed in 1982. The original design program included all existing site components except for the Bus Transfer Station which was relocated to this location from its former downtown site at High and Jefferson Streets in January 2009. The facility has been expanded once with one additional service bay added to the Central Maintenance Facility within the past few years.

Exhibit 1 (page 4) provides the location of the functional areas outlined above and provides a general layout of the Facility.

The Facility is located on a site that originally featured a substantial slope from north to south. In order to efficiently utilize as much of this sloping site as possible, the original Facility design included a concrete retaining wall running parallel to the south curb of Miller Street. The wall is located along the entire block from Chestnut to Cherry except for the portion of the Facility occupied by JEFFTRAN's offices. Construction of the retaining wall, sited at approximately the right-of-way line of Miller Street, allowed designers to capture as much operational area on the site as possible. Fleet fueling and wash facilities are located immediately adjacent to the wall, freeing as much space as possible on the site for vehicular access to the Central Maintenance area and the bus storage building. The east wall of the Central Maintenance building also serves as a variable height retaining wall, supporting a steeply graded area of lawn adjacent to Chestnut Street. The site typically drains from north to south. Major storm and sanitary mains are located in the right-of-way of Whitton Expressway on the south side of the property. Vehicular access to the Facility is exclusively from Cherry Street on the west side of the property. Buses exiting the bus storage building exit to the west, directly on to Cherry Street. Driveways and maneuvering areas on site are paved with concrete that is in fair to good condition.

Included in this section is the following analysis for each site component:

1. *Description:* General description including physical location on the site, and relationship to other site components.
2. *Physical Analysis:* Discussion of the existing physical condition including building envelope, mechanical and electrical systems.
3. *Functional Evaluation:* Discussion focusing on the use and functional attributes of each major component of this complex.

The study team conducted a tour of the existing facility grounds to gain a better understanding of the existing conditions and deficiencies of the site. This portion of the assessment focuses on the buildings currently occupied or used by JEFFTRAN. The evaluation includes a physical and functional analysis of each building or structure used or occupied by JEFFTRAN. The functional elements are detailed to provide insight into key issues or deficiencies within each building or structure.



Facility Components	
1.) Transit Administration Office	2,150 square feet
2.) City Fleet Maintenance Facility	13,780 square feet
3.) Bus Storage Building	11,273 square
4.) a. Fuel Canopy	39 feet long
b. Fuel Tanks	
5.) Wash Building	120 square feet
6.) Transfer Shelter	
7.) Employee Parking	
8.) Overflow Storage	

Exhibit 1: Site Layout

## Transit Administration Office

**Description:** The Transit Administration Office is identified as Structure 1 on Exhibit 1 and shown in Exhibit 2. The offices occupy approximately 2,150 square feet on the upper level of the City Fleet Maintenance Facility. Space includes offices for Transit administrators, dispatchers, driver check-in and a break room that doubles as a conference room. The building also includes separate male and female restrooms with one toilet in each. There are currently six full-time employees and one part-time dispatcher.



Exhibit 2: JEFFTRAN Transit Administration Office  
(North Face of Building)

**Physical Analysis:** Constructed as part of the original complex, the administrative offices have largely remained consistent with the original design. Changes within this area over the life of the building have been limited to interior floor plan modifications intended to accommodate changing staff levels and operational needs. Primary access to this area is provided by a single “at grade” entrance on the north side of the building. The Administration area is physically connected to the City Maintenance Facility and access between these two areas is restricted to a single enclosed stairwell within the building.

This facility was constructed utilizing perimeter concrete masonry bearing walls with brick veneer and a bar joist roof and metal deck roof structure covered with a conventional built-up roof. Interior finishes are typical for office buildings from the early 1980's with painted gypsum board and masonry walls, vinyl floor tile and suspended acoustical ceilings. Exterior perimeter walls have little or no insulation provided, so the existing building is non-compliant with current building energy code standards.

The design of this structure, in utilizing perimeter bearing walls makes it difficult to expand or modify the building. This building was constructed prior to the ADA going into effect. Although the building has an “at grade” entrance, it is generally non-compliant with the requirements of ADA. With respect to adopted building codes, the building is deficient in several key areas related to egress and life safety. The most critical deficiency is in meeting egress or exit requirements. The building currently has two exits; however the exits are too close to each other to meet the required minimum separation distance as prescribed by International Building Code.

**Functional Analysis:** Based on original building drawings, the current functional use of this space appears consistent with original design intent. Growth in staff levels has resulted in critical space deficiencies in every area. Deficiencies are noted in the following key areas:

- Growth in administrative staff levels has far exceeded the building's ability to accommodate this growth in any organized manner. Current space utilization is very disorganized and congested in all portions of this building.
- There is no area dedicated as a visitor reception area or an area where bus passes can be purchased. Visitors who wish to purchase bus passes do so within a small building entrance vestibule that has a connection to the dispatch area. This area is very small and will only accommodate one visitor at any time.
- Because the driver supervisors are located in this building, they are physically and visually separated from the Transit Bus Parking Structure and cannot observe any activities that occur in that area or in fueling and bus wash areas.
- Dispatch functions have been displaced to accommodate growth in other office areas. Dispatch now operates from a small office that was once a storage closet.

- Typical office related support spaces such as conference rooms, break rooms, restrooms, locker rooms and communications rooms are either insufficient for the building occupant load or not provided.
- The building lacks any form of physical separation between administrative offices and space used for driver check-in.
- Growth in the number of drivers has created congestion in the building and has resulted in substantial overcrowding during the driver's check-in process.
- Location of a common parking lot on the east side of the JEFFTRAN offices and access restrictions at this site encourages employees to walk through the Administration Offices to get to their work areas. This includes transit drivers and employees of the City Maintenance Facility.

An additional concern is that the office stairwell discharges directly into the Maintenance Facility vehicle service bays. This is not permitted under the current building code. Heating and cooling is provided via a single roof-top unit with ducted supply and plenum return. From a physical standpoint, the building, while deficient in several key areas continues to be serviceable.

### City Fleet Maintenance Facility

**Description:** The City Fleet Maintenance Facility is identified as Structure 2 on Exhibit 1 and shown in Exhibit 3. It occupies approximately 13,780 square feet that includes:

- 4 15'x 48' Vehicle Maintenance Bays
- 4 20'x 60' Vehicle Maintenance Bays
- Supervisor's Office
- Parts Storage Area
- Rebuild Rooms
- Welding Room
- Restrooms



Exhibit 3: City Fleet Maintenance Facility  
(West Face of Building)

**Physical Analysis:** This facility was completed as part of the original complex constructed in 1982. One additional south service bay was added at a later date. It was constructed using slab-on-grade construction with a pre-engineered metal building structure above. Both the north and east walls are reinforced, poured-in-place concrete retaining walls. The north wall is completely below grade and the east wall is either completely or partially below grade due to the variable slope of grades east of the building.

The parts storage area is directly below the Transit Administrative Offices. This portion of the facility has a single-sloped metal roof which drains to the west. Exposed concrete perimeter walls are uninsulated. The metal building walls have R-11 fiberglass insulation with a vinyl liner. The interior walls are a combination of masonry and framed wall with gypsum board surfaces. All areas of this building are serviceable, but in poor condition. All service doors are limited to access from the west only due to on site grade differential.

Opportunities for expansion of this building are very limited. Expansion to the east would be challenging due to severe grade changes. The service bay addition on the south end of the existing building has exhausted all potential expansion space in that direction. Expansion to the west, while possible, is not practical because of the existing eave height and operational challenges that would be created within the building.

The building is poorly insulated and does not meet current energy codes. It is also non-compliant with current Building, ADA and Fire Codes with regard to egress, accessibility, fire separation and ventilation. This building shares a common oil/water separator with the Wash Facility. The oil/water separator appears to be undersized for serving the two facilities. Limited parking and maneuvering space is provided to the west in a lot shared with the Transit Bus Parking Structure. Exhibit 4 illustrates the typical congestion experienced as vehicles attempt to maneuver through the site.

While the building has several notable deficiencies related to ADA, ventilation and fire protection, the structure is in good condition.

**Functional Analysis:** The building continues to function as the original design intended, however the current shortage of covered parking for transit vehicles requires frequent use of this building for that purpose. Functional deficiencies are noted in the following key areas:

- Access to the Maintenance bays is limited to one side of the building. No drive-through capability exists.
- Vehicles being serviced must be moved out of the building to allow for overnight parking of transit vehicles.
- Transit bus maneuvering requirements in the central paved area between this building and the Transit Bus Parking Structure limits availability of exterior parking space for out-of-service vehicles and restricts access during peak bus traffic periods.



Exhibit 4: City Fleet Maintenance Facility Shared Lot  
(Facing Northwest)



Exhibit 5: Interior View of City Fleet Maintenance Facility  
(Facing Service Bay Doors)

- The newest maintenance bay which was added to the south end has very limited access because of approach restrictions. It is not fully functional.
- Half of the Maintenance Bays are smaller in size and are insufficient in both length and width and do not accommodate many of the City owned vehicles serviced at this location.
- All service bays have less than optimum width, which restricts some maintenance functions.
- Building clearance height restricts the ability to lift and service larger vehicles with tilt cabs or beds.
- Parts storage space is very limited especially considering the range of vehicle types serviced.
- Building has inadequate mechanical ventilation and existing design will not allow for natural cross ventilation.
- Building lacks adequate space dedicated for rebuilding components.
- Overall arrangement of buildings in this complex forces non-shop employees to walk through this building as they report for work. This should be considered both a safety and security risk.

Even with the geometrical and operational deficiencies listed above, maintenance staff is able to efficiently perform required maintenance activities in the building. The inefficiencies associated with operations for this building relate to vehicles entering and exiting work bays. Vehicles generally pull forward into maintenance bays and exit by backing out. This backing movement is inherently unsafe and requires diligence on the part of the drivers and maintenance staff to help avoid collisions with the building and other vehicles and to ensure worker safety.

### Transit Bus Parking Structure

**Description:** The Transit Bus Parking Facility is identified as Structure 3 on Exhibit 1 and shown in Exhibit 6. The functional use of the building is to provide indoor parking for JEFFTRAN's transit fleet. It occupies approximately 11,273 square feet and includes:

- 5 15'x 140' Drive-through bus parking lanes
- Miscellaneous equipment located on north face of building

**Physical Analysis:** This facility was built as part of the original complex and has remained virtually unchanged throughout its service life. It incorporates concrete slab-on-grade construction with a pre-engineered metal building structure above. The building is in good condition and is generally well-maintained. The building is at an age where critical building envelope components such as the metal roof and wall panels may be nearing the end of their intended serviceable life and replacement of these elements could be considered.

The interior concrete floors and structural frame appear to be structurally sound. The building envelope lacks adequate insulation based on current standards and does not meet current energy code requirements.

There are two exit doors located on the same side of the building. This presents a potential hazard for occupants trying to exit the building when full of parked transit vehicles. An exit on the south side should be added.

HVAC and lighting systems are typical for a building of this age, and should be updated.



Exhibit 6: JEFFTRAN Transit Bus Parking Structure  
(Northwest Face of Building)

It should be noted that employee and driver parking is provided in a common parking lot across the street to the east of the Facility as indicated on Exhibit 1.

**Functional Analysis:** The building continues to function as the original design intended, however it does not accommodate the current fleet size. Functional deficiencies are noted in the following key areas:

- Access and approach pattern for incoming transit vehicles is restricted by the narrow site dimensions. Longer buses that need to drive into the north bay are often required to make multiple back-and-forth maneuvers to properly align with the north bay entrance door.
- Building will not accommodate the current fleet size. Because of this shortfall of space, buses must be parked in other areas including the City Fleet Maintenance building, and Vehicle Wash building in this complex as well as a Public Works building located across the street.
- Driver Check-in function and driver supervisors are remotely located in the Administration building. After checking in, drivers must walk through the City Maintenance Building or around the site to access the parking structure. This can be an inconvenience for both departments.
- Due to site parking restrictions, no available parking space for out of service buses is provided.



Exhibit 7: Interior View of Transit Bus Parking Structure (Facing West)

## Fleet Fueling Station

**Description:** The Fleet Fueling Station is identified as Structure 4a on Exhibit 1 and shown in Exhibit 8. The location of the buried fuel tanks that supply the station are indicated as 4b on Exhibit 1. The station includes the following components:

- 2 Lane Fuel Canopy
- Fuel Island with 6 dispensers
- Pedestal mounted fuel inventory control system.
- 2 12,000 gallon buried fuel tanks (one diesel and one gasoline)
- 2 6,000 buried fuel tanks



Exhibit 8: Fleet Fueling Station (East Side of Structure)

**Physical Analysis:** The fueling canopy is located immediately adjacent to the retaining wall on the north side of the site. The canopy is north of the main driveway into the site. The fuel canopy and dispensers have been well maintained and appear in good working order. The fuel tanks are underground and are located in the shared parking/maneuvering area between the Transit Bus Parking Facility and City Maintenance. The tanks appear to be installed with the original construction. Drawings identify these tanks as single-wall fiberglass. They are used to store diesel fuel and gasoline. Pavement around fill caps has numerous cracks which could present a contamination risk should surface spills occur during tank filling operations.

**Functional Analysis:** This system appears fully functional and is used to fuel a range of City owned Vehicles including those of the Transit, Fire, Police and Public Works Departments. The following observations were noted

- Location of the fueling station limits its use by non-transit vehicles during peak transit bus arrival and departure periods.
- Using six dispensers to serve only two traffic lanes limits the number of vehicles that can be fueled simultaneously.
- Proximity to an unsupervised entrance gate presents a safety and security risk.
- Location is not visible from any supervised area which increases the potential for unauthorized use even among City employees.
- Location of buried fuel tanks makes it difficult for receiving fuel deliveries. Fuel tankers are required to turn completely around in areas that do not accommodate this maneuver.

While this facility can continue to be fully functional, consideration should be given to providing improvements in security. Relocation to a less congested traffic area should also be given consideration to make it easier to use during peak periods.

## Vehicle Wash Facility

**Description:** The Vehicle Wash Facility is identified as Structure 5 on Exhibit 1 and is a single bay drive-through automatic vehicle wash as illustrated in Exhibit 9.

**Physical Analysis:** The wash building is located immediately adjacent to the retaining wall just to the southeast of the fueling canopy. The wash building was constructed as a part of the original complex utilizing a slab-on-grade concrete floor, reinforced concrete masonry walls and a bar joist and metal deck roof. The building is in fair condition for a building of this type and can remain serviceable for many years with consistent maintenance.



Exhibit 9: Vehicle Wash Facility  
(West Side of Structure)

**Functional Evaluation:** This system appears fully functional and is used to wash a range of City-owned vehicles including those of the Transit, Fire, Police and Public Works Departments. The following observations were noted:

- The location of the Fueling Station affects the queue area for vehicles waiting to enter the Wash Facility from the west.
- Traffic congestion in peak transit bus periods restricts use by non-transit department vehicles.
- The wash building is occasionally used to store transit buses. This prohibits other vehicles from utilizing wash services when this occurs.
- The wash building is designed in such a way that it accommodates larger vehicles more easily than vehicles such as mini-vans or light trucks.
- The wash system design does not include the capability to re-circulate wash water. Space to add such as system is not currently available.

## Bus Transfer Station

**Description:** This structure was not included in the original design of the facility and was constructed in 2009. The Transfer Station was relocated to the Charles E. Robinson Transit Center from its previous downtown location at the intersection of High and Broadway Streets. The Bus Transfer Station is identified as Structure 6 on Exhibit 1 and shown on Exhibit 10. Its construction utilizes part of the existing sidewalk along Miller Street. The recent addition includes an enclosed, glass and steel-framed, covered waiting area and an accessible public restroom.

**Physical Analysis:** An enclosed waiting area and restroom are the only constructed elements, and they appear to be in good physical condition but are limited in size based on the volumes of passengers who utilize the facility. Buses queue in one continuous line against the south curb of Miller Street. The sidewalk along Miller Street serves as the passenger staging area adjacent to the buses.

**Functional Evaluation:** While the facility is functional in its current state, operational aspects of this facility could be improved. The following observations were made:

- The bus transfer station appears to be functional in this location. It is not located within the City's central business district, but it appears to be in close proximity to a number of users.
- Enclosed passenger waiting area should be capable of accommodating more passengers.
- The linear layout increases passenger walking distance between buses.
- For passenger convenience and comfort, consideration should be given to a covered transfer area with increased bench seating.
- The availability of public parking would enhance use of the transfer location as a park and ride location.
- A street-based transit station encourages pedestrians to cross the street at mid-block. This is a safety concern and traffic impediment.



Exhibit 10: Bus Transfer Station  
(North Side of Structure)

## Identification of Needs

The Needs analysis is a critical component of the planning and design process as it establishes the current and future functional space requirements for JEFFTRAN operations. This section documents the needs analysis performed for JEFFTRAN's administrative and operational functions. This study and concept development analyzed existing facilities, operational needs and growth projections provided by JEFFTRAN.

Programmed site conditions were identified including administrative and operational functions, safety conditions, pavement conditions, and pedestrian and vehicular circulation. Adjacent off-site conditions in relation to JEFFTRAN's operational needs were also considered.

As part of the program, an estimate of probable costs was developed. The costs are based on the use of durable materials, ease of maintenance, energy efficiency, acoustic considerations, and cost effective construction materials. Contingency amounts are included where prudent.

### Site Programming Sessions

Functional programming sessions were held to identify and quantify JEFFTRAN's facility needs. The consultant team met with staff on February 11, 2010 and March 24, 2010 in order to review existing facility and operational needs and to develop criteria for concept development of a JEFFTRAN facility to meet immediate and future requirements anticipated through the year 2030. The data-gathering sessions sought to:

- Provide an understanding of the current operation.
- Gain a complete understanding of the required functions.
- Identify problems and opportunities in order to improve or avoid such issues.
- Assist in the formulation of future facility plans.

The information developed during the programming sessions was used as a basis for the evaluation of a potential new JEFFTRAN facility. The results of the programming sessions are detailed in following sections of this report.

### Fleet Management

The JEFFTRAN operation currently has limited storage for buses. Fleet vehicles are fueled and washed on site. They are also serviced on site at City Maintenance, a shared maintenance facility that services all city vehicles including the Public Works, Fire and Police Departments.

### Vehicles

JEFFTRAN's current fleet includes 11 Ford Mini Van/Mini-buses which are approximately 25 feet in length. There are 8 Gillig Transit Coaches that are 35 feet in length. The fleet also includes 8 Freightliner C-Away Shuttle Buses and 2 backup International C-Away Shuttle Buses that vary in length from 28.5 feet to 33.5 feet. An example of a JEFFTRAN's vehicle is illustrated in Exhibit 11. In total, the fleet is made up of 29 vehicles including 2 backup buses. This number is projected to expand to 35 vehicles by year 2025. To provide maximum flexibility in a new or expanded bus storage facility, all spaces in the storage area should be designed to accommodate 35-foot buses.

Exhibit 11: Example of a JEFFTRAN Vehicle



Table 1 displays the current and projected vehicle fleet size based upon JEFFTRAN's anticipated growth in services. Growth in the vehicle fleet is based on JEFFTRAN's transportation services growth. It was concluded that an enclosed storage facility with additional vehicle capacity than what currently exists could accommodate the vehicle fleet needs through a fifteen-year horizon.

Table 1 Existing and Future Vehicle Fleet Size		
Vehicle Descriptions	2010	2025
JEFFTRAN Fleet Vehicles	29	35

The future facility should have the capability of accommodating 35 vehicles: 12 Ford Mini-Vans/Mini-Buses, 10 Gillig Transit Coaches and 13 Shuttle Buses. This number includes 2 back-up Shuttle Buses. This phase of programming is only reviewing Fleet Vehicle Parking.

**Transit Administration Office Programming**

The JEFFTRAN Administration building requires modern, efficient facilities to meet the needs of the agency's clients today and in the future. The following information represents the results of the programming process for a new JEFFTRAN Administration facility. The information was gathered by staff interviews on March 24, 2010 and by previous conversations conducted with staff. The new facility will provide space for JEFFTRAN management and operational functions.



The facility will include:

- Four hard-walled offices
- One conference room
- A workstation with cubicle space for 2
- Driver training room
- Copy/print/mail room
- File storage
- Large meeting room to accommodate up to 40 people
- Men's and Women's restrooms
- Locker space for drivers
- Private shower and dressing areas
- Janitor closet
- Supply room
- Computer/telephone room
- Break room with room for staff and driver use

Table 2 lists these programming requirements for the Transit Administration Office. Accommodations are required for up to 7 full-time and 1 part-time office administrative personnel and 30 drivers. Parking facilities to accommodate staff, driver and visitor vehicle parking will be included.

<b>Table 2 Transit Administration Office Needs</b>					
<i>Space Description</i>	<i>Type</i>	<i>Quantity</i>	<i>Area (SF)</i>	<i>Total Area (SF)</i>	<i>Comments</i>
Transit Division Director Office	Private Office	1	240	240	
Administrative Technician	Private Office	1	120	120	
Operations Assistants	Private Office	2	120	240	
Communication Operators	Workstation	2	72	144	
Reception / Public Lobby	Open	1	150	150	Seating for 4 plus rack displays of route info
Entry Space (Double Doors)	Open	1	117	117	
Training / Conference Room		40	20	800	Conference or Classroom Seating
Driver Check-In and Lunch Room	Shared	30	25	750	Lunch Tables, Food Prep, Vending
Driver Locker Room - Men and Women	Shared	40	15	600	Full Height Lockers for each Employee
Men's Toilet Rooms		30	7.5	225	
Women's Toilet Rooms		30	7.5	225	
Private Shower / Dressing Area	Unisex	4	36	144	Accessible to either Men or Women
Communications Closet	Enclosed	1	100	100	Includes Space for Server and Comm Equip.
Supply Storage	Enclosed	1	120	120	Storage for Misc Office Supplies and Records
Mechanical Room Space		1	150	150	Furnaces and Water Heater
Electrical Room		1	120	120	Electrical Switchgear
Printing/Copy/Mail	Open	1	150	150	
File Storage	Enclosed	1	120	120	
Private Conference Room	Enclosed	1	160	160	
Area Sub Total (SF)				4,558	
Increase for Circulation, File Space and Common Space			25.00%	1,140	
<b>TOTAL SPACE REQUIREMENT (SF)</b>				<b>5,698</b>	



### Maintenance Facility Programming

Table 3 lists the programming requirements for the Maintenance Facility. Although not outlined in this table, parking facilities to accommodate staff, driver and visitor vehicle parking will be included.

<b>Table 3 Maintenance Facility Needs</b>					
<i>Space Description</i>	<i>Type</i>	<i>Quantity</i>	<i>Area (SF)</i>	<i>Total Area (SF)</i>	<i>Comments</i>
Maintenance Division Director	Private Office	1	180	180	
Administrative Technician	Workstation	1	72	72	
Lead Mechanic	Workstation	1	72	72	
Parts Manager	Workstation	1	72	72	
Reception / Parts Delivery Area	Open	1	120	120	Seating for 4 plus rack displays of route info.
Lunch Room	Shared	14	25	350	Lunch Tables, Food Prep, Vending
Men's Toilet Rooms	Shared	1	200	200	1 WC + 2 Urinals + 2 Deep Sinks
Women's Toilet Rooms	Private	1	120	120	1 WC and Deep Sink in Private Restroom
Private Shower / Dressing Area	Unisex	1	36	36	Accessible to either males or females
Locker Room	Shared	14	15	210	Full Height Lockers for Employees
Mechanics Workbench Area	Open to Shop	10	75	750	Space for Mechanic's workbench and rolling tool chest
Rolling Tool Chest Storage Area	Enclosed	10	12	120	Lockable Storage Room for Rolling Tool Chests
Shared Tool Crib	Room or Cage	1	100	100	Space for shared tool storage
Fluid Storage Room	Enclosed	1	120	120	Storage of Service Fluids in tanks
Rebuild Area	Enclosed	1	500	500	
Parts Storage	Enclosed	1	750	750	Storages of small parts on shelves
Tire Changing	Enclosed	1	240	240	Space for Mounting and Balancing Tires
Tire Storage	Open Racks	100	0.67	67	
Communications Closet	Enclosed	1	36	36	Includes Space for Server and Comm Equip.
Vehicle Service Bays	Open Bays	8	900	7200	Open Bays for Servicing Vehicles
Mechanical Room Space	Enclosed	1	120	120	Furnaces and Water Heater
Electrical Room	Enclosed	1	150	150	Electrical Switchgear
Air Compressor Room	Enclosed	1	100	100	
Area Sub Total (SF)				12,435	
Increase for Circulation, File Space and Common Space 25%				3,109	
<b>TOTAL SPACE REQUIREMENT (SF)</b>				<b>15,544</b>	

## Bus Storage Facility Programming

A new or expanded facility will provide space for JEFFTRAN Bus Storage and associated minor vehicle maintenance. Table 4 lists the programming requirements for the Bus Storage Facility. Although not outlined in this table, parking facilities to accommodate staff, driver and visitor vehicle parking will be included.

<b>Table 4 Bus Storage Facility Needs</b>					
<i>Space Description</i>	<i>Type</i>	<i>Quantity</i>	<i>Area (SF)</i>	<i>Total Area (SF)</i>	<i>Comments</i>
Bus Service Workers	Shared	4	72	288	Workspace and space for records
Small Parts Storage	Enclosed	1	200	200	Space for Storage of small Transit Bus Parts.
Misc Equipment Storage	Enclosed	1	200	200	Storage of Portable Jacks , Lifts and Shared Tools
Air Compressor Room	Enclosed	1	100	100	Air Compressor, tank and dryer
Central Vacuum System Equipment	Enclosed	1	80	80	Room to house central vacuum equipment
Break Room / Lunch Room	Enclosed	1	150	150	Lunch Tables, Food Prep, Vending
Men's Toilet		1	150	150	1 WC + 1 Urinal + 1 Deep Sinks
Women's Toilet Rooms	Private	1	120	120	1 WC and Deep Sink in Private Restroom
Private Shower / Dressing Area	Unisex	1	36	36	Accessible to either males or females
Locker Room	Shared	8	15	120	Full Height Lockers for Employees
Communications Closet	Enclosed	1	120	120	Includes Space for Server and Comm Equip.
Mechanical Room Space	Enclosed	1	400	400	Furnaces and Water Heater
Electrical Room	Enclosed	1	180	180	Electrical Switchgear
Misc Work Area	Enclosed	1	200	200	General work area
Shared Tool Crib	Room or Cage	1	100	100	Space for shared tool storage
Fluid Storage Room	Enclosed	1	120	120	Storage of Service Fluids in tanks
Tire Storage	Open Racks	100	0.67	67	Storage of Bus Tires
Tire Changing Area	Enclosed	1	120	120	Space for Mounting and Balancing Tires
Small Vehicle Parking	Open Area	12	200	2400	Autos, Vans, Pickup Trucks
Mid Size Vehicle Parking	Open Area	13	380	4940	Small Buses, Para transit Buses,
Full Size Bus Parking	Open Area	10	600	6000	Indoor Parking of Full Size Buses
Bus Service Workers	Shared	4	72	288	Workspace and space for records
Small Parts Storage	Enclosed	1	200	200	Space for Storage of small Transit Bus Parts.
Area Sub Total (SF)				16,091	
Increase for Circulation, File Space and Common Space 25%				4,022	
<b>TOTAL SPACE REQUIREMENT (SF)</b>				<b>20,113</b>	



## Offsite Transfer Station Programming

Table 5 lists the programming requirements for an Offsite Transfer Station should one be recommended. Parking associated with this structure will be included in a final recommendation.

Table 5 Offsite Bus Transfer Station Needs					
<i>Space Description</i>	<i>Type</i>	<i>Quantity</i>	<i>Area (SF)</i>	<i>Total Area (SF)</i>	<i>Comments</i>
Passenger Waiting Area	Enclosed Area	20	15	300	Seating for 20 Passengers
Men' s Passenger Toilet	Private Unisex	1	100	100	Restroom with privacy lock
Women's Passenger Toilet	Private Unisex	1	100	100	Restroom with privacy lock
Customer Service Office	Office	1	216	216	Staff to sell passes and distribute literature.
Security Officer or Police Dept. Office	Office	1	160	160	
Employee Restroom	Private Unisex	1	70	70	For use by Customer Service and Security Only
Mechanical / Electrical Room	Enclosed Area	1	120	120	
Storage Room / Janitor Area	Enclosed Area	1	100	100	
Area Sub Total (SF)				1,166	
Increase for Circulation, File Space and Common Space 25%				292	
<b>TOTAL SPACE REQUIREMENT (SF)</b>				<b>1,458</b>	

## Site Selection Analysis

In order to meet the needs of its clients, JEFFTRAN must locate its new or enhanced transportation facility in an optimal location. An ideal location must enable JEFFTRAN to efficiently service its primary consumers, today and in the future. In this section of the report, the feasibility study consultant has developed an initial long list of possible facility sites and organizational options for JEFFTRAN as well as a definitive list of comprehensive criteria used for site evaluation. Some of the selection criteria are typical for a facility of this type. Other criteria have been modified or added based on comments and suggestions offered by City staff and the unique physical and organizational characteristics of the current JEFFTRAN facility. These location criteria have been used to assist in identifying the “preferred” option among the list of possible alternatives.

In conducting this phase of the feasibility study, the consultant has conducted the analysis based on the following general basic tenets:

- The preferred option shall serve to promote and enhance transit service in Jefferson City.
- The preferred option shall not have detrimental impacts on any other City function or agency;.
- The preferred option shall be practical and defensible under scrutiny.
- The preferred option shall serve as a basis for obtaining funding for implementation.

## General Evaluation of Sites – Location Criteria

JEFFTRAN staff and the consultant developed the initial location criteria. These criteria were then used to identify candidate options for the combined transportation facility.

The following criteria were used for evaluation of the prospective sites:

### *Size and Shape*

- The ideal site for a new combined operations/administration/storage facility should be approximately two (2) acres as determined by the programming exercise. Smaller sites could result in crowding of the site. Larger sites will result in excessive costs being incurred for property not needed for the facility.
- The site should ideally be rectangular with a minimum of physical constraints to development, such as extreme slopes, rock outcroppings, or streams. Typically, a rectangular or square site will allow for the most efficient layout of the site.

### *Access*

- *Service Area.* The site should provide good access to the primary service area. Vehicles dispatched from the facility will incur additional operating costs if the facility is in a remote location from the JEFFTRAN primary service areas. Sites adjacent to the central business district that do not negatively impact bus routes and operations are preferred.
- *Arterial Highway/Roadway System.* The site should have good accessibility to the region’s arterial roadway system both for revenue vehicles and employee vehicles.
- *Workforce.* The location of the facility should consider the residential location of the workforce, particularly drivers (because drivers usually are the largest employee group in a transit organization, such as JEFFTRAN, and may be most difficult to attract and retain).
- *Riders.* The location of the bus transfer component of the facility should consider the residential location of the riders. Any transit transfer location should, as a minimum, contribute to maintain ridership levels and should ideally promote enhanced ridership.



### ***Safety and Operations***

The preferred site will allow for safe operating conditions for JEFFTRAN vehicles and JEFFTRAN staff. This criterion focuses on safe access to and from a facility for both vehicles and staff, or pedestrians.

### ***Site Development Costs***

The preferred option should have lower development costs. Numerous factors affect the development cost of the site, including topography, geology, existence of structures, proximity to needed utilities, storm drainage issues and site access. Ideal sites will have level or slightly sloping topography, no existing structures, and existing utilities of sufficient size located nearby (electricity, gas, storm and sanitary sewers, water) to support the facility. The preferred site should also minimize or eliminate the need for off-site infrastructure improvements required to accommodate the facility. These improvements could include roadway modifications such as widening or new signals and increasing capacities of utilities. The preferred option should also limit disruption of current JEFFTRAN operations.

### ***Disruption of Services***

The preferred option should not impact bus routes, administrative activities, or other transit operations.

### ***Site Acquisition Cost***

The preferred site may have low acquisition cost; however, value for the cost is the objective. Inexpensive sites may result in higher costs of development (especially with respect to off-site public improvements) or introduce increased operating costs over the life of the facility.

### ***Land Use Compatibility***

The preferred site will be compatible with surrounding land uses and acceptable to the community. Zoning should permit the development of an administration/operations office with vehicle storage and potentially a maintenance facility, with associated wash and fueling. If the preferred property is not zoned properly for the development, a zoning change or variance should be obtainable.

### ***Environmental Considerations***

The site should be free from significant environmental issues, such as contaminated soil or presence of hazardous waste. The site should be such that a documented categorical exclusion from NEPA requirements can be justified.

## **Initial Identification of Options**

### **Background**

Seven candidate options were identified as having characteristics reflective of JEFFTRAN's location criteria. These options were developed after the consultant surveyed potential sites within and surrounding the central business district in Jefferson City.

Prior to development of the options that were examined, the consultant conducted a more general examination of possible candidate sites in the area and in downtown Jefferson City. Through interviews with City staff, the consultant understands that the City operates a public works and storage facility in the Hyde Park area of town, approximately three miles southwest of downtown. The consultant examined this site as a possible location for a complete transit facility. Due to the lack of connection with bus routes and the distance from existing or proposed transit transfer locations, this site was not considered. In general, possible sites in the downtown area were not zoned properly for a transit facility, were too small or irregular in shape to support the transit operations, or were located poorly for supporting the existing bus routes. Additionally, some potential sites studied near the existing train station are located on very challenging terrain and would require riders to walk up and down very steep hills for bus access.

For these reasons, the consultant concentrated on locations on the periphery of downtown for siting a new facility. In particular, it became apparent through the analysis that the least disruptive option for bus operations, bus routes, and servicing current riders was at or near the existing facility on E. Miller Street. Based on this premise, the options that are studied focus on variations of redevelopment or reconfiguration of JEFFTRAN's operations at or near the existing facility. The consultant also researched possible properties within the greater Jefferson City area through local real estate resources but none met the criteria for supporting a transit facility. Most notably, parcels of sufficient size that would accommodate the facility are located on the outskirts of the city. For the reasons listed above related to proximity to riders and support of bus routes, these sites were not considered.

Following a preliminary presentation to City planning staff, the final list of options was identified. A detailed discussion of the advantages and disadvantages of the options is presented. The options, with a summary referencing the location criteria, are also presented as a supplementary evaluation tool shown in Table 6.

### **Option 1: East Miller Street, Scenario A**

This option as illustrated in Exhibit 12 located in Appendix A relocates the existing JEFFTRAN operations north of the existing Charles E. Robinson Transit and Maintenance Complex on the north side of E. Miller Street on the half-block bordered by E. Miller Street on the south, Cherry Street on the west, and Chestnut Street on the east. This parcel is currently owned by the City and contains a variety of public works storage buildings, sand and other material storage bins, and an existing two-story historical building used as a Masonic Lodge. Compared to the activities conducted at the city maintenance facility, this site is underutilized. This option calls for construction of a new JEFFTRAN operations/administration building as well as a bus storage building. The operations and administration offices would occupy the existing historical structure onsite with the addition of more office space to the north of the historical structure. A covered corridor or connection gasket would join the historical and new structures. This adaptive reuse would give the building a new use while retaining its historic features. A dedicated bus wash building and bus fueling facility could also be located on this site. This option is based on the assumption that the existing maintenance facility, which is part of the Transit and Maintenance Complex, will be retained at its current location on the south side of E. Miller Street. Existing JEFFTRAN offices could be utilized by maintenance staff. The existing complex's wash and fueling facilities would be maintained and would be dedicated to City fleets, exclusive of buses. The existing bus storage building could be maintained and converted into a companion maintenance facility for general use. Alternatively, the existing storage building could be demolished, resulting in more staging or maneuvering room for vehicles accessing the City maintenance building or fueling and wash stations.

This Option alone does not promote the growth of transit services in the urban core of the City. In order to promote transit services in the downtown area, this Option can be coupled with construction of a transit transfer in the future on the parking lot site, immediately east of the proposed convention center development between Washington Street and Broadway, immediately south of McCarty. Based on interviews with staff, the City is in the process of acquiring all properties on the block for future development. As shown in Exhibit 13 in Appendix A, a bus loop featuring a central island with 10 bus slots could be constructed on the parking lot site. Access in and out of the station would be from Washington Street. The Station could be integrated with the proposed garage and could be constructed prior to and independently of the proposed municipal garage.

### **Advantages**

1. The expansion site is currently owned by the City, so no new land will have to be acquired. With no new land being acquired, external funding can be concentrated on the physical improvements for a new transit center.
2. The existing historical structure (Masonic Building) onsite would be utilized and adapted for a new use, which is ideal in preserving the historical integrity of the building and its environs. This will also allow for future expansion on other areas of the property.
3. The expansion site is gently graded from east to west (approximately 3%-4%).



4. This Option will allow JEFFTRAN operations to continue uninterrupted while the new facility is being constructed.
5. This Option will not impact current bus routes.
6. This Option will allow for primary transit transfer to remain on E. Miller Street, continuing to serve a high density of riders in the immediate area.
7. The Option will reduce congestion on the existing complex site.
8. The Option will preserve bus maintenance in close proximity to bus storage and JEFFTRAN administrative offices.
9. Transition to a new facility for JEFFTRAN staff will be simple.
10. Maintenance Staff and Operators will continue to utilize the existing parking lot east of Chestnut Street. Administrative Staff Parking would be relocated adjacent to the new operations/administrative building.
11. JEFFTRAN can continue to use the sidewalk-based transit transfer area on the south side of E. Miller Street.
12. Utilities are present to serve the proposed development.
13. This Option creates a more integrated municipal campus in combination with the existing complex site.
14. JEFFTRAN may be able to sell or transfer its physical assets on the complex site that can be converted to use for other City departments exclusively. This situation primarily focuses on the existing JEFFTRAN offices and possibly the bus storage building. Proceeds from the sale of unique JEFFTRAN assets to the City could contribute to the funding stream for the project.
15. Inclusion of a new downtown transit transfer station as part of this Option will establish a significant transit presence in a strategic location in the central business district close to State offices and the proposed new convention center.

#### Disadvantages

1. This Option alone does nothing to promote the growth of transit services in the urban core of the City. In order to promote transit services in the downtown area, this Option can be coupled with construction of a transit transfer station that could be constructed in the future on the parking lot site, immediately east of the proposed convention center development between Washington Street and Broadway, immediately south of McCarty.
2. The transit transfer area along the south curb of E. Miller Street will be maintained. This could continue to impede traffic along E. Miller Street while the buses queue along the curb. (Note: While maintaining this transit transfer along the block is also listed as an advantage relative to lack of disruption, the ideal situation would be to have buses queue out of the primary drive lanes. This and any Option maintaining the transit transfer station at this location will allow for little or no reconfiguration of the queuing area because of the narrow right of way space between the curb and the retaining wall on the north side of the existing complex. Additionally, on the south side of the street there are a series of electrical poles located adjacent to the curb which would hinder modifications on this side of the street.)
3. The site is framed with City streets on the east, west, and south, and is bordered by an abrupt grade change on the north which has the potential to limit future growth.
4. Some possible environmental clean-up may be required on the site resulting from past uses for City Public Works. Demolition of existing structures will be required as well.

#### Option 2: East Miller Street, Scenario B

This option is identical to Option 1 but rather than relocating the administration/operations office north of E. Miller Street in the historical building, the existing JEFFTRAN offices will be expanded and renovated. This option continues to include construction of a new JEFFTRAN bus storage building, bus wash building, and bus fueling facility on the north side of E. Miller Street. This Option will require construction of new space on the south side of the existing JEFFTRAN administration/operations offices. This expansion would be a challenging process, especially given the stacked arrangement of the offices partially overlapping the maintenance facility structure below and the



extreme grade changes immediately to the east of the existing complex. Also challenging would be relocation of the current office functions to a temporary facility while the expansion is occurring.

### **Advantages**

Advantages listed for Option 1, except for numbers 2 and 13 apply to Option 2. Additional potential advantages include the following:

1. Reuse of an existing structure is an environmentally sound process.
2. This Option would allow for some expansion of a bus storage building, or wash or fueling facilities on the site north of E. Miller Street.

### **Disadvantages**

Disadvantages 1, 2, 3 and 4 listed for Option 1 apply to Option 2. Additional disadvantages include the following:

1. As outlined above, renovation and expansion of the existing JEFFTRAN offices presents a considerable design challenge as well as being disruptive and requiring staff to relocate temporarily.
- 2.
3. This Option could result in fewer proceeds from the sale of JEFFTRAN assets to the City that could be used for the project.

### **Option 3: Split Scenario A**

This option is identical to Option 1 but rather than maintaining bus maintenance operations at the existing Transit and Maintenance Complex, this function would relocate to a combined maintenance facility in the City's Hyde Park area. It is the consultant's understanding that the City has expressed an interest in developing the Hyde Park facility and relocating certain functions there. While this is likely an efficient maintenance scenario for other City vehicles, especially with respect to new development that continues to occur on the City's western borders, it is not efficient for JEFFTRAN to send buses to such a remote facility. This would increase dead head costs for travel to and from the bus storage area on E. Miller Street. It is also a cumbersome logistical process for staff to transfer vehicles three miles from JEFFTRAN's center of operations. The most efficient scenario operationally for JEFFTRAN is to have all major functions – administration, fueling, washing, and storage, in close proximity. Relocating the bus maintenance function to Hyde Park offers no advantage for JEFFTRAN.

### **Advantages**

Advantages listed for Option 1, except for item number 8, apply to Option 3. Possible advantages include:

1. This Option could result in redevelopment possibilities for the current Transit and Maintenance Complex.

### **Disadvantages**

All disadvantages listed for Option 1 are applicable to Option 3. Additional disadvantages include the following:

1. Hyde Park vehicular maintenance location is remote from remaining JEFFTRAN operations. This causes logistical problems for JEFFTRAN for relocation of buses from storage location to maintenance location.
2. This Option will reduce JEFFTRAN efficiency and increase costs for maintenance of buses.
3. This Option would leave the City with an empty maintenance building at the existing complex.

#### Option 4: Split Scenario B

This Option is identical to Option 2 but involves relocation of bus maintenance operations to the Hyde Park location. The analysis offered for Option 3 applies to this Option as well. Of all the Options discussed to this point, this is collectively the most disruptive to JEFFTRAN operations. This Option would be disruptive to office operations for staff as well as being inefficient with respect to bus maintenance.

#### Advantages

No new advantages would be realized over what was outlined in Option 2. JEFFTRAN would remain in its current location so there would be no disruption to the bus routing and transit transfer area.

#### Disadvantages

The disadvantages with this Option are numerous and include those listed under Options 2 and 3. The most notable disadvantage is the combined disruptive effects of relocating bus maintenance and creation of temporary office space for JEFFTRAN staff while the current office is being expanded and renovated.

#### Option 5: Vacation of E. Miller Street

This Option is identical to Option 1, but could be applicable to any of the Options discussed since the focus is on the transit transfer component of the facility. Currently, E. Miller Street serves as an eastern portal into the central business district. This is a minor artery compared to E. McCarty Street one block north. Based on observations by the consultant, the traffic is relatively light on E. Miller Street compared to traffic volumes on E. McCarty Street. This lighter traffic load has meshed well with having a curbside traffic transfer center on the south side of E. Miller Street. Although having buses queue along the curb constricts the width of the street, impeding other car traffic on E. Miller Street is rare.

While the curbside traffic transfer center on the south side of E. Miller Street functions efficiently, having buses queuing on the south curb does constrict the through lanes on the street for other traffic. In order to mitigate this congestion and develop a municipal “campus” environment JEFFTRAN and associated City maintenance services, the consultant has studied the feasibility of vacating E. Miller Street from Cherry Street to Chestnut Street.

Vacating E. Miller Street would give JEFFTRAN the opportunity to reconfigure the transit transfer area along the length of the block. Angled bus slots could be created along the south side of the street while still allowing ample room for a passing lane for buses accessing empty slots. The roadway would continue to be one-way to the east, but would be dedicated to buses. One criticism of this arrangement is that angled bus slots would not accommodate all the JEFFTRAN buses that currently queue in a line along the curb. Alternatively, buses can be parked diagonally, side by side, progressively filling stalls from the east end of the block to the west. Buses would exit sequentially, east to west similar to conditions currently. (Note: This diagonal parking slot scenario was used successfully at the Wabash Station transit center in Columbia, Missouri. Buses fill and vacate slots in order, with no backing movements required.) Vacating E. Miller Street would allow JEFFTRAN the flexibility of reconfiguring the current 50-foot right of way into a bus transfer area that could be customized to accommodate JEFFTRAN's unique bus operations. Regardless of what bus parking configuration is used, buses will not be allowed to block the entrance into the parking lot behind the Masonic Hall at the corner of Cherry and E. Miller Streets.

There are a number of challenges associated with this Option. Most notably, the City would have to approve the street vacation. Neighborhood groups and citizens will be given the opportunity to review the proposed vacation plan

and voice any opposition they may have. A traffic study will be required along E. Miller Street to verify traffic counts and lend additional justification for the vacation. This study will have to take into account the traffic volumes along E. Miller Street, which will undoubtedly be impacted by improvements planned for the Whitton Expressway and numerous interchanges planned east and west of the site. The public will also have to be educated on the impacts of the vacation and recommended routing around the “superblock” that will be created.

(Note: There are precedents in the region where a street has been strategically vacated in order to improve the operations of a transit agency. For example, the transit provider in Springfield, Missouri, City Utilities was recently successful in having a street vacated in their complex. The public street that once separated maintenance and vehicle storage operations now serves as a dedicated, internal driveway and staging area for the agency.)

### Advantages

All the advantages associated with Option 1 are applicable to this Option with the following notable additions:

1. E. Miller Street will be vacated, reconfigured, and converted into a dedicated transit center.
2. Interference from general traffic will be eliminated through the block from Cherry to Chestnut Streets.
3. Vacating E. Miller Street will give JEFFTRAN more flexibility in layout of their operations. For example, setback requirements for new buildings will no longer apply along the vacated length of E. Miller Street. This could yield some additional development space on the north side of E. Miller Street.
4. Maintenance of the vacated portion of E. Miller Street would remain the responsibility of the City.

### Disadvantages

1. The City will have to approve the vacation of E. Miller Street. Depending on opposition from the public, this process could take a several weeks or months to accomplish.
2. The public will have to be convinced that the vacation is acceptable.
3. The public will have to be educated on altering routes around the vacated E. Miller Street.
4. The length of the vacation could be limited to the length of E. Miller Street east of the Masonic Hall in order to assure non-interference with the parking lot east of the Hall.
5. Vacation could pose a traffic-flow problem once interchanges along the Whitton Expressway are constructed east and west of the site.

### Option 6: Development of Half Block on McCarty Street between Adams and Jackson Streets

This Option involves the development of the half-block bounded by E. McCarty Street on the north, Keith Major Field on the south, Adams Street on the west and Jackson Street on the east. The block is immediately east of the John G. Christy Municipal Building and is currently occupied by a city-owned parking lot that currently accommodates 250 parking spaces. The block is served by the standard city utilities and is generally graded from northwest to southeast on approximately a 4% slope. The block has roughly 2.3 acres of developable area.

This Option assumes that the Central Maintenance facility will remain in its current location. JEFFTRAN administration/operations offices and staff parking, as well as bus storage, fueling and wash facilities, would be re-located on this block. The block would provide enough space for transit transfer center located off of McCarty Street. This would remove the transit transfer function from the south curb of E. Miller Street. This is the one Option studied that consolidates all JEFFTRAN functions, exclusive of maintenance, on the same site.

The biggest impediment to the development of this site is its location within the 100-year floodplain of Wears Creek as indicated on current FEMA maps. The city would be required to significantly raise the natural grades of this site to achieve a developable parcel. In order for the site to be insured, approximately 8,000 cubic yards of fill would need to be imported to raise the site a minimum of one foot above the 100-year floodplain.

Raising the grade of the site will require the city to verify that development in the floodway will not cause a rise upstream of the site through “no-rise” certification. Failing this certification, a hydraulic study would be required by FEMA in order to modify their flood maps. The first step is acquisition of a Conditional Letter of Map Revision (CLOMAR) which follows an application to FEMA for alterations in a floodplain. Once the construction of the project is complete, FEMA would review it and then issue a Letter of Map Revision (LOMAR). Based on preliminary estimates, this process could take up to one year to complete and could cost tens of thousands of dollars. Should the development impact drainage on parcels north of the property, the City might also be required to purchase the properties or otherwise mitigate the impact that runoff might have on those properties.

Because this Option would displace 250 parking spaces, a parking structure would be required in order to accommodate parking in the area. The City has indicated there is available land for this structure south of the existing Municipal Building. The grade of this site could accommodate a two-level parking structure with access to the lower parking level off of Adams Street and access to the upper level from the alley bordering the garage on the west. It is anticipated that the existing Emergency Vehicle Response Building, which exists there, would be demolished to construct the garage but it could be incorporated into the new garage on either level. The preliminary geometry studies of this garage indicated a capacity of approximately 200 vehicles. This would not entirely cover the loss of the existing 250 parking spaces that would be displaced by the development of the transit site to the east.

### Advantages

1. This Option consolidates all JEFFTRAN functions, except vehicle maintenance, on one site.
2. The site is adjacent to the existing complex and will have no impact on current bus routes.
3. This Option will allow JEFFTRAN operations to continue uninterrupted while the new facility is being constructed.
4. This Option will reduce congestion on the existing complex site by allowing for the removal and replacement of the bus storage building there.
5. This Option does not impact the public works yard on the north side of E. Miller Street between Cherry and Chestnut Streets.
6. Transition to the new site would be simple. JEFFTRAN could maintain operations at its current location until the facility is constructed.
7. This Option will allow for primary transit transfer to continue serving a high density number of riders in the immediate area; namely the students attending the nearby school.

### Disadvantages

1. This is the most costly of any of the Options studied. Development of the land on this half-block would add tens to hundreds of thousands of dollars to the conceptual cost estimate presented earlier in this study.
2. Considerable time will be required to acquire permits, perform environmental reviews and obtain necessary documentation allowing the parcel to be developed in the floodway. JEFFTRAN would have to remain in their current facilities for a longer period of time with this scenario than Options not involving development in a floodway.
3. There will be considerable earthwork and site development costs with this option. Some environmental remediation could be required for site development for this Option.
4. This Option removes the transit transfer function off of E. Miller Street and onto E. McCarty Street. This will reduce the periodic congestion on E. Miller Street but could potentially create more congestion on E. McCarty Street.
5. The construction of a parking to replace the displaced parking spaces on site would be costly.



Table 6  
Summary Evaluation

Site	Location Criteria							
	Size and Shape	Access	Safety and Operations	Site Development Costs	Disruption of Services	Acquisition Costs	Land Use Compatibility	Environmental Considerations
Option 1 – East Miller Street Scenario A	<ul style="list-style-type: none"> <li>- Public works lot across from existing complex is rectangular (2 acres); including the parcel on SW corner containing historical building.</li> <li>- Significant grade change at north side of lot limits future development north.</li> <li>- Site also limited for future development by streets east and west.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to U.S. 63 via interchange at Clark Avenue.</li> <li>- Access to major points downtown and south via High Street, Lafayette Street and McCarty Avenue.</li> <li>- Within 5.5-mile radius of service area.</li> </ul>	<p>No apparent safety risks although appropriate signage and pavement markings will be required in order to designate pedestrian pathways in and around the transit center.</p>	<ul style="list-style-type: none"> <li>- Site is gently graded 3-4%.</li> <li>- Utilities are present.</li> <li>- Appropriate zoning is in place.</li> </ul>	<p>-JEFFTRAN operations can continue uninterrupted during construction.</p>	<ul style="list-style-type: none"> <li>- Property North of Miller already owned by City.</li> <li>- Acquisition costs zero or minimal; some contribution for relocation of City public works services may be required.</li> </ul>	<ul style="list-style-type: none"> <li>- Zoned for commercial development.</li> <li>- Property used as public works facility currently.</li> <li>- Historical building present on SW corner of property N. of Miller would be utilized as part of this project, therefore proper procedures for incorporating the structure would be utilized.</li> </ul>	<p>No apparent significant environmental considerations.</p>
Option 1 – East Miller Street Scenario B	<ul style="list-style-type: none"> <li>- Public works lot across from existing complex is rectangular (1.81 acres); does not include small parcel on SW corner containing historical building.</li> <li>- Significant grade change at north side of lot limits future development north.</li> <li>- Site also limited for future development by streets east and west and south by historical building if not included in the development.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to U.S. 63 via interchange at Clark Avenue.</li> <li>- Access to major points downtown and south via High Street, Lafayette Street and McCarty Avenue.</li> <li>- Within 5.5-mile radius of service area.</li> </ul>	<p>No apparent safety risks although appropriate signage and pavement markings will be required in order to designate pedestrian pathways in and around the transit center.</p>	<ul style="list-style-type: none"> <li>- Site is gently graded 3-4%.</li> <li>- Utilities are present.</li> <li>- Appropriate zoning is in place.</li> </ul>	<p>-JEFFTRAN administrative operations would require relocation during construction.</p>	<ul style="list-style-type: none"> <li>Property North of Miller already owned by City.</li> <li>- Acquisition costs zero or minimal; some contribution for relocation of City public works services may be required.</li> </ul>	<ul style="list-style-type: none"> <li>- Zoned for commercial development.</li> <li>- Property used as public works facility currently.</li> <li>- Historical building present on SW corner of property N. of Miller would not be incorporated into the design.</li> </ul>	<p>No apparent significant environmental considerations.</p>



Table 6 Cont'd

Site	Location Criteria							
	Size and Shape	Access	Safety and Operations	Site Development Costs	Disruption of Services	Acquisition Costs	Land Use Compatibility	Environmental Considerations
Option 3 – Split Scenario A	<ul style="list-style-type: none"> <li>- Public works lot across from existing complex is rectangular (2 acres); including small parcel on SW corner containing historical building.</li> <li>- Significant grade change at north side of lot limits future development north.</li> <li>- Site also limited for future development by streets east and west.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to U.S. 63 via interchange at Clark Avenue.</li> <li>- Access to major points downtown and south via High Street, Lafayette Street and McCarty Avenue.</li> <li>- Within 5.5-mile radius of service area.</li> </ul>	<p>No apparent safety risks although appropriate signage and pavement markings will be required in order to designate pedestrian pathways in and around the transit center.</p>	<ul style="list-style-type: none"> <li>- Site is gently graded 3-4%.</li> <li>- Utilities are present.</li> <li>- Appropriate zoning is in place.</li> </ul>	<ul style="list-style-type: none"> <li>- JEFFTRAN administrative operations can continue uninterrupted during construction.</li> <li>- JEFFTRAN maintenance occurs at remote location.</li> </ul>	<ul style="list-style-type: none"> <li>- Property North of Miller already owned by City.</li> <li>- Acquisition costs zero or minimal; some contribution for relocation of City public works services may be required.</li> </ul>	<ul style="list-style-type: none"> <li>- Zoned for commercial development.</li> <li>- Property used as public works facility currently.</li> <li>- Historical building present on SW corner of property N. of Miller would be utilized as part of this project, therefore proper procedures for incorporating the structure would be utilized.</li> </ul>	<p>No apparent significant environmental considerations</p>
Option 4 – Split Scenario B	<ul style="list-style-type: none"> <li>- Public works lot across from existing complex is rectangular (1.81 acres); does not include small parcel on SW corner containing historical building.</li> <li>- Significant grade change at north side of lot limits future development north.</li> <li>- Site also limited for future development by streets east, west, and south if the historical building is not utilized as part of the development.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to U.S. 63 via interchange at Clark Avenue.</li> <li>- Access to major points downtown and south via High Street, Lafayette Street and McCarty Avenue.</li> <li>- Within 5.5-mile radius of service area.</li> </ul>	<p>No apparent safety risks although appropriate signage and pavement markings will be required in order to designate pedestrian pathways in and around the transit center.</p>	<ul style="list-style-type: none"> <li>- Site is gently graded 3-4%.</li> <li>- Utilities are present.</li> <li>- Appropriate zoning is in place.</li> </ul>	<ul style="list-style-type: none"> <li>- JEFFTRAN administrative operations would require relocation during construction.</li> <li>- JEFFTRAN maintenance occurs at remote location.</li> </ul>	<ul style="list-style-type: none"> <li>- Property North of Miller already owned by City.</li> <li>- Acquisition costs zero or minimal; some contribution for relocation of City public works services may be required.</li> </ul>	<ul style="list-style-type: none"> <li>- Zoned for commercial development.</li> <li>- Property used as public works facility currently.</li> <li>- Historical building present on SW corner of property N. of Miller would not be incorporated into the design.</li> </ul>	<p>No apparent significant environmental considerations</p>



Table 6 Cont'd

Site	Location Criteria							
	Size and Shape	Access	Safety and Operations	Site Development Costs	Disruption of Services	Acquisition Costs	Land Use Compatibility	Environmental Considerations
Option 5 Vacation of E. Miller St.	<ul style="list-style-type: none"> <li>- Public works lot across from existing complex is rectangular (2acres); including small parcel on SW corner containing historical building.</li> <li>- Significant grade change at north side of lot limits future development north.</li> <li>-Site also limited for future development by streets east, west, and south if historical building is not utilized as part of the development.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to U.S. 63 via interchange at Clark Avenue.</li> <li>- Access to major points downtown and south via High Street, Lafayette Street and McCarty Avenue.</li> <li>- Within 5.5-mile radius of service area.</li> <li>-East Miller may become more utilized once the interchange of the Whitton Expwy at Lafayette is constructed.</li> </ul>	<p>No apparent safety risks although appropriate signage and pavement markings will be required in order to designate pedestrian pathways in and around the transit center.</p>	<ul style="list-style-type: none"> <li>- Site is gently graded 3-4%.</li> <li>- Utilities are present.</li> <li>- Appropriate zoning is in place.</li> </ul>	<p>-Slight disruption of bus routes during reconfiguration of Miller Street.</p>	<ul style="list-style-type: none"> <li>- Property north of Miller is already owned by City.</li> <li>- Acquisition costs zero or minimal; some contribution for relocation of City public works services may be required.</li> </ul>	<ul style="list-style-type: none"> <li>- Zoned for commercial development.</li> <li>-Property used as public works facility currently.</li> <li>- Historical building present on SW corner of property N. of Miller would be utilized as part of this project, therefore proper procedures for incorporating the structure would be utilized.</li> </ul>	<p>No apparent significant environmental considerations.</p>
Option 6 Development of North Half Block on McCarty between Jackson and Adams Streets	<ul style="list-style-type: none"> <li>- Half block is 2.3 acres and rectangular.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to U.S. 63 via intersection at Monroe Street.</li> <li>- Access to major points downtown and south via McCarty and Monroe Streets.</li> <li>- Within 5.5-mile radius of service area.</li> </ul>	<p>No apparent safety risks although appropriate signage and pavement markings will be required in order to designate pedestrian pathways in and around the transit center.</p>	<ul style="list-style-type: none"> <li>- Site will require significant grading and earthwork due to its location within a floodplain.</li> <li>- Utilities are present.</li> </ul>	<p>-No disruption of services.</p>	<ul style="list-style-type: none"> <li>- Development costs would include permitting and mitigation costs due to the floodplain location.</li> </ul>	<ul style="list-style-type: none"> <li>- Currently zoned Public Land Use and City-owned.</li> </ul>	<p>Environmental evaluation will be required prior to development.</p>

## Rational for Selection of Preferred Site

**Option 1: East Miller Street Scenario A**, was judged to be the preferred Option based on the analysis and is recommended for JEFFTRAN's transit facility. This Option has the characteristics that best meets the selection criteria and provides the City with the most flexibility with configuration of improvements on the current public works lot. This adaptive reuse of the historical structure being utilized as a Masonic Lodge would give the building a new use while retaining its historic features. This Option also allows for JEFFTRAN to stay in their current location while a new facility is constructed and maintain their operations adjacent to the City's combined maintenance facility. This Option is also cost effective in that development would take place on City-owned property and will allow potential funding to be directed for facility development rather than land acquisition. Selection of this Option is based on bus maintenance services remaining at the combined city maintenance center. As an alternate to this Option, the City should consider installing a transit transfer station downtown in combination with the proposed parking garage at McCarty and Broadway Streets. Development of this transit center will most likely be deferred because a plan for development of the parking garage or the adjacent convention center has not been established by the City. Any FTA funding for this downtown transit center would most likely have to be sought in the future and will not be part of any grant application for improvements at the E. Miller Street facility.

**Option 2: East Miller Street, Scenario B**, is judged too disruptive because JEFFTRAN administration/operations offices will have to temporarily relocate while their building is expanded and renovated. The design of a building expansion would be challenging due to the extreme adjacent grades.

**Option 3: Split Scenario A and Option 4: Split Scenario B** were also judged the least attractive and evaluated as being overly disruptive and impractical. There is no cost or logistic benefit to JEFFTRAN to have bus maintenance in a relatively remote location like the Hyde Park area of the City regardless of any development scenario at the E. Miller Street location.

**Option 5: Vacation of East Miller Street** was determined to be unfeasible due to the proximity of East Miller to the new proposed interchange for the Rex M. Whitton Expressway at Lafayette. It is likely that East Miller would become more utilized with the increase in traffic in this region and therefore vacation of East Miller Street would impede traffic flow.

**Option 6: Development of North Half Block on McCarty between Jackson and Adams Street** is unfeasible due to its location within the Wears Creek Floodway. Secondly, nearly 250 City parking spaces would be displaced by development at this location and it has been determined that the cost to build a structure to replace these spaces would outweigh the benefit of locating the transit operation there.



## Estimate of Probable Costs

Using current unit costs for the type of construction contemplated, an opinion of probable cost was prepared for the major building components of a new facility as summarized in Option 1 of the Site Selection Analysis. The projected costs are based on information developed during the programming sessions as outlined in the Needs analysis performed for this study. This estimated cost is based exclusively on building replacement and does not include site work, specialized equipment cost, design, land acquisition and contingency. The cost opinion presented should be accepted as preliminary and will evolve as the study progresses.

**Table 7  
Estimate of Probable Cost**

CATEGORY OF COST	QUANTITY			Line Item	Comments/Remarks	
	AREA/NO.	UNIT	COST	Cost		
<b>Construction Costs</b>						
<b>1. Administration Building:</b>						
1) Office Area	1,804	SF	\$ 135	\$ 243,540	<ul style="list-style-type: none"> <li>- Costs include allowances for mechanical, electrical, and plumbing.</li> <li>- Costs are based on a pre-engineered steel structural system on typical spread or isolated reinforced concrete footings and a concrete slab on grade.</li> <li>- Costs do not include tools or specialized, loose equipment costs.</li> </ul>	
2) File/Records/Supply Storage	240	SF	\$ 110	\$ 26,400		
3) Conference/Training/Break Room	1,550	SF	\$ 135	\$ 209,250		
6) Toilets/locker room	594	SF	\$ 200	\$ 118,800		
5) Support Areas (mech/elect/etc)	370	SF	\$ 100	\$ 37,000		
Subtotal	4,558			\$ 634,990		
Circulation Factor @ 25%	1,140			\$ 158,748		
<b>Total for Transit Administration Building</b>	<b>5,698</b>	<b>SF</b>		<b>\$ 793,738</b>		
<b>2. Vehicle Storage Building</b>						
1) Vehicle Storage Bays	13,340	SF	\$ 50	\$ 667,000		<ul style="list-style-type: none"> <li>- Vehicle storage bay allowances are based on vehicles parking end-to-end.</li> <li>- Costs do not include specialized tools or lifts.</li> <li>- Building is assumed to require vehicles to enter on one end of the building and exit on the other end. (similar to current facility).</li> <li>- Based on interviews, some maintenance functions such as tire changes, could be performed in this facility.</li> </ul>
2) Restrooms, locker rooms	426	SF	\$ 200	\$ 85,200		
3) Work Areas	200	SF	\$ 65	\$ 13,000		
4) Break Room/Lunch Room	150	SF	\$ 135	\$ 20,250		
5) Bus Service Workers (office/cubes)	288	SF	\$ 55	\$ 15,840		
6) Equipment Rooms	1,000	SF	\$ 75	\$ 75,000		
7) Misc.	687	SF	\$ 50	\$ 34,350		
Subtotal	16,091			\$ 910,640		
Circulation Factor @ 25%	4,022			\$ 227,660		
<b>Total for Vehicle Storage Building</b>	<b>20,113</b>	<b>SF</b>		<b>\$ 1,138,300</b>		
<b>3. Fleet Maintenance Facility*</b>						
1) Vehicle Maintenance Bays	7,200	SF	\$ 120	\$ 864,000	<ul style="list-style-type: none"> <li>- Pre-engineered building assumed.</li> </ul>	
2) Restrooms, locker rooms	566	SF	\$ 200	\$ 113,200		
3) Offices, Workstations	468	SF	\$ 65	\$ 30,420		
4) Break Room/Lunch Room	350	SF	\$ 135	\$ 47,250		
5) Electrical, Air-Compressor, Mechanical Rooms, Fluids	526	SF	\$ 55	\$ 28,930		
6) Misc. Work Areas	2,527	SF	\$ 75	\$ 189,525		
7) Misc.	798	SF	\$ 50	\$ 39,900		
Subtotal	12,435			\$ 1,313,225		
Circulation Factor @ 25%	3,109			\$ 328,306		
<b>Total for Vehicle Maintenance Facility</b>	<b>15,544</b>	<b>SF</b>		<b>\$ 1,641,531</b>		
<b>4. Vehicle Wash Facility*</b>						
1) Shell building (drive-thru, single lane)	1,600	SF	\$ 50	\$ 80,000	<ul style="list-style-type: none"> <li>- Costs include reinforced masonry wash building and associated equip. room adjacent.</li> <li>- Costs include an automatic bus wash system, similar to the system used by the City presently.</li> </ul>	
1) Automated Wash System	1	EA	\$150,000	\$ 150,000		
<b>Total for Vehicle Wash Building</b>	<b>1,600</b>	<b>SF</b>		<b>\$ 230,000</b>		
<b>5. Vehicle Fueling Facility*</b>						
1) Fuel Tanks (3, 12,000 gal each)	3	EA	\$ 45,000	\$ 135,000	<ul style="list-style-type: none"> <li>- Tanks assumed to be above-ground.</li> <li>- Three pumps, 6 dispensers assumed.</li> <li>- Remote monitoring station assumed.</li> <li>- Assumed 40 ft. x 24 ft., two lane structure.</li> </ul>	
1) Pumps, piping, leak detection	1	EA	\$ 90,000	\$ 90,000		
3) Inventory Control	1	EA	\$ 20,000	\$ 20,000		
4) Lighted Canopy and foundation, tank fencing	1	EA	\$ 30,000	\$ 30,000		
<b>Total for Vehicle Fueling Facility</b>				<b>\$ 255,000</b>		
<b>Total Estimated Building Replacement Cost (Sum of 1, 2, 3, 4 &amp; 5)</b>				<b>\$ 4,058,569</b>	<ul style="list-style-type: none"> <li>* Denotes that these are shared facilities.</li> <li>Costs for operation of these are split among different revenue streams, including FTA grant funding and various City department funding.</li> </ul>	

## Environmental Analysis Findings

An Environmental Analysis for Probable Categorical Exclusion for the proposed JEFFTRAN facility at the preferred site was performed as part of this study and is attached at the end of this feasibility analysis. The environmental analysis has determined that the proposed project will have no adverse environmental impact. Findings for specific areas of the analysis are shown in Table 8 below and detailed in the Categorical Exclusion.

<b>Table 8 Environmental Analysis Findings</b>	
<b>Environmental Impact</b>	<b>Analysis Finding</b>
Land Acquisitions and Relocations Required	One acquisition with no relocation impacts.
Land Use and Zoning	No negative impact.
Noise Quality	No negative impact.
Water Quality	No negative impact.
Air Quality	Regulate during construction.
Wetlands	No negative impact.
Flooding	No negative impact.
Navigable Waterways and Coastal Zone	No navigable waterways or coastal zones.
Ecologically Sensitive Areas	No sensitive areas; therefore no impact.
Endangered Species	No negative impact.
Traffic and Parking	No negative impact.
Energy	No negative impact.
Historic Properties and Parklands	No negative impact.
Construction	Regulate during construction.
Visual	No negative impact.
Community Disruption	No negative impact.
Safety and Security	No negative impact.
Secondary Development	No negative impact.
Consistency with Local Plans	No negative impact.
Environmental Justice	No negative impact.
Public Notification	No negative impact.
Hazardous Materials	No negative impact.
Vibration	Vibration may increase slightly; no negative impacts are anticipated.
Prime Farmland	No negative impact.

## Conclusions and Recommendations

The fundamental purpose of the feasibility study is to provide the City with information upon which to base decisions regarding the JEFFTRAN transportation operations facility. This section summarizes the conclusions and recommendations from the feasibility study.

### *Conclusions*

The feasibility study concludes that JEFFTRAN's current facilities are inadequate and should be replaced. The major findings include:

- Existing space is not readily expandable and is inadequate to meet the needs of the current JEFFTRAN operation. It will not accommodate future needs as the operation grows.
- Growth in administrative staff levels has far exceeded the administration building's ability to accommodate this growth in any organized manner. Current space utilization is very disorganized and congested in all portions of this building.
- The storage building continues to function as the original design intended; however it will not accommodate the current vehicle fleet size.

Option 1 East Miller Scenario A is the preferred site for JEFFTRAN's operations.

- The expansion site is currently owned by the City, so no new land will have to be acquired. With no new land being acquired, external funding can be concentrated on the physical improvements for a new transit center.
- The existing historical structure (Masonic Building) onsite would be utilized and adapted for a new use, which is ideal in preserving the historical integrity of the building and its environs. This will also allow for future expansion on other areas of the property.
- This Option will allow JEFFTRAN operations to continue uninterrupted while the new facility is being constructed.
- This Option will not impact current bus routes.
- The Option will reduce congestion on the existing complex site.
- The Option will preserve bus maintenance in close proximity to bus storage and JEFFTRAN administrative offices.
- Transition to a new facility for JEFFTRAN staff will be simple.
- Maintenance Staff and Operators will continue to utilize the existing parking lot east of Chestnut Street. Administrative Staff Parking would be relocated adjacent to the new operations/administrative building.
- This Option will allow for primary transit transfer to remain on E. Miller Street, continuing to serve a high density of riders in the immediate area.
- JEFFTRAN can continue to use the sidewalk-based transit transfer area on the south side of E. Miller Street.

### *Recommended Next Steps*

Accept the Facility Feasibility Study and approve the facility improvement plan detailed in this report.

Accept the proposed conceptual design as a basis for receiving Section 5309 Funding.

Obtain environmental clearance by submitting environmental finding to FTA for a Documented Categorical Exclusion in accordance with 23 CFR Part 771.117 (d) (8) for the proposed project.

Begin the process of securing Section 5309 Funding and continue with the project development process.

## Appendix A

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12/17/2010 - 4:13:34 PM - G:\KC09\0304\Site\FIGURE 01.dgn



2400 PERSHING ROAD  
SUITE 400  
KANSAS CITY, MISSOURI 64108  
PHONE: 816-329-8600  
FAX: 816-329-8602

CONSULTANTS

JEFFTRAN  
FEASIBILITY STUDY  
JEFFERSON CITY, MISSOURI

MARK	DATE	DESCRIPTION

PROJ NO: P101090304  
SCALE: AS SHOWN  
DATE: 12/17/2010  
DESIGNED BY: JLR  
DRAWN BY: MDG  
CHECKED BY: JLR

SHEET TITLE  
OPTION 1  
EAST MILLER ST.  
SCENARIO A

EXHIBIT 12

### CONCEPTUAL SITE LAYOUT PLAN



