Agenda

U.S. 71 Transit Study

Stakeholder Advisory Panel

10:30 a.m.

July 19, 2012

Mid-America Regional Council, 600 Broadway, KCMO

Welcome and Introductions
Tom Gerend, MARC

Public Involvement Update*
Patty Gentrup, Shockey Consulting

Tier One Definitions, Evaluation Methodology, Initial Evaluation Findings
Lisa Koch, Parsons Brinckerhoff

Next Steps
Lisa Koch, Parsons Brinckerhoff

Attachments:

***Please note that a summary of the July 12 and July 17 open houses will be provided to the advisory panel at its meeting**.*

U.S. 71 Transit Study

MEMORANDUM

TO: Project Partnership Team

FROM: Patty Gentrup, Shockey Consulting Services

DATE: July 18, 2012

RE: **U.S. 71 Transit Study Stakeholder Advisory Panel Suggestions**

At its June 27 meeting, the Stakeholder Advisory Panel discussed the alternatives under consideration as part of the U.S. 71 Transit Study. Due to time constraints, members were not able to share all their thoughts, concerns, ideas. Several did take time to forward those to the consultant team. They are presented here, edited only for length or format.

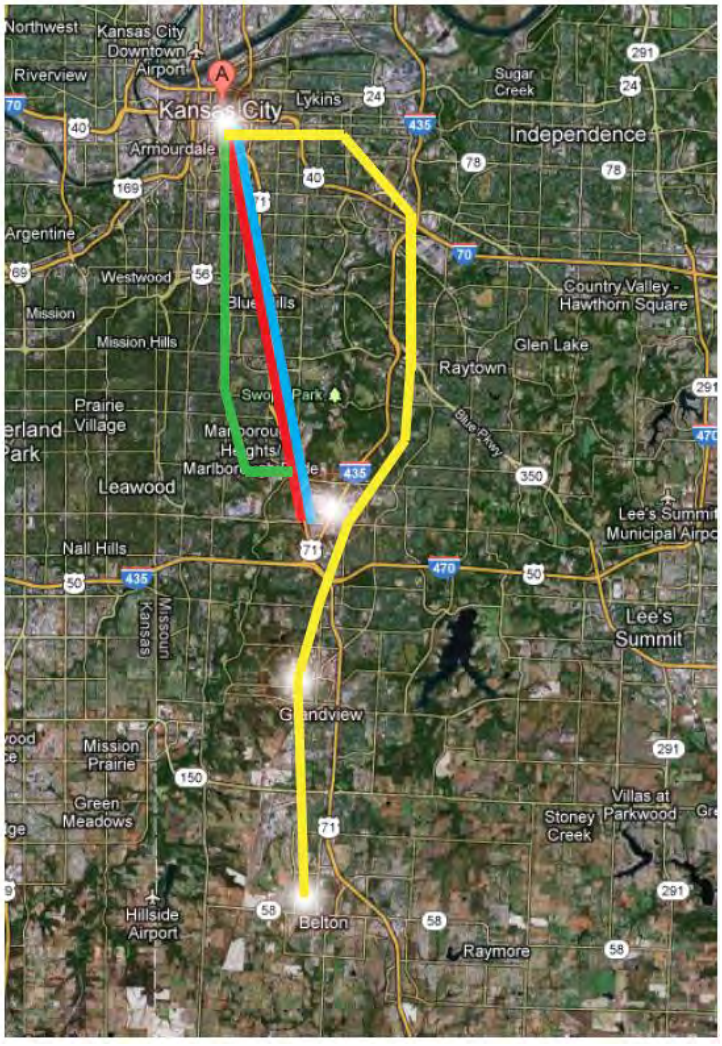
Gunnar Hand, South Kansas City Alliance Group

I think it is imperative that we try to broaden our vision of the possible and not become stuck in the old debates around the City about light rail. I found it very interesting that in response to my questions Tom Gerend did say we could develop a phased implantation strategy as part of this AA. So, here are my thoughts (with map shown on next page):

1. If we denote the street car in downtown and then show the idea of its expansion to the Plaza that is currently seeking funding, it seems logical that we should then show a potential future expansion on the Country Club right-of-way to Waldo and on to Dodson (green line), which just so happens to be right on US 71. We do not necessarily need to consider this as an alternative, but it should be noted on the map as part of our comprehensive vision for transit in this corridor. Plus, if we choose the alternative that is on US 71, then this streetcar line would meet it at its two termini.
2. I would prefer a Bus BRT and a Light Rail line right down the US 71 corridor (Red and Blue). I think most of the congestion on 71 is from the Grandview, Belton and even Harrisonville traffic coming into the City. When it reaches Bruce Watkins Drive, there is a pinch point. I would hate to see this "grand boulevard" turned into a freeway with more roadway, whether it is designated for transit or not. Everyone adjacent to Bruce Watkins Drive uses US 71 for a different purpose than those commuters, and therefore deserve a separate mode of transportation. These two alternatives should go from downtown (and maybe one day cross the river into North Kansas City) to Bannister Road/Bannister Mall.
3. The final alternative is the DMU on the South Kansas City rail line to Bannister, Grandview and Belton/Richard Gebauer. To make this line competitive with driving your car, I think they need to make up that time for stops by going from Bannister directly into downtown. If we could remove these commuters from their cars, then we could relieve congestion at the pinch point and then even re-boulevard US 71 north of 51st (a big dream I know, but aren't we deconstructing highways across the country?!) to make it more permeable and stitch back these communities that were ripped apart.

In addition:

- Anything from Grandview south is too far away for light rail. Plus, the stops between Bannister and Downtown are irrelevant to this demographic. They would also be redundant considering the Prospect and Troost bus lines.
  A bus on 71 would be constrained by existing congestion and do little for economic development and ridership. Plus, bus ridership is already covered by the Troost MAX and what sounds like might be the next MAX on Prospect between Bannister and Downtown.
- The DMU is the best alternative to be built first. You can take the train to Bannister then hop on the Troost MAX if needed. Otherwise you skip the entire commute by heading directly into downtown.
  Eventually with the reintroduction of the Trolley Line you could connect Bannister to Dodson.



Map provided by Gunnar Hand

Dennis Randolph, City of Grandview

Bus Rapid Transit:

Advantages	• Moderate to low investment needing only buses and station/bus stop amenities • Seems to service most higher population-density areas • Seems to have best (most) feeder-route connection opportunities • Shortest route (end to end) • Not tied to rail, so routes can be modified easily • Can potentially contract with private sector to provide this service, so investment for government would be minimal
Disadvantages	• No station shown at NNSA which most likely has great potential ridership • No direct connection to UMKC campus • Subject to normal traffic delays if no special pre-emption is provided • Seems to be a lack of stations north of 350 Hwy • Least opportunity to draw trips directly from the I-49/US71 corridor
Notes	• While alignment is shown ending in the area of NNSA, there is no station shown. Station should be included at NNSA instead of at 150/I-49 interchange • With closing of NNSA facility on Bannister Road, will there be enough activity to justify the development of stations for the systems? • Additional stop at I-49 and Main St (Grandview) would also have good ridership potential with IHOP University. • You may want to consider a branch for the BRT from its intersection with Main St. (Grandview) along Main Street/Highgrove to Scherer Pkwy to Pryor Rd to Chipman Rd to 291 Hwy. This route provides service to the most densely populated residential and commercial areas of Lee's Summit and a route that can provide service either north to downtown KCMO or south to the NNSA/Centerpoint area. A similar extension out 150 Highway to 291 Hwy would service the developing area in Lee's Summit with a direct connection to NNSA and a route to downtown KCMO • You may also want to give some thought or consideration to the provision of a "Zip Car" type service at selected stations, especially at the end of lines, or places where there is no local bus connector. Zip Cars are already offered on the UMKC campus, so it is not a big leap to use them at other places.

Enhanced Street Car

Advantages	• Direct connection to UMKC campus • Seems to service most higher population-density areas • Seems to have best (most) feeder-route connection opportunities • Shortest route (end to end)
Disadvantages	• No stations shown in Grandview • Line shown to end at I-49/150 Hwy interchange. Should extend to NNSA with enhanced station • Significant infrastructure improvements needed for tracks or guideways • Special signalization needed for pre-emption and special phasing • Tied to rail so route cannot be easily changed • Potentially requires parking areas for users. • Least opportunity to draw trips directly from the I-49/US71 corridor.
Notes	• While an Enhanced Streetcar alternative Alignment is shown, it appears to be an extension of the base alignment as opposed to a parallel N-S alignment. • Concern about where Streetcar would be in Grandview. We are currently talking with MoDOT regarding the changing of parts of the frontage road back to two-way operation.

DMU

Advantages	• Best opportunity for net travel-time decreases through corridor • Best opportunity to provide high-capacity service • "Highest-type" of system that would make KC Metro area look like a major player" • High potential for node development at stations
Disadvantages	• No connection to NNSA site • No direct connection to UMKN campus • Alignment seems to avoid all densely populated areas that would have potential riders. • Will take the longest to implement. • Seems to not have many stations, some stations shown do not seen to have much potential to serve dense customer area. • Seems to abut or run through areas of low population density • Loop at north end with the Downtown Connector as the west side could be made less expensive if Rail connected Circulator in the middle and formed a "T" • Many curves will reduce operating speed and cause maintenance problems • Must share KCSRR tracks with freight service • Potentially requires large parking areas/garages for rail users. • Several new bridges are needed (at Grandview road and Blue Ridge Blvd) to provide double tracking that will allow efficient operations of mixed (freight and passenger) traffic. • Longest route (end to end) • Tied to rail so route cannot be easily changed • Railroad rights-of-way are notoriously ugly and unkept. It would be important to include clean-up and significant aesthetic improvements for this alternative to make sure it presented the "picture of the Kansas City Community" that we want to get out. • Generally need a large bureaucracy to run such a system • Depends on Federal-aid to get built
Notes	• Need to show proposed station(s) where I-70 and Rock Island lines intersect • It is always worthwhile to at least look at the possibility of running light rail up the median of existing US 71/I-49.

General notes about Grandview:

- Please note that Grandview consists of 100 percent Environmental Justice Census Tracts, the only substantial community in the KC Metro area to have such a characteristic. All three alternatives thus serve a community that needs to have such a service.
- Please note that because there is such poor connectivity across I-49 in Grandview (there is currently only one crossing {Harry Truman Drive} that has adequate pedestrian facilities) that there is a disadvantage for each system that does not either traverse both sides of I-49, or does not include improvements so that pedestrians can safely cross I-49.
- None of the alternatives appear to provide a connection of direct service to either the Belvedere Community (SE corner of 150 Hwy @ I-49, or the proposed Gateway Commons Site (NW Corner 150 Hwy @ I49)). Both these area provide potential ridership, and regional shopping opportunities.

Mark McDowell, Transit Action Network

All of the opinions expressed below are based solely on the maps provided and my general knowledge of transit. Therefore they are developed without specific information about the corridor or actual costs of the various alternatives.

Each mode is reviewed below in terms of their likely advantages and disadvantages under each of the purposes and needs provided in the last stakeholder's meeting.

Transportation Needs

- **Improve travel time for travelers making transit time competitive with the automobile and enhance transit user's experience.**

  None of the alternatives seem obviously able to meet this requirement. Existing rail follows a very circuitous route to downtown and probably would have worse transit times than the automobile. Enhanced streetcar could improve travel times but it enters city streets at about 47th street and, presumably, would operate like a streetcar from there: 35mph, frequent stops, etc. So that would probably not be faster either. Meanwhile BRT would be stuck in the same traffic on US 71 as automobiles face, so it would not be faster either. Bus-on-shoulder might be more competitive with automobiles as might the enhanced streetcar if it followed the US 71 alignment to say 23rd (?) Street and then went over to Main.

- **Connect the US 71 study area with the greater Kansas City Metropolitan area via multimodal transportation options.**

  Any of the three alternatives would accomplish this.

- **Serve and enhance mobility options of transit dependent users in the study area.**

  All three options meet this criterion. Probably the best is BRT because of the relatively larger population living along that route and accessibility to BRT on prospect or Prospect/US 71.

Land Use / Economic Development Need Statements

- **Connect key activity centers in the study area with enhanced transit as a strategy for enticing development and redevelopment to these areas.**

  Transit doesn't entice development, but efficient transportation infrastructure can; but, only if it goes where people want to. And, other inputs create a congenial development environment.

  There is one study I am aware of that suggests that BRT has a positive influence on development. Generally, my understanding is that double-blind studies on transit and development suggest there is no relationship between the two, one way or the other. However, it is the case that property values around stations generally appreciate with rail. There are also numerous case studies where rail, with additional inputs for developers, have resulted in substantial property appreciation and development in large areas along parts of a rail corridor. Therefore, this criterion strongly suggests one of the rail options.

- **Support local planning initiatives that call for enhanced transit for their residents.**

  Any of the three alternatives is consistent with this criterion but each community probably has their own local preference.

Livability / Sustainability Need Statements

- **Increase transportation options for study area residents**

  And

- **Reduce dependence on automobiles**

  Any of the three alternatives will accomplish the first task and, unless transit times can be made competitive, none will accomplish the latter.

- **Promote the protection, preservation, and access to key environmental assets in the study area.**

  I don't see how any of the three alternatives affect this goal one way or the other. We have land use planning for this purpose.

- **Promote workforce development in the study area through better job access and through direct jobs offered by enhanced transit.**

  All three alternatives would provide better job access to Kansas City. It should, however, be noted that only 14% of area jobs are in downtown Kansas City. BRT is favored by this criterion because of it's accessibility to neighborhoods and the number of destinations naturally served by such a system.

  The two rail options would create many more jobs during construction than BRT. But, in the longer run, BRT might directly create marginally more jobs than rail.

New Criterion – my own – Likely Cost Effectiveness

BRT should prove to be much more cost effective than either of the rail alternatives. Enhanced Streetcar would be cost prohibitive. Commuter rail is hard to evaluate without knowing more about the current traffic level, infrastructure in place, etc. But it would certainly be more costly than BRT and, because of large amount of industrial real estate along the route, probably not have ridership much greater than BRT.

Lou Austin, Three Trails CID

Transit Infrastructure Context: I recommend the stakeholders be provided with some basic information regarding the existing transit infrastructure assets within the Highway 71 Corridor – a briefing on the various modes - rail, bus, highway, bike and trail – existing and planned together with ridership and gaps in services - to ensure the proposed alternatives can be accurately evaluated in the context of the current transit situation.

Socio-Economic Context: Provide the stakeholder members with a description of the Highway 71 Corridor including base contextual data regarding population demographics – for example the Corridor appears to encompass 8 zip codes, 120 square miles, 75,000 acres, 160,000 population, zip code household income ranging from $24,266 to $53,313 with a current transportation cost of 33% of household income and zip code residential densities ranging from .35 to 2.31 per acre. It does not appear valid or credible for the stakeholder members to conduct transit evaluations and make recommendations in a vacuum, that is, without reasonable awareness and recognition of the overall Corridor description, socio-economic demographics and relevant characteristics. Equally important, stakeholder awareness of e Corridor socio-economic demographics enables the Committee and the Partnership team to accurately assess and address important issues relating to social justice and equity in the context of the transit alternatives process in the Corridor.

General Comments – "Enhanced Streetcar" option: I find "enhanced streetcar" confusing because this term is not recognized in the literature whereas "streetcar" and "light rail" are well defined and accepted transit terms. I assume the "enhanced streetcar" option is, in reality, an extension of the proposed downtown streetcar system (Phase 3?) running generally from Volker south to Grandview via Bruce Watkins/Highway 71. This option is a new build light rail line that replicates the active KCS rail asset already existing in the Corridor. A reasonable, prudent and conservative approach would suggest first consideration be given to enhancing the KCS rail asset that is already there to accommodate passenger service which is undoubtedly more economical than building a new light rail railroad south in Bruce Watkins/Highway 71 parallel to the existing KCS line. Additionally, streetcar vehicles are not FRA compliant which means equipment used on this light rail corridor would be unable to interchange on the other two corridors under study assuming their final local preferred option is DMU/FRA compliant. The indicated station placement in this option looks a little odd and does not appear to provide very effective service/access/interchange opportunities with the complimentary bike/trails/auto/bus transit assets in the corridor thus reducing the potential intermodal benefits. Economic development opportunities under this option appear to be limited . Finally, the literature indicates the effective range of a streetcar is approximately 5 miles more or less. The run to Grandview from River Market is upwards of 20 miles making this option much too long and time consuming to truly present a viable alternative to the existing auto/bus service modes in the Corridor. For the above stated reasons this option deserves elimination from further consideration.

General Comments – "BRT" option: My question here is are we talking about true BRT (buses operating in dedicated lanes/stations) or "Faux BRT" (buses operating within existing traffic lanes perhaps utilizing an express schedule with fewer stops). True BRT would entail significant and costly upgrading of the Highway 71 infrastructure – to accommodate in effect two new bus dedicated traffic lanes. A persuasive argument could be made that the capital investment would be better and

more economically spent in upgrading the existing rail corridor which represents a dedicated transit right of way. Faux BRT (sometimes referred to as "fast bus") would place the buses in existing highway traffic and congestion which does not appear to offer any material advantages over the current automobile mode. In addition there are other relevant issues to consider: Efficient and practical public access to the bus stations, efficient interchange with existing bus routes, and possible cannibalization of existing north/south bus lines. Economic development opportunities under this option appear to be minimal. A stand alone BRT option does not appear to offer many advantages, however when BRT/bus is strategically and carefully crafted into the expanded "hybrid cross" of a regional rail/bus alternative described below significant intermodal transit benefits are created for the Corridor.

General Comments – Regional Rail Alternative: This option utilizes the existing KCS rail asset which appears to be more economical and strategic capital investment than constructing new streetcar or dedicated BRT traffic lanes. This railroad line is currently classified as Class 4 rail which would allow DMU trains to travel up to 79 miles per hour making it more time competitive than the automobile mode. Using FRA/ DMU compliant equipment creates maximum system interchange flexibility and efficiency by allowing common equipment to be dispatched over the entire system to meet demand.

Strategic station placement at the Bannister Redevelopment site (Schumacher Station @ Bannister Road/KCS), Ruskin area (I-470/Blue Ridge Blvd), Main Street/KCS Grandview and 150 Highway/KCS provides convenient public access and interchange opportunities with other transit modes. For example, the I-470/Blue Ridge station could serve existing bus service on Blue Ridge Blvd., function as a pedestrian/bike trailhead for the KATY TRAIL CONNECTOR/Metro Green system and has easy auto access from I-470 and Blue Ridge Blvd. This station site is also surrounded by substantial adjacent workforce residential populations. Schumacher Station offers direct connection to the soon to be extended Troost Max bus service, trailhead opportunities for the regional 3-Trails Corridor/KATY TRAIL CONNECTOR/Metro Green system with convenient east west (Johnson County, KS/Eastern Jackson County, MO) auto access also with substantial adjacent workforce populations. It will also serve the Bannister redevelopment area employment center comprising approximately 1,500 acres as well as the nearby Bannister Federal Complex redevelopment site. Likewise, the Grandview and the 150 Highway stations offer similar benefits. All of the indicated stations in this alternative offer significant economic development opportunities in the form of transit oriented development.

This option provides an significant opportunity to expand and reinforce the bus service within the Corridor by connecting the bus service into the rail stations – and adding additional bus service on key mid town/ inner city routes such as Prospect. For example, the Troost, Blue Ridge, Prospect and other area bus routes can have terminuses at the recently approved Troost Max end of the line station (and proposed City health care facility) @ Blue Ridge Blvd/Bannister Road. The rail and the bus service can be fully balanced in a mutually complimentary manner to serve a much wider geographic area and population with the rail stations initially weighted to the south end of the Corridor and the bus service concentrated in the middle and northern end of the Corridor. In this manner employment options are generated from the core areas via convenient bus to rail stations to destination/employment points south and vice versa. The hybrid cross of regional rail and bus offers more benefits than either option on a standalone basis and the literature suggests that a strong

rail/bus/trail intermodal connectivity substantially enhances the opportunities for economic development, sustainability, expanded quality of life, mobility and investment attraction.

In anticipation of future increase in freight traffic on this rail line I recommend this hybrid cross alternative be phased to insure adequate passenger capacity is always available on this rail line. Phase I would entail using the existing KCS rail from 150 Highway north all the way to Sheffield (then to River Market or Union Station). A bare bones "fast start" start could be as simple as acquiring passenger trackage rights from the KCS initially for a limited number of passenger trains at peak passenger travel times. The objective is to secure a contractual passenger trackage right placeholder from the KCS with a minimum of capital investment – with some of the potential savings possibly being utilized to expand bus service in the Corridor connected to the rail stations. The goal is to get rail service fully complimentary to bus service (and pedestrian/bike trails) in the Corridor up and running as efficiently and economically as possible.

A second step in Phase I might entail selective railroad capacity upgrades, primarily in the segment from Grandview to 87th Street in the form of double tracking which would allow for additional passenger trains and expanded service times. From 87th Street northbound the absence of stations would enable passenger trains to reach maximum speed en route to River Market or Union Station to more effectively compete with the auto mode.

Phase II would be implemented when the existing KCs single track from 87th Street to Sheffield (north of I-70) approaches capacity and includes two options:

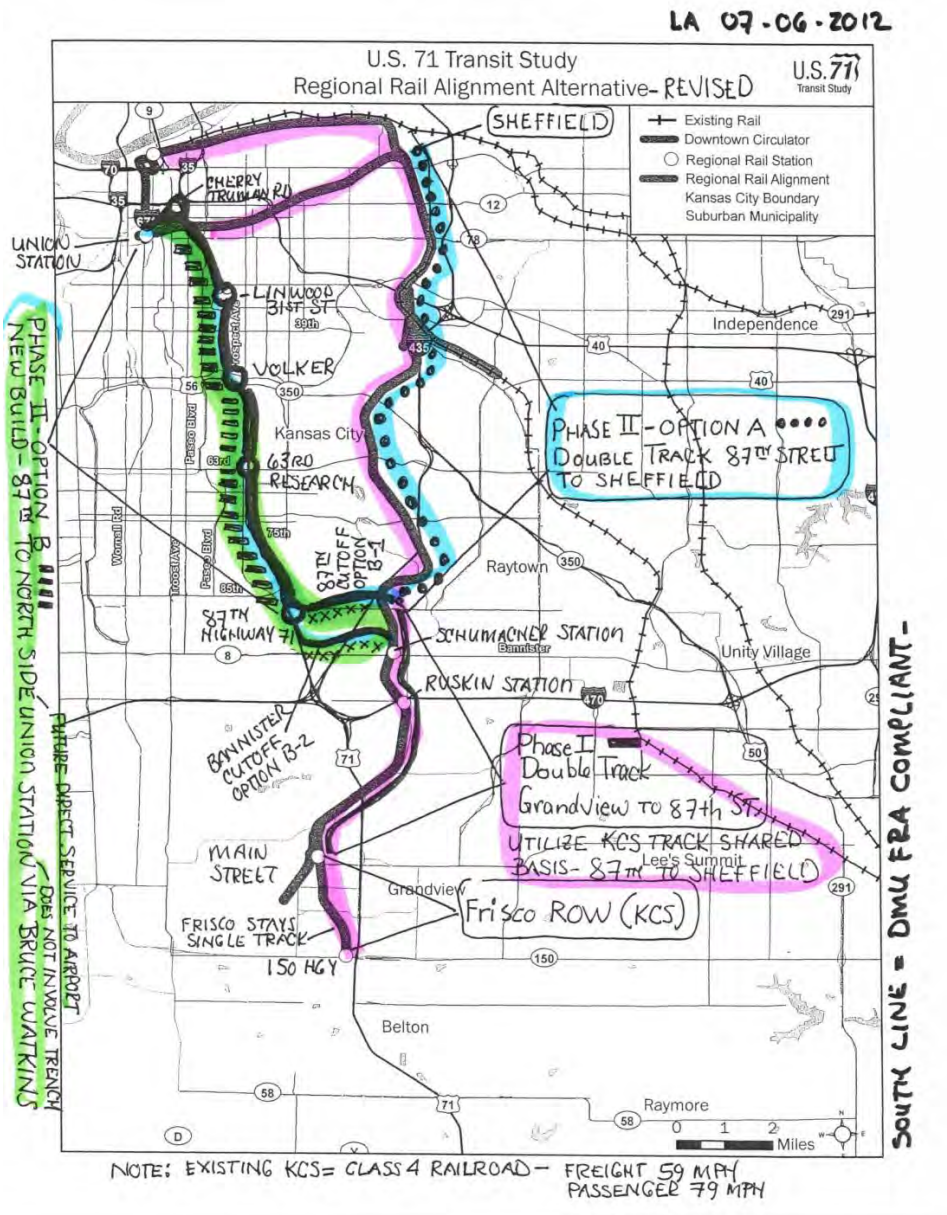
Option A - Double track the KCS from 87th Street north to Sheffield, or Option B - leave the KCS in the Bannister Road/87th Street area going west over to the old Frisco ROW adjacent to Highway 71 then north in the existing median of Bruce Watkins (utilizing the existing dedicated transit corridor in Bruce Watkins) to the north side of Union Station.

Option A would entail significant capital investment to build additional bridges, expanded right of way needs to accommodate current slope criteria and due to a difficult topography, limited access and significant park land, offers practically no opportunity for economic development to offset and justify the additional capital cost of double tracking this segment of the railroad.

Option B creates station opportunities in the 87th Street/Dodson area, Research Hospital area, Volker Road area (connection to the proposed Phase II of the downtown streetcar line), Linwood/31st Street area and the Sprint Center/governmental center. It will not interfere with the existing stop/light critical neighborhood connections at Gregory, 59th Street and 55th Street (no at grade crossings) and appears to be consistent with the Court approved Bruce Watkins plan. Option B offers substantial east/west bus connectivity in the Bruce Watkins corridor, numerous economic development opportunities in areas where it is desperately needed, and greatly expanded access from the urban core/mid-town/UMKC – Brush Creek area to employment centers in the Bannister redevelopment area, Grandview, 150 Highway corridor and Centerpoint effectively addressing existing social justice and mobility issues. Option B would provide direct access to Union Station

without involving the complicated issues relating to the “trench”. Being on the north side of Union Station also creates the opportunity for future direct connection to the airport from Grandview and points north along the way.

Based on the above my preferred option is the expanded hybrid cross regional rail/bus alternative. I will forward under separate email a map portraying the expanded regional rail alternative and look forward to a vigorous, engaging discussion at our next stakeholders meeting. Thank you for your consideration and best regards.



Map provided by Lou Austin

MEMORANDUM

TO: U.S. 71 Transit Study Stakeholder Advisory Panel

FROM: Lisa Koch, Parsons Brinckerhoff

Patty Gentrup, Shockey Consulting Services

DATE: July 18, 2012

RE: Alternatives, evaluation and initial results

Introduction

At its July 19 meeting, the U.S. 71 Transit Study Stakeholder Advisory Panel will discuss the:

- Tier 1 Definition of Alternatives
- Process used to evaluate those alternatives
- Initial evaluation of alternatives.

This memo provides an overview of these issues; a formal presentation will be made at the meeting, with ample time for discussion.

Definition of Alternatives

(A complete copy of the Definition of Alternatives Paper is available upon request.)

The Tier 1 Definition of Alternatives defines the set of mode and alignment alternatives considered in the U.S. 71 Transit Study. Please note that the suggestions provided by the advisory panel are not included in this document but will be addressed through the course of the meeting.

No Build Alternative

The No Build Alternative is required for inclusion in the Alternatives Analysis (AA) by the Federal Transit Administration (FTA) and serves several purposes. It helps define the problem to be solved, identifies the consequences of "doing nothing," establishes a baseline for evaluating the benefits and costs of other alternatives, and is a start for meeting National Environmental Policy Act (NEPA) evaluation requirements.

The No Build Alternative includes:

- all capital improvements identified in the fiscally constrained MARC 2040 Long Range Transportation Plan (LRTP) that will be implemented by 2035.
- the existing bus network augmented with the recommendations listed in the KCATA *Comprehensive Service Analysis Key Corridor Network*.

TSM Alternative

The Transportation System Management (TSM) Alternative is also required for inclusion in the AA. The alternative includes relatively low cost transit service improvements and represents the best that can be done to improve transit service short of a major capital investment in a fixed-guideway.

While considered to be a real alternative that could be chosen, the TSM alternative can also serve as a baseline for assessing the added benefits and costs of the more capital intensive alternatives. It can also serve as the first phase of a major investment or, in the event funding is not found for the ultimate LPA, as a fallback alternative.

The TSM Alternative includes:

- all of the projects included in the No Build Alternative as well as additional roadway capital improvements and bus network enhancements.
- an expansion of KC Scout Intelligent Transportation Systems.
- the following transit capital improvements:
    - New park and ride lots:
        - U.S. 71 & M-150 – Expanded/Upgraded Large Park & Ride

- Truman Corners Shopping Center – New Small Park & Ride
- Bannister Road – Small Park & Ride

- Capital bus enhancements on U.S. 71 (such as bus on shoulder), which will be identified and evaluated as part of Tier 2.
- New intermodal transfer point in vicinity of Hillcrest and Bannister Road.
- Seven U.S. 71 / Prospect BRT station pairs.

The TSM Alternative also includes the No Build bus network, with additional changes designed to provide a comparable level of service in terms of headways and hours of operation to the more capital intensive alternatives. This includes:

- Extension of local bus service along Prospect to Bannister Road and Blue Ridge.
- Extension of Express Bus service (Route #471) from current terminus Point at U.S. 71 & Red
- Bridge Road to U.S. 71 & M-150. The extended service would serve park and ride lots at U.S.
- 71/M-150 and at Truman Corners Shopping Center. Number of trips would be increased from 5 AM and 5 PM to 8 AM and 8 PM.

Alternative 1: Bus Rapid Transit Alternative

Two alignments are anticipated for the BRT alternative--a Commuter BRT on U.S. 71 and an Urban BRT on Prospect.

1. On the U.S. 71 Commuter BRT alignment, northbound buses would operate from a park and ride/transit station facility located at the U.S. 71 / M-150 Highway interchange. From this park & ride/station the buses would enter onto U.S. 71 via M-150 and proceed north on U.S. 71. At Truman Road the buses would exit onto westbound Truman Road and proceed to Holmes Street, turn north on Holmes to 11th Street, west on 11th to Baltimore, north on Baltimore to 10th Street, east on 10th Street to Main and South on Main to the 10th & Main Transit Center.

   Southbound buses would operate from the 10th and Main Transit Center and proceed south on Main Street to 12th Street, east on 12th to Charlotte Street, South on Charlotte to Truman Road, east on Truman Road to U.S. 71 Highway and then south on U.S. 71 to the end of line at the M-150 park & ride facility.

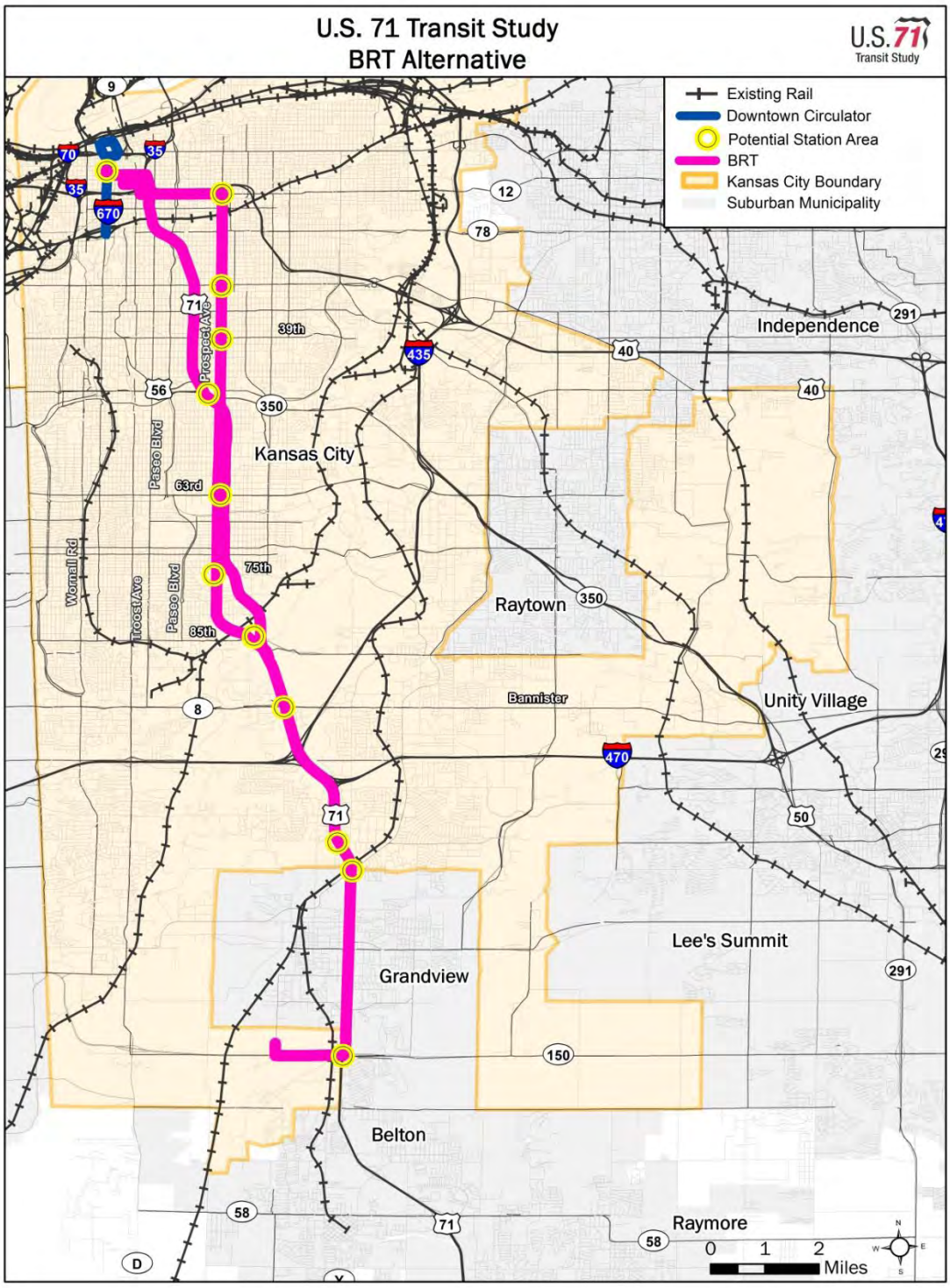
   Ten stations are estimated for this route.

2. On the Prospect Avenue Urban BRT alignment, northbound buses would operate from a park & ride / station at Bannister Road. The buses would proceed to Hickman Mills Drive, north on Hickman Mills Drive to Prospect, north on Prospect to Truman Road, west on Truman Road to Holmes Street, north on Holmes to 11th Street, west on 11th to Baltimore, north on Baltimore to 10th Street, east on 10th Street to Main and South on Main to the 10th & Main Transit Center.

Southbound buses would operate from the 10th and Main Transit Center and proceed south on Main Street to 12th Street, east on 12th to Charlotte Street, South on Charlotte to Truman Road, east on Truman Road to Prospect, south on Prospect to Hickman Mills Drive, south on Hickman Mills Drive to Bannister where the service would terminate at a park & ride / station at Bannister Road.

Nine stations are anticipated for this route.

A feeder bus network would also be a part of this alignment. It would include a Grandview circulator, with on demand response but would replace existing service on U.S. 71 and Prospect.


U.S. 71 Transit Study
BRT Alternative
U.S. 71 Transit Study
Existing Rail
Downtown Circulator
Potential Station Area
BRT
Kansas City Boundary
Suburban Municipality
Kansas City
Independence
Raytown
Bannister
Unity Village
Lee's Summit
Grandview
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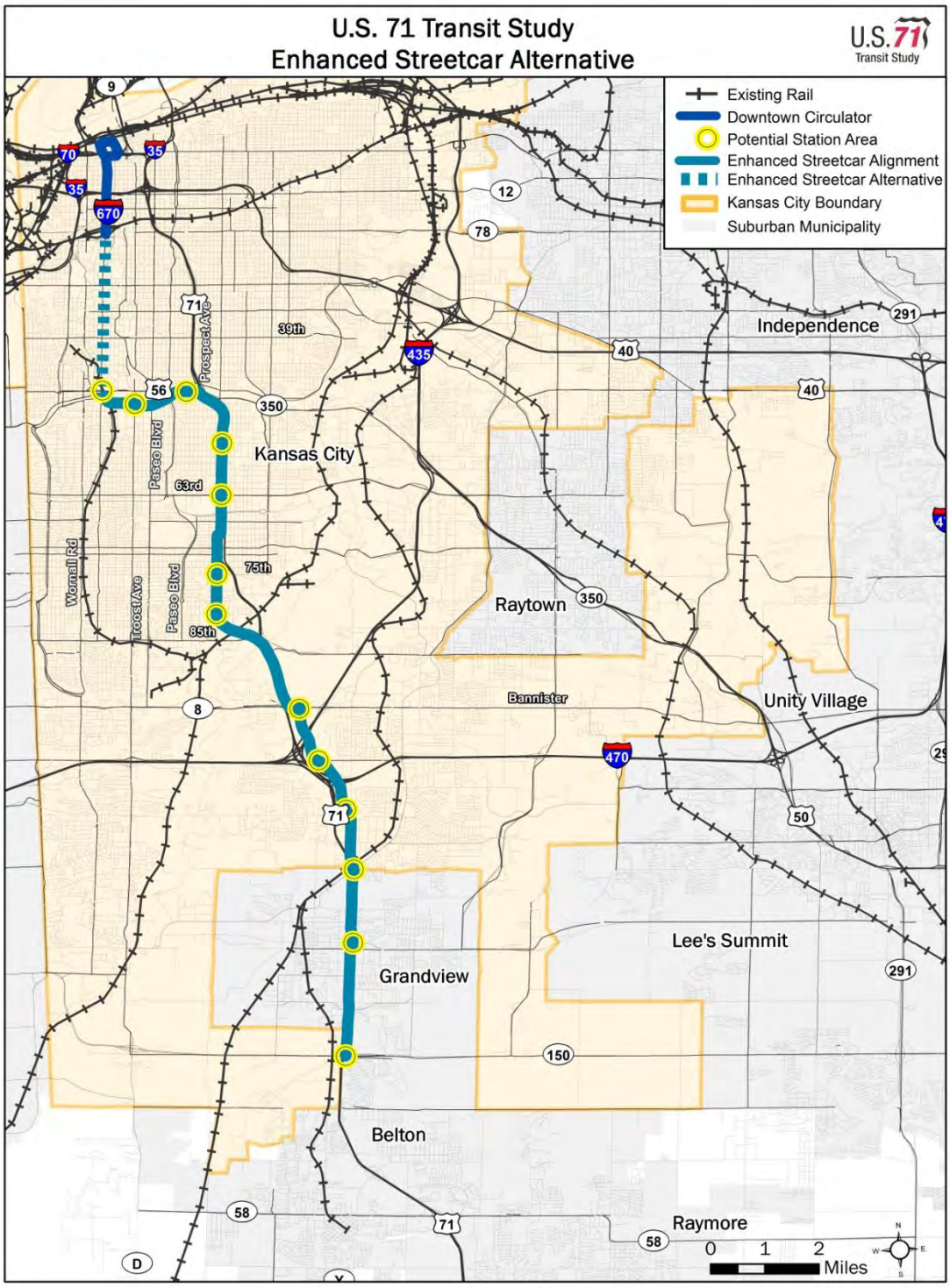
Alternative 2: Enhanced Streetcar Alternative

Vehicles and technology used for this alternative would be identified as "Enhanced Streetcar." The streetcar will operate on a fixed-rail/electric system at street level and will share a lane of traffic with other vehicles unless otherwise noted. This system is conceived to be an extension of Downtown Streetcar currently being implemented using the Locally Preferred Alternative from the Downtown Circulator Alternatives Analysis. The route being considered in the Downtown Corridor Analysis ends at Main Street and Pershing Road. Extensions of this initial system are being considered which would extend the line to Main Street and Cleaver Boulevard. The alignment proposed herein would begin at the end of the future Main Street extension project in the vicinity of Main Street and Cleaver Boulevard.

Six bridges would be affected by this alignment. Of those, four would be new. Twelve stations would be along the route. A feeder bus network would also be a part of this alignment. It would include a Grandview circulator, with on demand response; the 471-71 Highway express with reduced headways; and the 71-Prospect route with no changes to existing service.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Alternative 3: Diesel Multiple Unit Alternative

The DMU alternative uses diesel style trains to connect suburban jurisdictions in the south to destinations in the CBD, to provide access to other destinations, and to provide opportunities for reverse commutes to suburban employment centers.

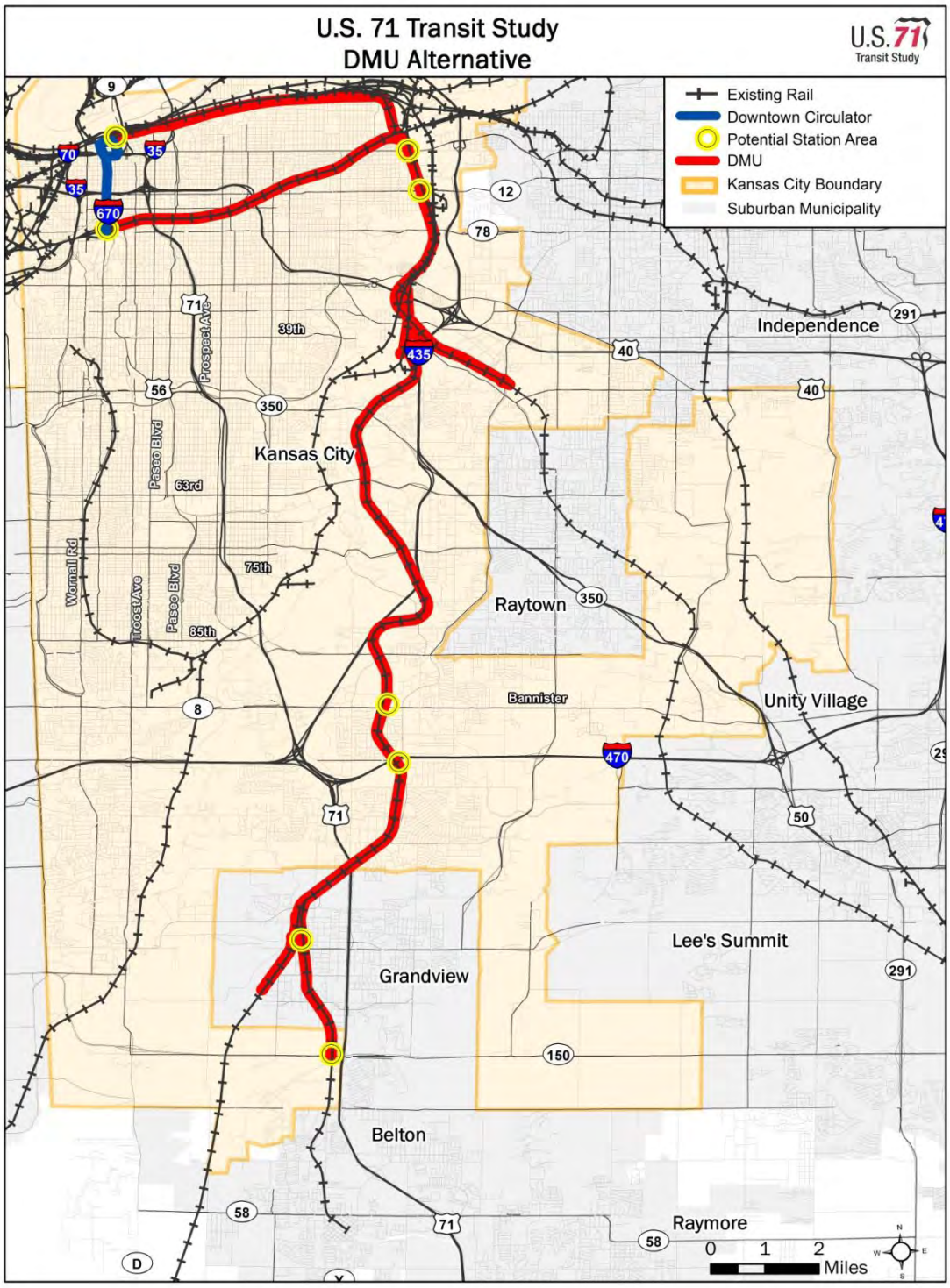
Diesel Multiple Units (DMUs) are rail cars that contain both passenger accommodations and propulsion (diesel engines located below the passenger compartments). As a self-propelled unit, no large locomotive engine is required. Using dual cab train set configurations, DMUs are capable of running in the reverse direction which eliminates the need for turnaround tracks. A DMU has less noise and lower emissions when compared to a locomotive-hauled train system, but is still compatible with active freight operations on the same line (unlike a light rail vehicle). The Federal Railroad Administration (FRA) crash worthiness standard (49 CFR Part 238) requires that passenger trains operating on active freight tracks must be compliant or operate with temporal separation (i.e., passenger operations during the day with freight operations at night). The vehicle proposed for this alternative will be a fully FRA-compliant DMU based on requirements of the Kansas City Southern Railway, the owning railroad for a portion of the alignment.

The alignment for the DMU Commuter Service South Line runs from the Jackson County Line to Leeds Junction. The alignments for the DMU Commuter Service Common Line run from Leeds Junction to the River Market and from Leeds Junction to Union Station.

The DMU alignments cross nearly 80 bridge structures. About 20 of those would require improvement of some kind, up to and including replacement.

Stations for the DMU alternative are located near population centers and major regional destinations. Four are anticipated along the South Line; one in the common line through thee River Market and four in the common line to Union Station.

The DMU would be supported by a Grandview circulator bus system that would operate on demand response.


U.S. 71 Transit Study
DMU Alternative
U.S. 71 Transit Study
Existing Rail
Downtown Circulator
Potential Station Area
DMU
Kansas City Boundary
Suburban Municipality
Kansas City
Independence
Raytown
Bannister
Unity Village
Lee's Summit
Grandview
Belton
Raymore
Prospect Ave
Paseo Blvd
Troost Ave
Wornall Rd
39th
63rd
75th
85th
0 1 2
Miles

Tier 1 Screening Methodology

(A complete copy of the Evaluation Methodology Report is available upon request.)

The evaluation of alternatives consists of a two-tiered screening process. Tier 1 focuses on overall feasibility, as well as effectiveness, environment and equity measures and is intended to identify a short list of the most promising alternatives to be advanced for a more quantitative and detailed evaluation in Tier 2. The Tier 2 Screening will result in the selection of a single LPA defined in terms of mode and general alignment. While other projects may be identified for long-term development, the LPA will focus on the project that will be progressed for implementation in the short-term.

The alternatives to be carried into the Tier 2 Screening will include a No Build Alternative, a Transportation Systems Management (TSM) Alternative representing the best that can be done to improve transit operations with low cost bus improvements, and additional transit alternatives that would require a higher level of capital investment. These are expected to include varying technologies on several alignments. The evaluation framework and measures will differentiate among these transit technologies and the alignments.

For the Tier 2 screening, a limited level of conceptual engineering will be performed to provide a basis for capital cost estimating, operations and maintenance costs estimating and financial analyses. More detailed environmental "fatal flaw" screening and impact studies will be performed as well in accordance with the approved scope of work.

Similar to the Tier 1 Screening, a rating scale will be used to provide a relative comparison between the No Build, TSM, and Build Alternatives. The project team will assign ratings on a scale of High, Medium-High, Medium, Medium-Low, and Low for each measure. Ratings will be presented in a summary matrix to enable understanding of the trade-offs between the alternatives, weigh their relative advantages and disadvantages, and select the LPA. The outcome of the Tier 2 Screening will be an LPA that could be advanced for more detailed environmental and engineering studies.

The Federal Transit Administration suggests that five primary perspectives be considered. They are:

- **Effectiveness** measures assess the extent to which the alternatives address the stated needs in the corridor
- **Cost-effectiveness** measures assess the extent to which the costs of the alternatives, both capital and operating, are commensurate with their anticipated benefits.
- **Feasibility** measures the financial and technical feasibility of the alternatives. Financial measures assess the extent to which funding for the construction and operation of each alternative is considered to be readily available. Technical feasibility assesses potential engineering challenges or restrictions that could limit the viability of an alternative.

- **Impacts** assess the extent to which the alternatives could present potential environmental and traffic issues that could be fatal flaws or otherwise influence the selection of a preferred alternative.
- **Equity** assesses the extent to which an alternative's costs and benefits are distributed fairly across different population groups.

Pages 26-31 serve as attachments to this memo. The charts on those pages provide a high-level overview of the goals and objectives for the U.S. 71 Transit Study as well as measures for the Tier 1 and Tier 2 screening.

The advisory panel is asked to comment on the goals, objectives and measures. Specifically, are there others that should be used to evaluate the alternatives?

The consultant team and the Project Partnership Team have conducted a high-level evaluation of each of the alternatives currently under consideration. The chart provided as a separate attachment provides that analysis in one summary document. The consultant team will review the chart at the meeting and answer questions from the Stakeholder Advisory Panel.

Next Steps

Several other initiatives are proceeding on a parallel track with the U.S. 71 Transit Study; all are complementary and will inform the others.

- A capacity study of the KCT trench will soon be underway. The output and conclusions are expected to be completed by the end of 2012 and, will provide critical information for how best to reach a downtown terminal station for the DMU option.
- Negotiations with the railroads are ongoing related to use of their facilities as well as possible agreements related to construction of various alternatives.
- Jackson County is developing a countywide transportation plan, which addresses all forms of public transit. This plan is expected to be completed in the next several weeks and will likely be the basis for a future election.

The Project Partnership team will next meet on July 27, 2012.

Table 1 - Goals and Objectives

Goals	Objectives
Improve travel time for transit riders, making it more time competitive with the automobile, and enhance the transit users' travel experience.	Improve transit travel times and speeds within study area.
	Provide transit capacity needed to meet future travel demand. Provide service levels and amenities that can provide a travel experience that is competitive with the automobile.
	Provide amenities on the transit vehicle, at stops and park and ride lots than enhance the user experience.
Need to connect the U.S. 71 Study area with the greater Kansas City metropolitan area via multimodal transportation options.	Provide enhanced East/West connectivity throughout the route.
	Provide enhanced regional connectivity.
Need to serve and enhance the mobility of transit dependent users in the study area.	Provide enhanced East/West connectivity throughout the route to areas where transit dependent populations live and work.
	Provide all-day service to areas where transit dependent populations live and work.
Need to connect key activity centers in the study area with enhanced transit as a strategy for enticing development and redevelopment of these areas.	Provide a level and quality of transit service that can influence more compact growth patterns.
	Provide station locations at or near areas identified as key activity centers.
Need to support local planning initiatives that call for enhanced transit for their residents.	Service should be consistent with Kansas City area plans that call for enhanced transit.
Need to increase transportation options for study area residents and reduce dependence on automobiles.	Reduce air pollutant emissions, fuel consumption, VMT / Vehicle Hours Traveled (VHT), and travel delay.
Need to promote the protection, preservation and access to key environmental assets in the study area.	Provide access to key environmental features for visitors.
	Avoid negative impacts to key environmental features
Need to promote workforce development in the study area through better job access and through direct jobs offered by enhanced transit.	Provide all-day service to areas where transit dependent populations live and work.
	Provide workforce options through the implementation and operation of the transit project for those that need employment in the study area.

Table 2 - Effectiveness Measures

Goals	Objectives	Tier 1 Screening Measures	Tier 2 Screening Measures
Improve travel time for travelers, making it more time competitive with the automobile, and enhance the transit users' travel experience.	Improve transit travel times and speeds within study area.	• End-to-end travel time • Average transit travel speed • Auto speed / transit speed comparison	• End-to-end travel time • Average transit travel speed • Travel time between select origins and destinations • Auto speed / transit speed comparison • Length of alignment within fixed guideway
	Provide transit capacity needed to meet future travel demand. Provide service levels and amenities that can provide a travel experience that is competitive with the automobile.	• Qualitative assessment of ability to meet future demand • Initial ridership output from travel demand model	• Load factor at max load point • Ridership output from travel demand model
	Provide amenities on the transit vehicle, at stops and park and ride lots than enhance the user experience.	• Qualitative assessment of amenities	• Qualitative assessment of amenities • Ridership output with weight time weight • Travel time output with weight time weight • Ridership assessment using modal coefficients
Need to connect the U.S. 71 Study area with the greater Kansas City metropolitan area via multimodal	Provide enhanced East/West connectivity throughout the route.	• Qualitative assessment of connectivity with key KCATA east/west routes	• Assessment of connectivity with key KCATA east/west routes
	Provide enhanced regional connectivity.	• Qualitative assessment of connectivity with key KCATA / Unified Government / City of Independence / Johnson County Transit / proposed Jackson County routes	• Assessment of connectivity with key KCATA / Unified Government / City of Independence / Johnson County Transit / proposed Jackson County routes

Goals	Objectives	Tier 1 Screening Measures	Tier 2 Screening Measures
Need to serve and enhance the mobility of transit dependent users in the study area.	Provide enhanced East/West connectivity throughout the route to areas where transit dependent populations live and work.	• Number of households within 1/2 mile of a transit station • Number of jobs within 1/2 mile of a transit station • Number of households within ½ mile of alignment • Number of jobs within ½ mile of alignment	• Number of households within 1/2 mile of a transit station • Number of jobs within 1/2 mile of a transit station • Number of households within ½ mile of alignment • Number of jobs within ½ mile of alignment
	Provide all-day service to areas where transit dependent populations live and work.	• Qualitative Assessment of service strategy	• Days / week in service • Hours / day in service • Headways
Need to connect key activity centers in the study area with enhanced transit as a strategy for enticing development and redevelopment of these areas.	Provide a level and quality of transit service that can influence more compact growth patterns.	• Transit travel time from each targeted activity center to downtown	• Transit travel time from each targeted activity center to downtown
	Provide station locations at or near areas identified as key activity centers.	• Number of targeted activity centers served • Number of redevelopment sites served	• Number of targeted activity centers served • Number of redevelopment sites served
Need to support local planning initiatives that call for enhanced transit for their residents.	Service should be consistent with Kansas City area plans that call for enhanced transit.	• Qualitative assessment of consistency of proposed station locations with local plans and policies	• Qualitative assessment of consistency of proposed station locations with local plans and policies
Need to increase transportation options for study area residents and reduce dependence on automobiles.	Reduce air pollutant emissions, fuel consumption, VMT / Vehicle Hours Traveled (VHT), and travel delay.	• Change in regional fuel consumption, VMT / VHT and delay per capita • Qualitative assessment of difference in sustainability benefits of modal alternatives	• Change in regional fuel consumption, VMT / VHT and delay per capita • Qualitative assessment of difference in sustainability benefits of modal alternatives

Goals	Objectives	Tier 1 Screening Measures	Tier 2 Screening Measures
Need to promote the protection, preservation and access to key environmental assets in the study area.	Provide access to key environmental features for visitors.	• Qualitative assessment of access to lakes / trails / parks/ rivers / Kansas City zoo	• Qualitative assessment of access to lakes / trails / parks / rivers / Kansas City zoo
	Avoid negative impacts to key environmental features	• Use data from environmental screening of water systems and parks	• Use data from environmental screening of water systems and parks
Need to promote workforce development in the study area through better job access and through direct jobs offered by enhanced transit.	Provide all-day service to areas where transit dependent populations live and work.	• Qualitative assessment of service strategy	• Days / week in service • Hours / day in service • Headways
	Provide workforce options through the implementation and operation of the transit project for those that need employment in the study area.	• Number of households within 1/2 mile of a transit station • Number of jobs within 1/2 mile of a transit station	• Number of households within 1/2 mile of a transit station • Number of jobs within 1/2 mile of a transit station • Estimate of direct jobs available during transit construction • Estimate of direct jobs available when transit is in operation

Table 3 – Cost Effectiveness Measures

Evaluation Criteria	Tier 1 Screening Measures	Tier 2 Screening Measures
Capital & O&M Costs	• Assessment of capital and O&M costs	• Estimated total capital cost • Estimated annual operating cost • Operating cost per passenger-mile
Transit Productivity	• NA	• Average 2035 daily boardings per route mile • Average 2035 daily boardings per revenue hour
Cost-Effectiveness	• Assessment of cost effectiveness	• Cost per new passenger • Cost per hour of Transportation system user benefits

Table 4 – Feasibility Measures

Evaluation Criteria	Tier 1 Screening Measures	Tier 2 Screening Measures
Technical Feasibility	• Qualitative assessment of constructability, willingness of the railroads to share right-of-way, etc.)	• Further review of feasibility questions that were not addressed in Tier 1
Financial Feasibility	• Qualitative assessment of financial feasibility	• Cash flow assessment of availability/stability of potential funding sources to be used for funding capital and operating costs

Table 5 – Impact Measures

Evaluation Criteria	Tier 1 Screening Measures	Tier 2 Screening Measures
Environmental Impacts	• Potential number of displacements • Section 4f impacts • Wetland, stream, and floodplain impacts Visual and aesthetic impacts, including Boulevards	• Potential number of displacements • Section 4f impacts • Wetland, stream, and floodplain impacts Visual and aesthetic impacts, including Boulevards
Traffic impacts	• Change in regional VMT	• Change in regional VMT • Congestion and safety impact on individual streets and highways

Table 6 – Equity Measures

Evaluation Criteria	Tier 1 Screening Measures	Tier 2 Screening Measures
Impacts on transit-dependent and minority groups	• Number of low-income households within ½ mile of a station • Number of low-income households within ½ mile of alignment • Proportion of displacements that are within EJ census tracts	• Number of low-income households within ½ mile of a station • Number of low-income households within ½ mile of alignment • Proportion of displacements that are within EJ census tracts

U.S. 71 Transit Study

Tier 1 Screening

18-Jul-12

Key
● - Best ◕ - Very Good ◒ - Good
◔ - Fairly Good ○ - Less Good

			Technology/Mode	Combined Bus Alternatives		Enhanced Streetcar	Regional Rail Terminus Alternatives	
				Bus Rapid Transit		Enhanced Streetcar	Diesel Multiple Unit/Regional Rail	
	Objective	Tier 1 Measure	Alignment	U.S. 71	Prospect Avenue		Common Corridor + River Market	Common Corridor + Union Station
Feasibility	Technical Feasibility	Qualitative assessment of constructability, willingness of the railroads to share right-of-way, etc.		◕	◕	◒	◒	◒
Feasibility	Financial Feasibility	Qualitative assessment of financial feasibility		●	●	○	◒	◒
Effectiveness	Improve travel times and speeds within the study area	End-to-end travel time		◕	◒	◔	●	◕
Effectiveness		Average transit travel speed		◕	◒	◔	●	●
Effectiveness		Auto speed / transit speed comparison		◕	◕	◕	◔	◒
Effectiveness	Provides transit capacity needed to meet future travel demand. Provide service levels and amenities that can provide a travel experience that is competitive with the automobile	Qualitative assessment of ability to meet future demand		◕	◕	◕	◔	◒
Effectiveness		Initial ridership output from the travel demand model		◕	◕	◕	◔	◔
Effectiveness	Provide amenities on the transit vehicle, at stops and park and ride lots that enhance the user experience	Qualitative assessment of amenities		◒	◒	●	●	●
Effectiveness	Provide enhanced East/West connectivity throughout the route	Qualitative assessment of connectivity with key KCATA east/west routes		◕	◕	◕	◔	◔
Effectiveness	Provide enhanced regional connectivity	Qualitative assessment of connectivity with key KCATA/Unified Government/City of Independence/ Johnson County Transit/proposed Jackson County routes		◕	◕	◕	◔	◔
Effectiveness	Provide enhanced East/West connectivity throughout the route to areas where transit dependent populations live and work.	Number of households within 1/2 mile of a transit station		◕	◕	◕	◔	◔
Effectiveness		Number of jobs within 1/2 mile of a transit station		◕	◕	◒	◔	◔
Effectiveness		Number of households within 1/2 mile of alignment		◕	◕	◕	◔	◔
Effectiveness		Number of jobs within 1/2 mile of alignment		◕	◕	◕	◔	◔

U.S. 71 Transit Study

Tier 1 Screening

Key
● - Best ◕ - Very Good ◒ - Good
◔ - Fairly Good ○ - Less Good

	Objective	Tier 1 Measure	Combined Bus Alternatives		Enhanced Streetcar	Regional Rail Terminus Alternatives	
		Technology/Mode	Bus Rapid Transit		Enhanced Streetcar	Diesel Multiple Unit/Regional Rail	
		Alignment	U.S. 71	Prospect Avenue		Common Corridor + River Market	Common Corridor + Union Station
Effectiveness, continued	Provide all-day service to areas where transit dependent populations live and work	Qualitative assessment of service strategy	◔	◔	◔	◔	◔
	Provide station locations at or near areas identified as key activity centers	Number of targeted activity centers served	◔	◔	◔	◔	◔
		Number of redevelopment sites served	◔	◔	◔	◒	◒
	Service should be consistent with Kansas City area plans that call for enhanced transit	Qualitative assessment of consistency of proposed station locations with local plans and policies	●	●	●	◒	◒
	Reduce air pollutant emissions, fuel consumption, VMT/VHT and travel delay	Qualitative assessment of difference in sustainability benefits of modal alternatives	◔	◔	◔	◔	◔
	Provide access to key environmental features for visitors	Qualitative assessment of access to lakes, trails, parks, rivers, Kansas City Zoo	●	●	◒	◔	◔
	Avoid negative impacts to key environmental features	Use data from environmental screening of water systems and parks	See Impacts	See Impacts	See Impacts	See Impacts	See Impacts
	Provide all-day service to areas where transit dependent populations live and work	Qualitative assessment of service strategy	◔	◔	◒	◔	◔
	Provide workforce options through the implementation and operation of the transit project for those that need employment in the study area	Number of households within 1/2 mile of a transit station	◔	◔	◔	◔	◔
		Number of jobs within 1/2 mile of a transit station	◔	◔	◒	◔	◔
Cost Effectiveness	Capital and O&M Costs	Assessment of capital and O&M costs	●	●	◔	◒	◒

U.S. 71 Transit Study

Tier 1 Screening

Key
● - Best ◕ - Very Good ◒ - Good
◔ - Fairly Good ○ - Less Good

			Combined Bus Alternatives		Enhanced Streetcar	Regional Rail Terminus Alternatives	
		Technology/Mode	Bus Rapid Transit		Enhanced Streetcar	Diesel Multiple Unit/Regional Rail	
	Objective	Tier 1 Measure / Alignment	U.S. 71	Prospect Avenue		Common Corridor + River Market	Common Corridor + Union Station
Impacts	Environmental Impacts	Potential number of partial residential displacements	●	●	●	●	●
		Potential number of full residential displacements	●	●	●	●	●
		Potential number of partial nonresidential displacements	●	●	◕	◒	◕
		Potential number of full nonresidential displacements	●	●	◕	◒	◒
		Section 4f impacts	◕	◕	◕	◒	◕
		Wetland impacts	◕	◕	◕	◕	◒
		Stream impacts	◕	◕	◒	◕	◕
		Floodplain impacts	◕	●	◒	◔	◔
		Visual and Aesthetic Impacts	●	◕	◔	◒	◒
Equity	Impacts on transit-dependent and minority groups	Proportion of partial residential displacements that are in environmental justice census tracts	●	●	●	●	●
		Proportion of full residential displacements that are in environmental justice census tracts	●	●	●	●	●
		Proportion of partial nonresidential displacements that are in environmental justice census tracts	●	●	◒	◔	◒
		Proportion of full nonresidential displacements that are in environmental justice census tracts	●	●	◕	◔	◔

Meeting Summary

U.S. 71 Transit Study
Stakeholder Advisory Panel
9 a.m. – 10:30 a.m.
June 27, 2012
Mid-America Regional Council, 600 Broadway, KCMO
Westview Room

1. **Welcome, Introductions and Meeting Objectives**

   Tom Gerend of the Mid-America Regional Council welcomed the Stakeholder Advisory Panel, gave a brief overview of the project and asked for self-introductions. The following were in attendance.

   Stakeholder Advisory Panel

   - Lou Austin, Three Trails CID
   - Steve Dennis, Grandview, Missouri mayor
   - Rianna Deselich, Kansas City Neighborhood Advisory Council
   - Michael Graf, Three Trails CID
   - Gunnar Hand, South Kansas City Alliance
   - John Ivey, Lee's Summit resident
   - Kitty McCoy, Regional Transit Alliance
   - Mark McDowell, Transit Action Network
   - Danny O'Connor, KCATA
   - Dennis Randolph, City of Grandview
   - Janet Rogers, Transit Action Network
   - John Sharp, Kansas City, Missouri City Council
   - Kite Singleton, Regional Transit Alliance
   - Brenda Thomas, Marlborough Neighborhood Coalition
   - Allan Zafft, Missouri Department of Transportation

Members of the Project Partnership Team, the consulting team and the public also attended.

- Tom Gerend, Mid-America Regional Council
- Ron Achelpohl, Mid-America Regional Council
- Mell Henderson, Mid-America Regional Council
- Julie Wittman, Mid-America Regional Council
- Calvin Williford, Jackson County
- Robbie Makinen, Jackson County
- Tom Shrout, Avvantt Partners (Jackson County)
- Debra Shrout, Avvantt Partners (Jackson County)
- Dan Moye, Jackson County
- Jared Gulbranson, KCATA
- Shawn Dikes, Parsons Brinckerhoff
- Lisa Koch, Parsons Brinckerhoff
- Mark Swope, Olsson Associates
- Leonard Graham, Taliaferro & Browne
- Sara Clark, TranSystems
- Patty Gentrup, Shockey Consulting
- Mary Jane Judy, public
- Laura Cameron, public
- Ron McLinden, public

2. Project and Process Overview

Lisa Koch, PB's deputy project manager, provided an overview of the project and the process.

She said the scope of the project was to review one corridor, U.S 71 Highway from downtown Kansas City south to Belton. The study will follow the FTA's-recommended Alternatives Analysis (AA) process with the goal of resulting in a Locally Preferred Alternative (LPA). The project is expected to conclude in January 2012.

Lisa said the first thing that is done is to examine previous work to identify what has already been determined that can be used in the study and what gaps there might be.

To that end, the following studies were evaluated.

- MARC Smart Moves
- Regional Rapid Rail
- JCCC AA
- KCATA Comprehensive Service Analysis
- Troost Avenue Corridor Planning
- MoDOT U.S. 71 / I-49 / Bruce R Watkins Efforts

That review found:

- Efforts from JCCCAA will allow this project to progress more quickly because a large amount of materials and work can be transferred over to this parallel effort
- Good parallel urban bus service(s) exist on Troost
- U.S. 71 has a lot to offer in terms of available right-of-way for transit
- Underutilized freight rail lines exist in proximity to the corridor

3. Stakeholder Advisory Panel Role and Public Involvement Plan

Patty Gentrup introduced the public engagement process for the project. She said that the stakeholder advisory panel (SAP) would work in tandem with the Project Partnership Team (PPT) and the consulting team. The role of the advisory panel is to assist in identifying the goals of the project; evaluating the alternatives and considering the Locally Preferred Alternative (LPA). She said advisory panel members are encouraged to consider all the perspectives and region as a whole. The meetings will be designed to create an open dialogue and will be structured as opportunities for deliberation, not debate. Advisory panel members are asked to share information and provide feedback about information presented and discussed to their respective constituencies. She also pointed out that the members of the Project Partnership Team are to be the "official" voice(s) of the project.

Question: Will the SAP have input into the location for the meetings?

Answer: Yes, our first meeting is in Grandview, but we will move it around throughout the process. Jackson County will be having other open houses with neighborhood organizations to give information about the project. We will also try to have meetings located along transit routes.

Patty then outlined the stakeholders to be engaged; the one- and two-communication techniques to be used

The advisory panel was then asked to brainstorm about stakeholders that should be involved in the process. The following list was developed.

- South Kansas City Alliance can provide a lot of stakeholder information.
- Neighborhoods
- Dodson Industrial Area
- 3 Trails Development Area
- Federal Complex on Bannister Road
- International House of Prayer
- Church Coalition in South Kansas City / Grandview
- Chambers of Commerce (Grandview, South Kansas City)
- Martin City, Red Bridge CID
- Raytown
- Independence
- More2
- CCO
- Blue Valley Industrial Association
- Southtown Council
- Country Club District – Homes Association in KC
- Brush Creek Community Partners
- Universities (UMKC and Rockhurst and Avila)
- School Districts, Grandview, Hickman Mills, Center, KCMO

4. Purpose and Need

Lisa Koch indicated that a critical role of the Stakeholder Advisory Panel is to assist the consultant team and the Project Partnership Team in identifying the need(s) for an enhanced transit system in the corridor and ways in which the spectrum of alternatives should be evaluated. The Project Partnership team developed preliminary needs statements, but the advisory panel was asked to consider whether they are appropriate and rank their level of importance.

Transportation/Mobility

Need No. 1: *Improve travel time for travelers, making transit time competitive with the automobile and enhance the transit users' travel experience.*

- U.S. 71 is currently very congested with no plans for lane expansion.
- Current bus service (Routes 71 and 471) is in mixed traffic. Transit travel times are slower than the automobile.
- Current and future park and ride lots, stations and stops need better amenities.

Need No. 2: *Connect the U.S. 71 Study area with the greater Kansas City metropolitan area via multimodal transportation options.*

- Additional east/west connections are needed throughout the corridor.
- Transfer opportunities are needed to Eastern Jackson County and Wyandotte County.
- Connections to bicycle and pedestrian network are needed throughout the corridor

Comment: There is no identification of need to connect to Johnson County.

Response: Yes, we do need to consider that. There is definitely a travel demand there.

Need No 3: *Serve and enhance the mobility of transit dependent users in the study area.*

- Need additional east/west connections to attract transit dependent riders outside of walking distance to the route.
- All-day service is needed for off-peak work trips, as well as medical, shopping and other needs.

Question: How far south does the US 71 / Prospect service that is all day run to?

Answer: 77th and Agnes on Prospect is the terminus. At 71 Highway and Red Bridge Road is a park and ride that has five trips in the morning and in the evening.

Comment: In non-peak hours, there is no service south of 77th to get to Grandview or any place south.

Response: The Troost Max goes to Bannister Road and Drury. Service goes there until about 10 p.m. with five different routes.

Comment: That is where the gap is--from 77th to even 79th, you have to get on Troost to make connection. The time constraints make it difficult to get to work on time.

The KCATA indicated that the Troost Max hubs in Bannister and Drury area are in a temporary location. This is where five routes come together, Troost max, blue ridge, 75th

street route, Raytown Metro Flex, Bannister Hillcrest MetroFlex and the 471. The ATA is looking at developing a permanent location at Bannister and Blue Ridge, shifting the hub farther east to get more connectivity and more permanent presence in Hickman Mills.

Land Use and Economic Development

Need No. 4: *Connect key activity centers in the study area with enhanced transit as a strategy for enticing development and redevelopment of these areas.*

- Numerous major employers
- Key redevelopment sites (along Bannister Road and at Truman Corners) need to be connected by regional transit
- Prospect Avenue needs reinvestment

Need No. 5: *Support local planning initiatives that call for enhanced transit for their residents.*

- Kansas City Area Plans describe the need for enhanced transit and special development nodes around transit
- MARC Regional Plans reference need for density around transit

Comment: In terms of economic development, especially if a fixed rail solution is being examined, they tend to spur investment because people feel it has some permanency. We might see development along the route.

Comment: Fixed guideways in general doesn't stimulate investment by itself. There are concrete examples, downtown Houston and Salt Lake City. There is an appreciation of property values but not necessarily putting people to work. There is a host of factors that determine whether there is increased economic development.

Comment: If you look at the street car analysis, the reason the decisions were made was because of economic development

Comment: This has to be put into context. The long-term view is that it is the land use combined with the transit options. Literature clearly indicates that land use planning in association with fixed rail has enormous benefits.

Comment: Some of the needs that have been framed, talk about what is and not what should be. We might be missing the point about the vision. We should look at not only how to connect existing activity centers but also how to create new ones.

Comment: This discussion will be aided by info and facts as the technical team begins the analysis.

Livability and Sustainability

Need No. 6: *Increase transportation options for study area residents and reduce dependence on automobiles.*

- Kansas City is currently an attainment with EPA's ground level ozone levels, reductions in these levels are still needed.
- MARC's Clean Air Action Plan suggests the implementation of a multimodal transportation system that can reduce auto miles.

Need No. 7: *Promote the protection, preservation and access to key environmental assets in the study area.*

- Numerous water systems along the corridor should be seen as amenities. The transit use should not be harmful to these systems.

Need No. 8: *Need to promote workforce development in the study area through better job access and through direct jobs offered by enhanced transit.*

- Residents in this corridor should have more opportunities for employment because of additional service span and area.
- Implementation of this project should employee individuals in the corridor.

Members of the advisory panel then participated in an exercise designed to gauge their thoughts on their first, second and third priorities of the eight statements. The results follow.

Category	Need Statement	No. 1	No. 2	No. 3
Transportation	*Improve travel time for travelers, making transit time competitive with the automobile and enhance the transit users' travel experience.*	2	4	
	Connect the U.S. 71 Study area with the greater Kansas City metropolitan area via multimodal transportation options.		2	1
	Serve and enhance the mobility of transit dependent users in the study area.	4	1	1
Land Use / Economic Development (1)	*Connect key activity centers in the study area with enhanced transit as a strategy for enticing development and redevelopment of these areas.*	8	3	
	Support local planning initiatives that call for enhanced transit for their residents.			
Livability/Sustainability	*Increase transportation options for study area residents and reduce dependence on automobiles.*		4	2
	Promote the protection, preservation and access to key environmental assets in the study area.			3
	Connect the U.S. 71 Study area with the greater Kansas City metropolitan area via multimodal transportation options.			7

5. Alternatives Screening

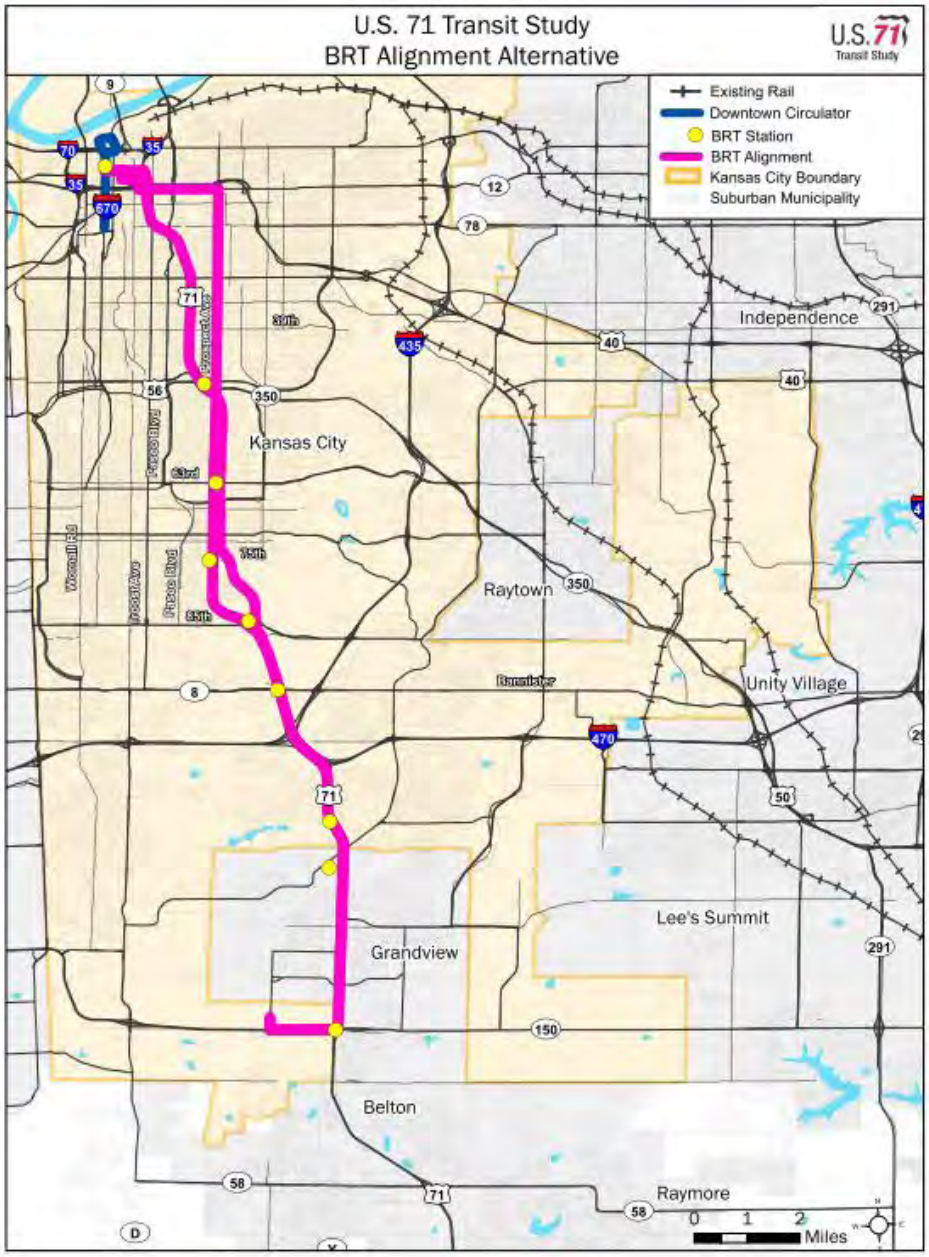
Based upon the considerable work already completed in the corridor, the consultant team and project partnership team conducted an initial screening of alternatives. They will be outlined, and the advisory panel will be asked to identify critical issues along them.

Lisa outlined the study alternatives and preliminary analysis for them. (See next three pages.)

Alternative 1: Bus (BRT and/or Express Bus)

- Route: U.S. 71 and/or Prospect
- Various Options: mixed traffic, peak hour exclusive lane, fixed guideway bus only lanes, managed lanes, combinations

But alternatives have a direct route and a variety of investment options. However, they might not spur economic development.



Alternative 2: Enhanced Streetcar

- Route: Extension of Streetcar past the Plaza

This could be an extension of the city's system, could spur development and is near population and employment centers. However, it is very expensive.

Alternative 3: Diesel Multiple Unit (DMU)

- Route: Along underutilized rail corridors, terminating at Union Station or River Market

A DMU would use existing rail assets and provide an affordable rail option. However, the stations are not near population and employment centers and the circuitous route would result in few stations, especially in the urban area.

Question: You have so few transit stations on the streetcar alternative. There aren't any in Grandview or at the end of the route. On the regional rail you don't have any on the north side.

Response: We ask that you help us identify those stations locations. The maps are more illustrative than strategic. But the topography and some other issues make having some stops difficult. But your feedback on stops and access is important.

Comment: Why are we not going from the Plaza on the Brookside trolley trail, headed to 85th and Prospect, and tie into a rail station at the CID and address two issue: lack of stations north of 87th and the DMU south. You have the best of both worlds.

Comment: We are talking about going to the west. The trolley track trail I can walk on. A streetcar on 71 doesn't do me any good. This 71 highway corridor has entangled the city for so many years. We need to use what was done once before and did work.

Question: I don't see how a streetcar can fit in on an interstate. We should have and need all three modes. Can we say that? That we need all three? Or do we have to pick one?

Answer: The process can yield identification of needs that include more than one solution. But we use the streetcar terminology because it is current with what's happening downtown and to not tie into the light rail issues of previous. It's really enhanced streetcar.

Comment: On the last map, it looks like far different corridors, serving different groups of people and economic development interests.

Question: Is there a place at the Zoo that could be used?

Answer: Africa and the gorilla exhibit is on the UP. The KCS is further to the east.

After discussion related to the alternatives, the advisory panel was asked to provide additional thoughts and potential alternatives to the consultant team within a week's time.

6. Next Steps

- July 12: Open House at The View in Grandview from 4:00-6:00 p.m.
- *Mid-July: SAP meeting*

Socio-Economic Factors Relating to the Kansas City Regional Rapid Rail South Line

Prepared for:

3-Trails Village Community Improvement District

Prepared by:

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February, 2011

3 – Trails Village Community Improvement District

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"The CID mission is to address economic development based on a plan which is premised on ecology, education and health care within its target area. This mission may also extend to the economic development leadership in the region. The definition of economic development is to invest in future development predicated on promoting a set of public policy criteria. These criteria include sustainability and efficiency measures that are an integral part of the CID master planning process."

Adopted by the Board of Directors of 3-Trails Village Community Improvement District

Louis Austin

Owen Buckley

Michael Graf

Hunter Harris

Whitney Kerr, Sr.

Tony Privitera

Mike Pursell

April 18, 2011

RESOLUTION NO: 2011-04

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SECTION 1: Socio-Economic Factors Relating to the Kansas City Regional Rapid Rail South Line

"This is an important study because the study area does not at present have adequate mass transit facilities, except limited bus lines. The rail line will accomplish several things. It will (1) increase speedy transit into and out of the study area; and that (2) development of the area will begin to take place; (3) employment in the study area will rise due to transit to outside areas and the increased development within the study area; (4) the rail system will be more ecologically friendly than other forms of transit; and (5) maintenance costs of roads will decrease as rail transit improves and expands. These are all positive for the long-run development of the study area and, thus, beneficial for the study area and the City/County as a whole."

BACKGROUND

3-Trails Village Community Improvement District

The 3-Trails Village Community Improvement district (CID) is an independent political subdivision of the State of Missouri authorized by the City of Kansas City, Missouri. It is situated in Kansas City, Jackson County, Missouri in the 6th Council District. The CID is approximately 350 acres in size bounded by Bannister Road on the South, 87th Street on the North, I-435 on the West and the Kansas City Southern Railroad on the East. Under state laws the purpose of the CID is to promote sustainable economic development and business activity within the district. Made up of local property owners, the CID, in coordination with the City and other governmental and private entities, creates a district master plan, and then utilizes innovative ways to fund and enhance district services, public infrastructure, capital improvements and studies. The CID is funded by a special district sales tax, a real estate special assessment and public/private grants. The district is shown on the KCRRR System Map included in Section 2 of this report.

Kansas City Regional Rapid Rail Plan

The Kansas City Regional Rapid Rail Plan (KCRRR) is a 143 mile passenger rail system made up of six lines running primarily within underutilized, non-operating and abandoned railroad right of way corridors throughout the Kansas City metropolitan area. KCRRR is a fixed rail mobility management system with full intermodal connectivity that will serve as a regional rail transit platform that will connect to the proposed national high speed rail system. Union Station in Kansas City, Jackson County, Missouri will function as the primary hub of the KCRRR regional system. KCRRR is a county led initiative that will provide passenger rail service to Jackson, Clay, Platte and Cass Counties in Missouri and Wyandotte County in Kansas. The system is specifically designed for incremental implementation and expansion, also known as "plug and play". The KCRRR Plan is shown on the Kansas City Regional Rapid Rail System Map included in Section 2.

The priorities of the KCRRR are:
1) Transport people to their place of employment
2) Support event center transportation
3) Promote localized sustainable development and regional competitiveness
4) Create a transportation system that is affordable and accessible
5) Develop environmentally friendly transit

"In his state of the union address, President Obama called for 80 percent of Americans to have access to high speed rail by 2025…in order for high speed rail to work for communities, high speed rail must be seamlessly integrated with regional transit networks and transit-oriented developments (TOD), including compact, walkable places."

KCRRR South Line Ridership Assessment and Transit Choice

In 2010, the CID commissioned a ridership assessment of one of the six proposed lines, i.e., the South Line through TranSystems Corporation and ETC Institute. The Kansas City Regional Rapid Rail Market Demand Assessment for the South Line (ridership assessment and transit choice) utilized a sampling technique resulting in a total sample of 1,500 potential respondents. The ridership assessment is included in Section 3 of this report.

The South Line runs from Leeds Junction located just northwest of the I-70/I-435 Interchange in Kansas City, Jackson County, Missouri (6.80 miles east of Union Station) southerly to Belton, Cass County, Missouri near Highway 71 and Cambridge Street, a distance of 24 miles. Over half of the South Line is on right of way of the Kansas City Southern Railroad. The South Line makes up 17% of the KCRRR system and forms the eastern boundary of the CID. The South Line is shown on the Kansas City Regional Rapid Rail System Map in Section 2 of this report.

The KCRRR Plan includes a CID rail station on the South Line located just north of the intersection of the Kansas City Southern Railroad and Bannister Road (about midway between Blue Ridge Blvd. on the east and Hillcrest Road on the west) as portrayed on The Trails KC plan dated August, 2010 included in Section 3. The station will provide the CID with direct regional rail passenger service and intermodal (bus, bike, pedestrian, trail and auto) connectivity. The rail station also provides an opportunity for the CID to create and implement a master plan based on mixed-use transit oriented development (TOD) principles for the sustainable economic development and revitalization of the district consistent with the CID purpose. In addition, Phase II of the South Line supports the placement of a second rail station in the central portion of the CID. Therefore it is relevant to the CID purpose that the CID master planning methodology assess the potential ridership and associated socio-economic factors relating to the KCRRR South Line.

The ridership potential of the South Line was measured by the response to the Kansas City Regional Rapid Rail Plan. The assessment presented respondents with a brochure detailing the KCRRR Plan, and following the brochure a survey to assess the respondents' attitude to transit choice. The brochure was presented within the mailed survey.

The purpose of the ridership assessment was to gather survey data to assess the Plan for the Kansas City Regional Rapid Rail system from adult residents, ages 18 years and older, living in the relevant area of the Kansas City metropolitan area served by the South Line. The respondents included participants from Leeds Junction to the City of Belton.

"The ridership potential in the study area is significant; and it will grow in significance as more people begin to rely upon it – a fact seen in many cities."

KCRRR South Line Study Area

The study area for the ridership assessment and ridership choice assessment was divided into three sub-areas by zip code:

Area 1-(North Zone) The Southeast KC/Midtown area, included the zip codes 64129, 64130 and 64132.

Area 2-(Central Zone) The Bannister/Raytown area, included the zip codes 64137, 64134 and 64138.

Area 3-(South Zone) The Grandview/Belton area, included the zip codes 64012 and 64030.

The zip codes comprising the ridership assessment and transit choice study area are shown on the Kansas City Regional Rapid Rail System map in Section 2 of this report. The CID is located in Area 2 (Central Zone) of the study area and includes portions of zip codes 64134, 64137 and 64138. The ridership assessment determined that the total population of adult residents (based upon the most recent U.S. Census estimate) , ages 18 years and older, living in the entire study area was 115,575 with 36,427 (32%) adult residents living in Area 1, 42,844 (37%) adult residents living in Area 2 and 36,304 (31%) adult residents living in Area 3. The issue of transit choice was assessed with 69% of respondents favoring rapid rail as a primary transit of choice. This choice was confirmed throughout the survey by positive response to the KCRRR Plan.

Based on the results of the ridership assessment the estimated potential weekday (Monday – Friday) commuter ridership for the South Line is 7,395 trips per day. This ridership estimate does not include trips that would be completed for purposes other than work and school related trips. This estimate also does not include trips that would be completed on weekends or trips that would be completed by visitors.

This commuter ridership data was reviewed against the experience of the following cities with operating rail systems similar to the KCRRR Plan: Dallas, TX, Denver, CO and Portland, OR. These cities have planning protocols which can determine the relationship of the weekday commuter daily ridership to the total weekday ridership. The experience of those cities indicates that the weekday commuter ridership is estimated to be between 66% and 75% of the total weekday ridership on those rail systems. Therefore, using these estimates the total potential weekday ridership trips for the South Line is between 9,860 and 11,205 as shown on Table I A below. Of this total ridership it is estimated that between 2,465 and 3,810 is non-commuter

ridership. Annualizing the total potential South Line weekday ridership (300 days) indicates a yearly ridership between 2,958,000 and 3,361,500.

"Among transit surveys conducted by ETC Institute in the Kansas City metropolitan area, the Market Demand Assessment for the KCRRR South Line is the most comprehensive survey of its kind to date."

It is assumed that a ridership trip is from the point of origin to the point of destination and return to the point of origin. The formula for estimating the number of potential riders is: Total potential weekday ridership trips divided by two equals the number of total potential weekday riders. Applying this formula to the South Line ridership assessment indicates the total potential number of weekday riders is between 4,930 and 5,602 or 4.27% and 4.85% respectively of the total population of adult residents, ages 18 years and older, living in the South Line study area.

TABLE 1 A: South Line Ridership Estimates

Ridership Estimates	Daily Estimate ETC Study commuter	Daily Estimate 1 including non commuter	Daily Estimate 2 including non commuter
Commuter Weekday	7,395	7,395	7,395
Non Commuter		2,465	3,810
Total Ridership	**7,395**	**9,860**	**11,205**
KCRRR Annualized	2,662,920	2,958,000	3,361,500

PURPOSE

The purpose of this report is to characterize certain socio-economic factors associated with the KCRRR South Line within the South Line ridership assessment study area and to recommend additional steps that will further illustrate the potential social and economic benefits arising from the implementation of the KCRRR South Line.

The following information is presented to afford a context using the demographics of the KCRRR South Line study area relative to the socio-economic factors of population, personal income, income densities, affordability index characteristics and amortization of capital investment.

POPULATION

According to the most recent data of the Missouri Economic Research Information Center (MERIC) the total population of the ridership assessment study area is 160,075. As shown on Table 1B below the study area population declined between 2000 and 2009 with a net population loss of -49l or -.003%. This decline compares to a KCRRR counties population increase of

11.05% and a Missouri population increase of 7.01% for the same period. Area 1 (North Zone) had the greatest population loss of -4,490 or -8.68% and Area 3 (South Zone) had the greatest population increase of 3,765 or 7.47%. The population of Area 2 (Central Zone) was virtually unchanged showing a minimal increase of 234 or .004%. Zip code 64012 has the largest population (28,731) and zip code 64129 has the smallest population (9,746). Area 2 comprised the largest population in the study area with 58,706 or 37% followed by Area 3 with 54,137 or 34% and lastly by Area l with 47,232 or 29%.

"This study proposes the use of the Kansas City Regional Rapid Rail as a plan to address both sustainability and efficiency in the area of transport. This transport variable is important in that it represents a major component of both personal and business expenditure. In addition transport is a major component of public expenditure. The implementation of the KCRRR plan can be one facet of public planning by all levels of public policy development and thereby address the structural imbalances of public finance."

TABLE 1 B: Population – KCRRR South Line Study Area Zip Codes

Geographic Area	Zip Code	2000	%	2009	%	Change	% of Change
Area 1	64129	10,293	6%	9,746	6%	-547	-5.31%
	64130	25,473	16%	22,919	14%	-2,554	-10.03%
	64132	15,956	10%	14,567	9%	-1,389	-8.70%
Sub Total		**51,722**	**32%**	**47,232**	**29%**	**-4,490**	**-8.68%**
Area 2	64134	23,471	15%	22,996	14%	-475	-2.02%
	64137	10,061	6%	10,657	7%	596	5.92%
	64138	24,940	16%	25,053	16%	113	.004%
Sub Total		**58,472**	**37%**	**58,706**	**37%**	**234**	**.004%**
Area 3	64012	25,498	16%	28,731	18%	3,233	12.68%
	64030	24,874	15%	25,406	16%	532	2.14%
Sub Total		**50,372**	**31%**	**54,137**	**34%**	**3,765**	**7.47%**
Grand Total		**160,566**	**100%**	**160,075**	**100%**	**-491**	**.003%**

Source: http:// zipcode.com, US Census and MERIC Economic Profile

The data in Table 1B above indicates the study area population overall is declining. The population decline is highest in the innermost subdivision ring represented by Area 1 (North Zone). The population is Area 2 (Central Zone) is virtually unchanged with a significant population increase in the outermost subdivision ring represented by Area 3 (South Zone), most notably zip code 64012 with a12.68% population increase. Outer ring zip code 64030 appears to

be an anomaly showing only a 2.14% population growth as compared to a 5.92% population increase in the more inner ring zip code 64137 and a 12.68% population increase in outer ring zip code 64012.

"Cities that have invested in public transportation and downtown development are experiencing cost savings, growing tax revenues, increased property values and booming retail sales…."

As shown on Table 2 below the study area has 66,479 households and 115,575 adult residents ages 18 years and older. Area 2 has the greatest number of households and adult residents ages 18 years and older. Area 3 has the lowest number of households and adult residents ages 18 years and older.

TABLE 2: Expanded 2009 Population Factors – KCRRR South Line Study Area Zip Codes

Geographic Area	Zip Code	Population	%	Households	%	Adult 18+	%
Area 1	64129	9,746	6%	4,762	7%		
	64130	22,919	14%	10,346	16%		
	64132	14,567	9%	6,954	10%		
Sub Total		**47,232**	**29%**	**22,062**	**33%**	**36,427**	**32%**
Area 2	64134	22,996	14%	9,212	14%		
	64137	10,657	7%	4,247	6%		
	64138	25,053	16%	10,646	16%		
Sub Total		**58,706**	**37%**	**24,105**	**36%**	**42,844**	**37%**
Area 3	64012	28,731	18%	9,966	15%		
	64030	25,406	16%	10,346	16%		
Sub Total		**54,137**	**34%**	**20,312**	**31%**	**36,304**	**31%**
Grand Total		**160,075**	**100%**	**66,479**	**100%**	**115,575**	**100%**

Source: http:// zipcode.com, US Census and MERIC Economic Profile

As shown on Table 2 above the total study area population is 160,075 of which 28,731 or 18% (zip code 64012) live in Cass County, Missouri and 131,344 or 82% live in Jackson County, Missouri. The Cass County total population is 100,184 of which 28,731 or 29% live in the study area. The Jackson County total population is 705,708 of which 131,344 or 19% live in the study area.

Population data for the five KCRRR counties is shown on Table 3 below. The total population of the five counties served by the KCRRR system is 1,280,023 of which the study area population is 160,075 or 12.50%. Of the five KCRRR counties Clay County, Missouri experienced the largest total population growth between 2000 and 2009 of 44,352 or 24.10% and Wyandotte County, Kansas had the smallest population growth with a population loss of -2,772 or -l.76%. Of the four Missouri KCRRR Counties Jackson County had the lowest total population growth between 2000 and 2009 of 7.76% which is one third of the population growth in Missouri counties of Cass, Clay and Platte during the same period.

TABLE 3: Population – KCRRR Counties

Geographic Area	2000	2009	Change	% of Change
Missouri	5,595,211	5,987,580	392,369	7.01%
Cass County	82,092	100,184	18,092	22.04%
Clay County	184,006	228,358	44,352	24.10%
Jackson County	654,880	705,708	50,828	7.76%
Platte County	73,781	90,688	16,907	22.92%
Total	**994,759**	**1,124,938**	**130,179**	**13.09%**
Kansas	2,692,810	2,818,747	125,937	4.68%
Wyandotte County	157,857	155,085	-2,772	-1.76%
KCRRR Counties	**1,152,616**	**1,280,023**	**127,407**	**11.05%**

Source: MERIC Economic Data, US Census and Institute for Policy and Social Research, University of Kansas, Lawrence, KS 66045

The five KCRRR counties as shown in Table 3 above showed a population increase from 2000 to 2009 of 127,407 or 11.05%. The four Missouri KCRRR counties had a population increase in the period 2000 – 2009 of 130,179 or 13.09%. Wyandotte County, Kansas had a -1.76% loss of population. In comparison the Missouri population increase during this period was 392,369 or 7.01% and the Kansas population increase was 125,937 or 4.68%. The inner ring counties of Jackson and Wyandotte had the smallest population increase and the outer ring counties of Cass, Clay and Platte had the largest population increase during the period.

GEOGRAPHIC AREA AND HOUSEHOLD DENSITY PER ACRE

As shown on Table 4 below the geographic area of the study area contains 120.41 square miles and 75,256 acres and represents 5.1% of the geographic area of the KCRRR counties. The largest study area zip code is 64012 (45.81 square miles and 28,800 acres) and the smallest zip code is zip code 64137 (6.11 square miles and 3,840 acres). Zip code 64130 has the highest

household density per acre of 2.31. Zip code 64012 has the lowest household density of .35 per acre. The average household density for the study area is 1.13 per acre.

"Zoning ordinances that allow height, density, and mixed use development along transit corridors are often as enticing as a tax break or other financial incentive."

TABLE 4: Geographic Area and Household Density per Acre – KCRRR South Line Study Area

Geographic Area	Zip Code	Land Area*	Acres	%	Households	Households per acre
Area 1	64129	10.70	6,400	8.50%	4,762	.74
	64130	7.12	4,480	5.96%	10,346	2.31
	64132	10.04	6,400	8.50%	6,954	1.09
Sub Total		**27.86**	**17,280**	**22.96%**	**22,062**	**1.28**
Area 2	64134	12.43	7,680	10.21%	9,212	1.20
	64137	6.11	3,840	5.10%	4,247	1.11
	64138	13.68	8,366	11.12%	10,646	1.27
Sub Total		**32.22**	**19,886**	**26.43%**	**24,105**	**1.21**
Area 3	64012	45.81	28,800	38.27%	9,966	.35
	64030	14.52	9,290	12.34%	10,346	1.11
Sub Total		**60.33**	**38,090**	**50.61%**	**20,312**	**.53**
Grand Total		**120.41**	**75,256**	**100%**	**66,479**	**1.13**

*Land area is expressed in square miles
Source: http:// zipcode.com, US Census and MERIC Economic Profile

As shown on Table 5 below the geographic area of the five KCRRR counties consists of 2,310.85 square miles and 1,478,943 acres. Cass County, Missouri is the biggest KCRRR County with 702.67 square miles and 449.708 acres or 30.41% of the KCRRR counties. Wyandotte County, Kansas is the smallest KCRRR County with 155.69 square miles and 99,642 acres or 6.74% of the KCRRR counties. The four Missouri counties make up 93.26% of the KCRRR counties total geographic area and Wyandotte County, Kansas represents 6.74% of the KCRRR total geographic area. Jackson County, Missouri represents 26.67% of the geographic area of the five KCRRR counties and has the highest household density of .67 households per acre. Cass County, Missouri has the lowest household density of .07 households per acre. The average household density for all of the KCRRR counties is .31 per acre.

These five KCRRR counties are presented for comparison. The Jackson County data is of particular interest in that it represents the largest population (705,708 or 55%) among those presented.

TABLE 5: Geographic Area and Household Density per Acre – KCRRR Counties

Geographic Area	Land Area*	Acreage	%	Households	Households per acre
Missouri	**69,704**	**44.6 M**		**2,194,594**	**.05**
Cass County	702.67	449,708	30.41%	30,236	.07
Clay County	408.86	261,670	17.69%	72,613	.28
Jackson County	616.41	394,502	26.67%	266,501	.67
Platte County	427.22	273,421	18.49%	29,317	.11
Total	**2,155.16**	**1,379,301**	**93.26%**	**398,667**	**.29**
Kansas	**82,277**	**52.7 M**		**1,037,891**	**.02**
Wyandotte County	155.69	99,642	6.74%	59,700	.60
KCRRR Counties	**2,310.85**	**1,478,943**	**100%**	**458,367**	**.31**

*Land area is expressed in square miles
Source: MERIC State of Missouri Economic Development, US Census data, and Institute for Policy and Social Research, University of Kansas, Lawrence, KS 66045

HOUSEHOLD INCOME

The household income variable is important as defined by the Center for Neighborhood Technology (CNT) affordability index. The income defined as household income is considered a measure of income from all sources per household in a given area. The CNT index uses this variable to assess affordability which assesses both efficiency and sustainability.

"Residents of more compact communities drive less. Households in location efficient communities drive fewer miles as a result of lower car ownership, higher transit usage and greater amenities like stores and restaurants within walking distance. Increasing residential density from five to ten units per acre reduces miles traveled per household by 3,930 annually in Massachusetts – a decrease of 24%."

"Most people don't realize that transportation is the second-highest expense for most Americans and the highest for those with the lowest incomes. The promotion of accessible and equitable transportation policies is critical to providing affordable options to all Americans."

"Arlington's decision to allow for dense development around the Metro stations, developer interest and a clear demand for the product have provided a strong case for the importance of understanding and taking advantage of the connection between transportation and land use."

As shown on Table 6 below the South Line study area has a household income in the range of $24,266 (zip code 64l30) to $53,313 (zip code 64012) which is a difference between the highest and lowest household income of $29,047 or 54.48%.

TABLE 6: Household Income – KCRRR South Line Study Area Zip Codes

Geographic Area	Zip Code	Household Income
Area 1	64129	$33,972
	64130	$24,266
	64132	$27,556
Area 2	64134	$39,176
	64137	$41,439
	64138	$41,752
Area 3	64012	$53,313
	64030	$40,003

Source: MERIC State of Missouri Economic Development and http:// zipcode.com

TABLE 7: Household Income – KCRRR Counties

Geographic Area	2009 Household Income
Missouri	$36,688
Cass County	$33,300
Clay County	$36,269
Jackson County	$36,821
Platte County	$41,452
Kansas	$36,712
Wyandotte County	$39,208

Source: Wyandotte County: Data Sources: Total Population: U.S. Census Bureau Population Estimates for July 1, 2008; Population by Sex and Median Age: U.S. Census Bureau Population Estimates for July 1, 2008 and Institute for Policy and Social Research, University of Kansas, Lawrence, KS 66045, U.S. Bureau of Economic Analysis.

As shown on Table 7 above the KCRRR County with the highest household income is Platte County, Missouri ($41,452). The KCRRR County with the lowest household income is Cass County, Missouri ($33,300). The difference between the highest and lowest county household

income is $8,152 or 19.66%. By comparison Missouri household income is $36,688 and Kansas household income is $36,712. The disparity between highest and lowest household income is significantly greater in the study area zip codes as shown on Table 6 (54.48%) than it is in the five KCRRR counties as shown in Table 7 above (19.66%).

AFFORDABILITY INDEX

The household income of families is an important measure to assess the sustainability of families, of neighborhoods, and of communities. The KCRRR option to communities offers the opportunity to increase efficiency of family affordability. According to the Center for Neighborhood Technology (CNT) the percent of household income of Kansas City Metropolitan Area families allocated to housing (H) is 24% and the percent of household income allocated to transportation (T) is 22.7%. These figures are modeled for the regional typical household, or households earning the area median income and result in an affordability index (also known as the H + T Index) of 46.7% for the Kansas City region. The formula for determining the affordability index is: Housing costs + Transportation costs divided by income.

"The H + T Index relies on the U.S, Census' Selected Monthly Owner Costs (SMOC) and Gross Rent to arrive at the housing half of the equation. These Census variables include: utility expenses, mortgage payments, rent payments, condominium and other fees, real estate taxes, and premiums for home owners insurance. Transportation costs are calculated using nine variables, most of which are derived from the 2000 U.S. Census, that are divided between neighborhood (residential density, gross density, average block size, transit connectivity index, job density, and average journey to work time) and household (household income, household size, and commuters per household) characteristics. These variables are used to predict, at a census block group level, three dependent variables – auto ownership, auto use, and public transit usage – from which transportation costs are calculated." (CNT, Pennywise Pound Fuelish, dated February, 2010).

KANSAS CITY AFFORDABILITY INDEX

In an analysis entitled "A Heavy Load: Combined Household and Transportation Burdens of Working Families", the Center for Neighborhood Technology determined Kansas City Metropolitan Area housing and transportation costs for "working families", defined as households earning between $20,000 and $50,000 annually. Household income in seven of the eight zip codes within the South Line study area is between $20,000 and $50,000 characterizing those zip codes as "working family" under the CNT definition. The eighth zip code 64012 which has household income of $53,313 or just 6.6% above the working family upper limit is classified, for purposes of this study, as working family. Therefore all of the South Line study area can be characterized as "working family households" under the CNT definition.

The CNT Heavy Load study found that the Kansas City metropolitan area "working family" percent of household income allocated to housing is 23%. This rate is 7% below the CNT maximum recommended household rate of 30% of household income. However, the percent of household income allocated to transportation is 33% which exceeds the CNT transportation rate goal of 15% of household income by 18%.

The result is a Kansas City region working families' affordability index of 56%. This rate exceeds the CNT recommended rate of 45% by 11%. The comparison between the Kansas City regional median affordability index (46.7%) and the working family affordability index (56%) is interesting and seems to indicate that in the Kansas City region low income families are significantly more burdened with transportation costs than the median earning households (22.7% compared to 33%). This indication applies to the entire South Line study area.

CENTER FOR NEIGHBORHOOD TECHNOLOGY AFFORDABILTY RATINGS

The CNT recommends a rate of 45% as a rate of affordability. The CNT rates are considered to contribute to sustainability of neighborhoods and communities. The Kansas City region housing index for median and working families is 24% and 23% respectively. The CNT recommended maximum amount for housing of 30%. Housing in KC is affordable for both median and working families in the Kansas City region. However, the Kansas City transportation index for median and working families (22.7% and 33% respectively) is significantly higher than the CNT recommended amount of 15%.

As a result of these high transportation costs the affordability index for both median and working families in the Kansas City region exceeds the CNT recommended rate of 45%. This excess can be attributed in large part to the preponderance of low density sprawl land use development throughout the Kansas City region which requires extensive auto commuting. The lack of viable and accessible transit options does not allow families to reduce their transportation costs for employment and other transit needs.

Applied to the KC area the KCRRR plan provides residents with a transit choice within a comprehensive mobility management system. This transit choice option creates an opportunity to lower transportation costs per family which may reduce the CNT Kansas City transportation estimate of 22.7% for median households and 33% for working families to the recommended rate of 15%. This direct consequence of the KCRRR plan would appreciably affect the sustainability and the viability of KCRRR communities by making them more location efficient. The closer the transportation component of the affordability index in the KCRRR area is to 15% the expected consequence is that the discretionary income and savings increases while the transportation costs become less burdensome.

"For those who commute into the city, a train ticket can be vastly cheaper than car ownership. Monthly riders in Zone F for example, pay $128.25. Car owners have average monthly expenses of $479 in car payments, $108 in insurance, $300 for Loop parking, and based upon the length of the commute $242 for gasoline and maintenance, for a total monthly cost of $1,129."

ECONOMIC FACTORS ASSOCIATED WITH RAPID RAIL AND TRANSIT

Economic factors related to the KCRRR plan include the recognition that rail technology is more advanced, more efficient and more feasible today. The concern for fuel cost and energy costs is a more immediate consideration for fiscal efficiency for both municipalities and businesses. The

additional concern is related to the environmental and safety concerns which represent a significant community value, for example, land use issues can be addressed, the incidence of automobile accidents and fatalities may be reduced; access to employment and education may be increased. Rapid rail can also be associated with the decrease in demand for highway construction, and more efficient use of existing roadways. The land use potential is associated with higher efficiency of land in terms of increased density of population and income as a result of increased land use based on more compact transit oriented development. The economic factors are also critical to employment concerns of business. Importantly, KCRRR can increase reliability of labor force and the access of new sources of labor.

The social issues are associated with the quality of life expectation which also include the access to recreation, education, and health. The business concerns and those of residents are these economic and social considerations which characterize a viable and sustainable community. Communities which seek to be relevant and viable in the new economic landscape need to address the new concerns of business for environmentally conscious and the attractiveness of the quality of life of the community. These sustainable features are the competitive advantages which are associated with economic development.

"A new report from Smart Growth America suggests that Washington State invest heavily in repairing its roads and bridges – which saves money over the long run – and to fund more statewide investments in public transit, which create almost twice the jobs that highways do, help others get to their jobs, and attract private sector investment, creating still more jobs."

SCENARIOS TO DEPICT THE ANNUALIZED KCRRR EFFICIENCIES RELATIVE TO CURRENT ENVIRONMENT

The current environment represents an opportunity to consider the new economic issues which emphasize potentials of efficiency. Toward this end, the calculations in Table 8 represent the efficiency savings for each family and for each zip code. These savings are calculated using the CNT Affordability Index which indicates a recommended rate of 45% comprised of not more than 30% maximum for housing and a recommended transportation goal of 15%. The rate for the Kansas City Area working families is calculated at 56%. (H @ 23% + T @ 33%)

The following scenarios portray the potential efficiency savings accrued to each family and to each zip code in the South Line study area from the KCRRR transit option. The savings would accrue annually to each family and would add to the viability and sustainability of the area served by KCRRR South Line. In addition there are savings which would occur by more efficient land use, and reduced costs to municipalities in terms of fuel, energy, and highway maintenance and construction. The KCRRR would appreciably affect the positive appreciation of land values and residential home and commercial building values. The increased property values and the associated enhancement of real estate taxes resulting from the KCRRR transit option would result in additional revenues and efficiencies for municipal and other governmental entities.

Scenario A:
The efficiency savings benefit realized by reducing the working families' affordability index in each of the eight study area zip codes from the current rate of 56% to the CNT recommended rate of 45% is shown on Table 8 below. This calculation assumes the housing component remains at the current 23% and the transportation component is decreased by 11% from 33% to 22% of household income. The zip code with the largest household efficiency saving is 64012 at $58.5 million dollars annually. Zip code 64129 has the lowest household efficiency savings at $17.8 million dollars annually. Individual household efficiency savings is highest in zip code 64012 at $5,865 annually and lowest in zip code 64130 at $2,669. Reduction of the working families' affordability index, to the CNT recommended rate of 45% of household income in the study area, results in an annual efficiency savings of $279.5 million dollars. This table suggests the KCRRR South Line creates an opportunity for study area working families to substantially increase in dollars available for discretionary spending by reducing transportation costs. This savings is a result of efficiency of transit. The data presented in Table 8 below suggest the annualized efficiency savings which might occur.

TABLE 8: Scenario A- Estimated Annual and Monthly Efficiency Savings Per Household and Zip Code for South Line Study Area based on CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

Geographic Area	Zip Code	Households	Household Income	CNT Index @ 56%	CNT Index @ 45%	Annual Savings	Mthly Savings	Savings per Zip Code*
Area 1	64129	4,762	$33,972	$19,024	$15,287	$3,737	$311	$17.8 M
	64130	10,346	$24,266	$13,589	$10,920	$2,669	$222	$27.6 M
	64132	6,954	$27,566	$15,431	$12,400	$3,031	$253	$21.1 M
Sub Total		**22,062**						**$66.5M**
Area 2	64134	9,212	$39,176	$21,939	$17,629	$4,310	$359	$39.7 M
	64137	4,247	$41,439	$23,206	$18,647	$4,559	$380	$19.4 M
	64138	10,646	$41,752	$23,381	$18,788	$4,593	$383	$49.9 M
Sub Total		**24,105**						**$109 M**
Area 3	64012	9,966	$53,313	$29,855	$23,990	$5,865	$489	$58.5 M
	64030	10,346	$40,003	$22,402	$18,001	$4,401	$367	$45.5 M
Sub Total		**20,312**						**$104 M**
Grand Total		**66,479**						**$279.5 M**

Source: http:// zipcode.com and MERIC State of Missouri Department of Economic Development
*Amounts expressed in millions of dollars

LAND USE AND DENSITY ISSUES

The efficiency efforts of transit are broadly associated with transit efficiency but the increased real estate and land use effects are suggested in a number of major studies. These findings indicate that planning in transit considerations for land use and real estate are included. These factors are related to findings that real estate values increase and more efficient land use occurs. The studies also indicate that transit ridership grows as residential density increases. These results are considered in the following data which reflect the land density.

"Transit ridership grows as residential density increases. In urban areas with public transit, the percentage of commuters that use transit doubles from 15% to 30% of commuters as residential density increases from ten to 20 units per acres, thereby reducing their travel costs and environmental impacts."

Scenario B:
The Scenario B suggests the efficiency savings in participation percentages. The underlying assumptions include the following: (1) Not every household will participate in the KCRRR transit option, (2) Participation may increase over time as households become more familiar with the KCRRR transit option, and (3) Participation may increase on a long term basis as land use patterns and development becomes more transit oriented in response to the KCRRR transit option.

The participation rates were selected as follows: The 4.5% participation rate represents the average of the highest potential weekday riders (5,602 riders or 4.85%) and lowest potential weekday riders (4,930 riders or 4.27%) as a percentage of the total adult residents, ages 18 years and older (115,575) living in the South Line study area. The average percentage of total estimated weekday riders is assumed to each represent one household per rider for purposes of this study. The 10% participation rate was selected in response to the literature which suggests that the actual rapid rail ridership will be approximately twice the estimated ridership after the rail system begins operating. The remaining participation rates were selected at random.

"An effective public transportation system can simply increase the quality of life in a city. By transporting people to work, school, local attractions, and health care facilities, public transit can reach into nearly every area of city life, from public health to tourism. Statistics show that public transit has experienced rapid growth, providing economic benefits to individuals and municipalities alike…According to American Public Transportation Association, a nonpartisan organization that advocates for public transit improvement, that increase in transit has spurred an increase in economic activity. The association estimates that for every one dollar invested in public transportation, four dollars are generated in economic returns. APTA also reported in January that in major urban areas, individuals on average save $9,656 annually by using public transportation instead of driving."

Scenario B in Table 9 below portrays the efficiency savings for the South Line study area at select participation levels of 4.5%, 10%, 25%, 50% and 100% based on the CNT Kansas City region working family affordability index of 45% (H @ 23% and T @ 22%). At the lowest

participation rate of 4.5% the annualized estimated efficiency savings for the study area is $12.58 million dollars compared to estimated annual efficiency savings of $279.5 million dollars at highest selected participation rate of 100%. The difference between the lowest and highest annual estimated efficiency savings for the study area is $266.92 million dollars.

TABLE 9: Scenario B - Efficiency Savings Estimate for South Line Study Area Zip Codes based on Selected Participation Percentages at CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

Geographic Area	Zip Code	4.5%	10%	25%	50%	100%*
Area 1	64129	$.80	$1.78	$4.45	$8.9	$17.8
	64130	$1.25	$2.76	$6.9	$13.8	$27.6
	64132	$.95	$2.11	$5.28	$10.55	$21.1
Sub Total		**$3.00**	**$6.65**	**$16.63**	**$33.25**	**$66.5**
Area 2	64134	$1.78	$3.97	$9.93	$19.85	$39.7
	64137	$.87	$1.94	$4.85	$9.7	$19.4
	64138	$2.25	$4.99	$12.47	$24.95	$49.9
Sub Total		**$4.90**	**$10.9**	**$27.25**	**$54.5**	**$109**
Area 3	64012	$2.63	$5.85	$14.62	$29.25	$58.5
	64030	$2.05	$4.55	$11.38	$22.75	$45.5
Sub Total		**$4.68**	**$10.4**	**$26**	**$52**	**$104**
Grand Total		**$12.58**	**$27.95**	**$69.88**	**$139.75**	**$279.5**

Source: http:// zipcode.com, US Census and MERIC Economic Profile
*From Scenario A, Table 8
Note: All amounts expressed in millions of dollars

The efficiency savings potential per zip code are estimated based on levels of participation. These savings which result by efficiency of transit represent financial ability within each zip code to address the sustainability of residential and business interest.

"Those planning the Central Corridor light rail are hoping they can use tax-increment financing districts to help pay upfront for millions of dollars in public improvements needed along the line to pave the way for billions in private investment. But to use TIF districts all along the 11 mile corridor – not just in select pockets…officials say the state will need to create a new kind of TIF for transit oriented development…Such a new TIF would also allow a city like St. Paul to use the money from TIF districts for a number of purposes that it can't under existing rules – like to finance grant programs to help both homeowners and small businesses whose property values would increase as a result of the new transit oriented development or TOD."

Scenario C:
The study area efficiency savings per zip code at the selected participation rates shown on Table 9 above has been converted into efficiency savings per acre as shown on Scenario C, Table 10 below. The formula for determining efficiency savings per acre is: Total efficiency savings per zip code divided by zip code total acres equals total annual efficiency savings per acre. Total annual efficiency savings per acre multiplied by the selected participation percentages equals the annual savings per zip code acre at the selected participation rate.

Of note is that zip code 64130 with the lowest household income in the study area ($24,266) also has the highest household density (2.31 HPA) while zip code 64012 with the highest household income ($53,313) also has the lowest household density (.35 HPA). As shown in the Scenario C, Table 10 below the annual per acre efficiency savings for zip code 64130 ($6,161) is approximately three times as much as the per acre efficiency savings for zip code 64012 ($2,031) despite the fact that zip code 64012 household income ($53,313) is more than twice as much as household income in zip code 64130 ($24,266).

TABLE 10: Scenario C – Per Acre Annual Efficiency Savings Estimate for South Line Study Area Zip Codes Based on Selected Participation Percentages at CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

Geographic Area	Zip Code	Acreage	HPA*	4.5%	10%	25%	50%	100%	Zip Code Savings**
Area 1	64129	6,400	.74	$125	$278	$695	$1,390	$2,781	$17.8M
	64130	4,480	2.31	$277	$616	$1,515	$3,030	$6,161	$27.6M
	64132	6,400	1.09	$148	$330	$824	$1,633	$3,297	$21.1M
Sub Total		**17,280**	**1.28**	**$173**	**$385**	**$962**	**$1,924**	**$3,848**	**$66.5M**
Area 2	64134	7,680	1.20	$233	$517	$1,292	$2,584	$5,169	$39.7M
	64137	3,840	1.11	$227	$505	$1,263	$2,526	$5,052	$19.4M
	64138	8,366	1.27	$268	$596	$1,491	$2,982	$5,965	$49.9M
Sub Total		**19,886**	**1.21**	**$247**	**$548**	**$1,370**	**$2,740**	**$5,481**	**$109M**
Area 3	64012	28,800	.35	$91	$203	$508	$1,015	$2,031	$58.5M
	64030	9,290	1.11	$220	$490	$1,224	$2,449	$4,898	$45.5M
Sub Total		**38,090**	**.53**	**$123**	**$273**	**$682**	**$1,365**	**$2,730**	**$104M**
Grand Total		**75,256**	**1.13**	**$167**	**$371**	**$928**	**$1,857**	**$3,714**	**$279.5M**

*Household density per acre.
**From Scenario A, Table 8 – Amounts expressed in millions of dollars

These data are suggestive that there is increased economic benefit to areas that are more compact, even though the household income in those areas may be substantially lower. The

KCRRR transit option is supportive of transit oriented development which can increase the income densities within the South Line study area resulting in more efficient, competitive and sustainable communities. For example, the Trails KC Plan included in Section 2 shows 18 – 40 dwelling units per acre in the mixed-use transit oriented development area adjacent to the CID rail station. The Trails KC Plan reflects the potential increased economic benefit and efficiency in areas that are more compact and is consistent the KCRRR priority of promoting localized sustainable development and regional competitiveness.

"New information from Census 2010 provides empirical confirmation of the significance of land use planning around Metro stations in influencing the growth of Arlington and other places in Northern Virginia. Over the last ten years Arlington County's growth has been overwhelmingly concentrated along the Metro corridors…The densification of these areas is effectively extending the inner city core of the Washington D.C. region and substituting sprawling development in the exurbs with dense construction. This represents a change in trends compared to the period between 1990 and 2000."

Scenario D:
Scenario D portrays the additional efficiency savings available to the South Line study area with a 38% CNT affordability index. Scenario D in Table 11 below is the same as Scenario A, Table 8 above, except that the transportation component has been lowered by an additional 7% to the CNT recommended transportation rate of 15%. In Scenario A the transportation rate was decreased from 33% to 22% which when combined with the housing rate of 23% resulted in the CNT recommended 45% affordability index rate. By reducing the transportation factor by an additional 7% to match the CNT recommended 15% rate additional efficiency savings are produced for the South Line study area because the affordability index is now 38% or 7% below the CNT maximum recommended rate of 45%. The potential additional efficiency savings are substantial. For example, zip code 64130 annual household efficiency savings increases from $2,669 at 45% to $4,368 at 38%. The additional savings of $1,699 represents a 64% increase in annual efficiency savings for households in zip code 64130 at a 38% CNT affordability index.

"The idea of transit oriented development (TOD) is really central because it links the region together in ways that we need to link. The idea that everybody is going to live, work, and play in the same neighborhood is not realistic. People are always going to travel to their best job opportunity. The question is what travel options do they have? The idea of transit oriented development is very simply that you need to conveniently walk to local destinations and transit opportunities that connect you to all sorts of regional opportunities, whether its jobs or unique regional cultural or environmental resources…At the same time, you're connecting a lot of suburban environments to a polycentric set of destinations throughout the region. It's a way to renovate and connect. It's a way to provide affordable housing opportunities throughout the region."

"In the domestic context, we need to embrace the concept of sustainability as a new paradigm for how our nation will develop into the future. We need to adopt "smart growth" as our domestic policy imperative that complements a foreign policy that leverages "smart power." A new community model is called for; one that moves beyond our present understanding of sustainability and adds resiliency to the social, economic and environmental elements of the current sustainability model. By adding resiliency to the sustainability model, a more holistic system can be designed to address both the opportunities and challenges we will face in the 21st Century. Functionally, this new model should leverage the converging interests as well as the resources of the public, private, and civil sectors such that "smart growth" can occur for both private profit and public good."

TABLE 11: Scenario D – Estimated Annual and Monthly Savings per Household and Zip Code for South Line Study Area Based on CNT Working Family Affordability Index of 38%. (H @ 23 + T @ 15%)

Geographic Area	Zip Code	House holds	House hold Income	CNT Index @ 56%	CNT Index @ 38%	Annual Savings	Monthly Savings	Savings per Zip Code*
Area 1	64129	4,762	$33,972	$19,024	$12,909	$6,115	$510	$29.1 M
	64130	10,346	$24,266	$13,589	$9,221	$4,368	$364	$45.2 M
	64132	6,954	$27,566	$15,431	$10,471	$4,960	$413	$34.5 M
Sub Total		**22,062**						**$108.8 M**
Area 2	64134	9,212	$39,176	$21,939	$14,887	$7,052	$588	$64.9 M
	64137	4,247	$41,439	$23,206	$15,747	$7,459	$622	$31.7 M
	64138	10,646	$41,752	$23,381	$15,866	$7,515	$626	$80 M
Sub Total		**24,105**						**$176.6 M**
Area 3	64012	9,966	$53,313	$29,855	$20,259	$9,596	$800	$95.6 M
	64030	10,346	$40,003	$22,402	$15,201	$7,201	$600	$74.5 M
Sub Total		**20,312**						**$170.1 M**
Grand Total		**66,479**						**$455.5 M**

Source: Pennywise and Pound Fuelish CNT February 2010
US Census as reported by MERIC State of Missouri Economic data
*Amounts expressed in millions of dollars

Scenario D suggests that additional efficiency savings are possible in the South Line study area beyond matching the CNT recommended affordability index of 45%. Lower housing costs

combined with the KCRRR transit option indicate a 38% affordability index can be achieved in the study area.

"The ability of transit to stimulate development is clearly related to how well the transit seems to promise good mobility to the people who will live, work, or play there. We don't pay more for an apartment over a transit station because the station is a nice community amenity, like brick paving and planter boxes. A transit station adds value to development precisely because buyers think it will make it easier for them, or their tenants, to get around. So if transit isn't credible in offering mobility, or at least appearing to do so, it's unlikely to stimulate development."

Scenario E:
Scenario E portrays the additional efficiency savings available to the South Line study area with a 38% affordability index. Table 12 below portrays the additional efficiency savings for the study area at selected participation percentages resulting from reducing the transportation factor from 22% to the CNT recommended rate of 15%.

TABLE 12: Scenario E - Efficiency Savings Estimate for South Line Study Area Zip Codes based on Selected Participation Percentages at CNT Working Family Affordability Index of 38% (H @ 23% + T @ 15%)

Geographic Area	Zip Code	4.5%	10%	25%	50%	100%*
Area 1	64129	$l.3l	$2.91	$7.28	$14.55	$29.1M
	64130	$2.04	$4.52	$11.3	$22.6	$45.2M
	64132	$1.55	$3.45	$8.63	$17.25	$34.5M
Sub Total		**$4.90**	**$10.88**	**$27.2**	**$54.4**	**$108.8M**
Area 2	64134	$2.92	$6.49	$16.23	$32.45	$64.9M
	64137	$1.43	$3.17	$7.93	$15.85	$31.7M
	64138	$3.60	$8.0	$20	$40	$80M
Sub Total		**$7.95**	**$10.76**	**$26.9**	**$88.3**	**$176.6M**
Area 3	64012	$4.30	$9.56	$23.9	$47.8	$95.6M
	64030	$3.35	$7.45	$18.63	$37.25	$74.5M
Sub Total		**$7.65**	**$17.01**	**$42.53**	**$85.05**	**$170.1M**
Grand Total		**$20.50**	**$45.55**	**$113.88**	**$227.75**	**$455.5M**

Source: zipcode.com, MERIC and US Census
*From Scenario D, Table 11
Note: All amounts expressed in millions of dollars

Scenario E suggests that additional efficiency savings are possible in the South Line study area beyond matching the CNT recommended affordability index of 45%. Lower housing costs combined with the KCRRR transit option indicate a 38% affordability index can be achieved in the study area.

"There's no doubt riding a train is less expensive for the individual and also if you fill those trains during the day, you've got to build less highways. Well, that's a lot less expensive. And I think not only your local, but your state and federal governments are going to push this more and more."

Scenario F:
Table F below shows the additional per acre study area efficiency savings as a result of decreasing the transportation factor by 7% to 15% from 22%.

TABLE 13: Scenario F – Per Acre Annual Efficiency Savings Estimate for South Line Study Area Zip Codes Based on Selected Participation Percentages at CNT Working Family Affordability Index of 38% (H @ 23% + T @ 15%)

Geographic Area	Zip Code	Acreage	HPA	4.5%	10%	25%	50%	100%	Zip Code Savings*
Area 1	64129	6,400	.74	$205	$455	$1,137	$2,273	$4,547	$29.1M
	64130	4,480	2.31	$454	$1,009	$2,522	$5,044	$10,089	$45.2M
	64132	6,400	1.09	$242	$539	$1,348	$2,695	$5,391	$34.5M
Sub Total		**17,280**	**1.28**	**$283**	**$630**	**$1574**	**$3,148**	**$6,296**	**$108.8M**
Area 2	64134	7,680	1.20	$380	$845	$2,112	$4,225	$8,450	$64.9M
	64137	3,840	1.11	$371	$825	$2,064	$4,127	$8,255	$31.7M
	64138	8,366	1.27	$430	$956	$2,390	$4,781	$9,562	$80M
Sub Total		**19,886**	**1.21**	**$400**	**$888**	**$2,220**	**$4,440**	**$8,881**	**$176.6M**
Area 3	64012	28,800	.35	$149	$332	$830	$1,659	$3,319	$95.6M
	64030	9,290	1.11	$361	$802	$2,005	$4,009	$8,019	$74.5M
Sub Total		**38,090**	**.53**	**$201**	**$446**	**$1,116**	**$2,232**	**$4,465**	**$170.1M**
Grand Total		**75,256**	**1.13**	**$272**	**$605**	**$1,513**	**$3,026**	**$6,053**	**$455.5M**

Source: MERIC economic data and US Census
*From Scenario D, Table 11 – Amounts expressed in millions of dollars

Scenario F suggests that additional efficiency savings are possible in the South Line study area beyond matching the CNT recommended affordability index of 45%. Lower housing costs combined with the KCRRR transit option indicate a 38% affordability index can be achieved in the study area.

"Land uses such as office, commercial and medium/high density residential are well suited for neighborhood centers and locations next to existing or proposed transit routes. By clustering these uses around community focal points and public spaces, more people benefit from access to transit services and other public amenities. Additionally, increased density makes transit service more cost effective, since each route is able to serve more people."

These scenarios suggest the potential in savings based on efficiencies. The increased savings can result in increased retail and increased retail taxes. The wealth effect can be expressed by increased valuations of real estate and land valuations. These effects which can potentially produce savings are an indictor of community viability. As communities gain stability in incomes, and property valuations; the ability to sustain communities in infrastructure and in livability can assert itself.

The KCRRR transit option produces a transit choice for a population which is characterized as the working class by the CNT analysis. The 69% favorable response to transit choice and the 4.5% ridership participation indicated by the South Line ridership assessment suggests that there is a favorable disposition to KCRRR. While ridership assessment is one measure of potential ridership rates, the "tipping point notion" (Malcolm Gladwell, "The Tipping Point: How Little Things Make a Difference") would suggest this response is well above the 4% rate needed to make a choice the preferred choice. This factor would therefore support the KCRRR on the South Line.

EFFICIENCY SAVINGS APPLIED TO AMORTIZATION OF ASSUMED KCRRR SOUTH LINE CAPITAL COSTS

The following scenarios (G, H, I and J) show the extent to which the annual study area efficiency savings at 4.5% and 10% participation rates and a CNT affordability index of 45% and 38% will amortize assumed KCRRR South Line capital costs of $100, $150, $200 and $250 million dollars over 20 and 30 year terms at selected interest rates.

Scenario G:
Scenario G, in Table 14 below, compares the annual study area efficiency savings at a CNT working family affordability index of 45% (H @ 23% + T @ 22%) to the annual principal and interest costs required to amortize selected KCRRR South Line capital costs at selected interest rates. The 4.5% interest rate is representative of current rates for 20 year tax exempt bonds issued by a county having a Moody's Aa3 annual appropriation bond rating. The 5% and 6% interest rates were randomly selected to illustrate the effect of future interest rate increases.

"To compete with other regions, we need to ensure that the money we spend on transit, roads, airports and sewers maximizes efficiency. The extension of a road or sewer is a sunk cost…More efficient patterns would make the most of existing infrastructure, and a closer link between transit, housing and jobs would save money for businesses and individuals. Families able to get by with one less car save up to $8,000 each year that can go toward housing, education or savings."

"The message to private developers, planning agencies and local governments is straightforward, If you want competitive money, we've set sustainability as the criterion for all of our funds…And that's really going to begin to change the game on a broad scale."

TABLE 14: Scenario G - 20 Year Amortization of KCRRR South Line Assumed Capital Costs Applying Selected Annual Study Area Efficiency Savings at CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

Capital Costs	Interest Rate	Annual P&I*	4.5% Efficiency Savings*	Difference Over Annual P&I*	10% Efficiency Savings*	Difference Over Annual P&I*
$100 M	4.5%	$7.59	$12.58	$4.99	$27.95	$20.36
$150 M	4.5%	$11.39	$12.58	$1.19	$27.95	$16.56
$200 M	4.5%	$15.18	$12.58	-$2.60	$27.95	$12.77
$250 M	4.5%	$18.98	$12.58	-$6.40	$27.95	$8.97
$100 M	5%	$7.92	$12.58	$4.66	$27.95	$20.03
$150 M	5%	$11.88	$12.58	$.07	$27.95	$16.07
$200 M	5%	$15.84	$12.58	-$3.26	$27.95	$12.11
$250 M	5%	$19.80	$12.58	-$7.22	$27.95	$8.15
$100 M	6%	$8.60	$12.58	$3.98	$27.95	$19.35
$150 M	6%	$12.89	$12.58	-$.31	$27.95	$15.06
$200 M	6%	$17.19	$12.58	-$4.61	$27.95	$10.76
$250 M	6%	$21.49	$12.58	-$8.91	$27.95	$6.46

*Note: Amounts expressed in millions of dollars rounded to nearest $10,000

Scenario G indicates that the annual study area efficiency savings at a 4.5% participation rate and a CNT affordability index of 45% will amortize assumed KCRRR South Line capital costs of up to $150 million dollars over 20 years at the selected interest rates of 4.5%, 5% and 6%. In comparison, the annual efficiency savings at a 10% study area participation rate will fully amortize all of the assumed KCRRR South Line capital costs at all of the selected interest rates over 20 years without utilizing all of the efficiency savings. For example, an assumed KCRRR South Line capital cost of $250 million dollars at a 5% interest rate over 20 years requires annual debt service (principal and interest) of $19.80 million dollars. The study area annual efficiency savings at a 10% participation rate and a CNT affordability index of 45% is $27.95 million dollars less the annual debt service of $19.80 million dollars results in an efficiency savings surplus of $8.15 million dollars.

Scenario H:
Scenario H, in Table 15 below, is the same as Scenario G above, except that the study area annual efficiency savings is based on the CNT affordability index of 38%.

TABLE 15: Scenario H - 20 Year Amortization of KCRRR South Line Assumed Capital Costs Applying Selected Study Area Annual Efficiency Savings at CNT Working Family Affordability Index of 38% (H @ 23% + T @ 15%)

Capital Costs	Interest Rate	Annual P&I*	4.5% Efficiency Savings*	Difference Over Annual P&I*	10% Efficiency Savings*	Difference Over Annual P&I*
$100 M	4.5%	$7.59	$20.50	$12.91	$45.44	$37.96
$150 M	4.5%	$11.39	$20.50	$9.11	$45.55	$34.16
$200 M	4.5%	$15.18	$20.50	$5.32	$45.55	$30.37
$250 M	**4.5%**	**$18.98**	**$20.50**	**$1.52**	**$45.55**	**$26.57**
$100 M	5%	$7.92	$20.50	$12.58	$45.55	$37.63
$150 M	5%	$11.88	$20.50	$8.62	$45.55	$33.67
$200 M	5%	$15.84	$20.50	$4.66	$45.55	$29.71
$250 M	5%	**$19.80**	**$20.50**	**$.70**	**$45.55**	**$25.75**
$100 M	6%	$8.60	$20.50	$11.90	$45.55	$36.95
$150 M	6%	$12.89	$20.50	$7.61	$45.55	$32.66
$200 M	6%	**$17.19**	**$20.50**	**$3.31**	**$45.55**	**$28.36**
$250 M	6%	**$21.49**	**$20.50**	**-$.99**	**$45.55**	**$24.06**

*Note: Amounts expressed in millions of dollars rounded to nearest $10,000

Scenario H indicates that all of the assumed KCRRR capital cost can be amortized at the selected interest rates from the study area efficiency savings at a 4.5% participation rate at a CNT affordability index of 38%. A 10% participation rate fully amortizes the assumed KCRRR South Line capital costs at the selected interest rates with substantial annual efficiency savings surpluses.

"Local governments and regional agencies should establish policies supporting coordinated land use and transportation planning. In addition, administrative changes to development codes are necessary to encourage – or in some cases, allow – the types of development that support transit use."

Scenario I:
Scenario I, in Table l6 below, is the same as Scenario G above except the amortization term has been extended from 20 years to 30 years and the interest rates changed to 5%, 6% and 7% to reflect the longer term. The 5% interest rate is representative of current rates for 30 year tax exempt bonds issued by a county having a Moody's Aa3 annual appropriation bond rating. The 6% and 7% interest rates were randomly selected to illustrate the effect of future interest rate increases.

TABLE 16: Scenario I - 30 Year Amortization of KCRRR South Line Assumed Capital Costs Applying Selected Study Annual Area Efficiency Savings at CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

Capital Costs	Interest Rate	Annual P&I*	4.5% Efficiency Savings*	Difference Over Annual P&I*	10% Efficiency Savings*	Difference Over Annual P&I*
$100 M	5%	$6.44	$12.58	$6.14	$27.95	$21.51
$150 M	5%	$9.66	$12.58	$2.92	$27.95	$18.29
$200 M	5%	$12.88	$12.58	-$.30	$27.95	$15.07
$250 M	5%	$16.10	$12.58	-$3.52	$27.95	$11.85
$100 M	6%	$7.19	$12.58	$5.39	$27.95	$20.76
$150 M	6%	$10.79	$12.58	$1.79	$27.95	$17.16
$200 M	6%	$14.39	$12.58	-$1.81	$27.95	$13.56
$250 M	6%	$17.99	$12.58	-$5.41	$27.95	$9.96
$100 M	7%	$7.98	$12.58	$4.60	$27.95	$19.97
$150 M	7%	$11.97	$12.58	$.61	$27.95	$15.98
$200 M	7%	$15.97	$12.58	-$3.39	$27.95	$11.98
$250 M	7%	$19.96	$12.58	-$7.38	$27.95	$7.99

*Note: Amounts expressed in millions of dollars rounded to nearest $10,000

Scenario I above indicates up to $150 million dollars of KCRRR South Line capital costs can be amortized over 30 years at the selected interest rates from the annual study area efficiency savings participation rate of 4.5% and a CNT affordability index of 45%. At a 10% participation rate all of the assumed KCRRR South Line capital costs scan be fully amortized over 30 years at each of the selected interest rates from the resulting efficiency savings with significant annual efficiency savings surpluses.

"The number of communities considered affordable drops dramatically in most regions when the definition of affordability shifts from a focus on housing costs alone to one that includes housing and transportation costs."

Scenario J:
Scenario J, in Table 17 below, is the same as Scenario I above, except the study area annual efficiency savings is based upon the CNT affordability index of 38% which reflects reducing the transportation rate from 22% to the CNT recommended 15%.

TABLE 17: Scenario J - 30 Year Amortization of KCRRR South Line Assumed Capital Costs Applying Selected Study Area Annual Efficiency Savings at CNT Working Family Affordability Index of 38% (H @ 23% + T @ 15%)

Capital Costs	Interest Rate	Annual P&I*	4.5% Efficiency Savings*	Difference Over Annual P&I*	10% Efficiency Savings*	Difference Over Annual P&I*
$100 M	5%	$6.44	$20.50	$14.06	$45.55	$39.11
$150 M	5%	$9.66	$20.50	$10.84	$45.55	$35.89
$200 M	5%	$12.88	$20.50	$7.62	$45.55	$32.67
$250 M	5%	$16.10	$20.50	$4.40	$45.55	$29.45
$100 M	6%	$7.19	$20.50	$13.31	$45.55	$38.36
$150 M	6%	$10.79	$20.50	$9.71	$45.55	$34.76
$200 M	6%	$14.39	$20.50	$6.11	$45.55	$31.16
$250 M	6%	$17.99	$20.50	$2.5l	$45.55	$27.56
$100 M	7%	$7.98	$20.50	$12.52	$45.55	$37.56
$150 M	7%	$11.97	$20.50	$8.53	$45.55	$33.58
$200 M	7%	$15.97	$20.50	$4.53	$45.55	$29.58
$250 M	7%	$19.96	$20.50	$.54	$45.55	$25.59

*Note: Amounts expressed in millions of dollars rounded to the nearest $10,000

The data presented in Scenario J, Table 17 above indicates all of the assumed KCRRR South Line capital costs can be fully amortized over 30 years from the annual study area efficiency savings at a participation rate of 4.5% and l0% at a CNT affordability index of 38% with a substantial annual efficiency savings surpluses.

The study area potential annual efficiency savings data indicates that the assumed capital costs of the KCRRR South Line ranging from $100 to $150 million dollars can be amortized over 20 years and 30 years at the selected interest rates at a 4.5% participation rate and a CNT affordability index of 45%. At a CNT affordability index of 38% all of the assumed KCRRR South Line capital costs ranging from $100 to $250 million dollars can be fully amortized over 20 years and 30 years at the selected interest rates at a 4.5% participation rate. At a 10% study area participation rate all of the KCRRR South Line assumed capital costs can be fully amortized over 20 years and 30 years at the selected interest rates by the annual study area efficiency savings at the 45% and 38% CNT affordability index rates with substantial annual efficiency savings surpluses left over.

The significant annual efficiency savings surpluses remaining after amortization of the KCRRR South Line assumed capital costs over 20 and 30 year terms at both a 45% and 38% CNT affordability index and a 10% participation rate suggests that the assumed capital costs may be

fully amortized in less than 20 years. For example, an assumed KCRRR South Line capital cost of $250 million dollars amortized over 10 years at a 7% interest rate requires annual principal and interest payments of $34.83 million dollars. As shown in Scenario J above, a 10% study area participation rate with a CNT affordability index of 38% results in annual efficiency savings of $45.55 million dollars. This efficiency savings amount is sufficient to amortize an assumed $250 million dollar KCRRR South Line capital cost over 10 years at a 7% interest rate or $34.83 million dollars annually with an annual efficiency savings surplus of $10.72 million dollars. This data indicates that the maximum assumed KCRRR South Line capital cost of $250 million dollars can be fully amortized within 10 to 20 years at the highest selected interest rate from the study area annual efficiency savings with between a 4.5% and 10% participation rate and a CNT affordability index between 38% and 45%.

The amortization data presented above indicates that the KCRRR South Line represents a strategic public infrastructure investment that will produce an acceptable "standard to the industry" return on its capital cost in the form of the annual efficiency savings resulting from the reduction of transportation costs in the study area sufficient to fully amortize its capital costs within 10 to 20 years.

Efficiency savings resulting from the KCRRR transit option applied to amortization of its assumed capital costs is only one indicator of the economic benefit of the KCRRR transit option in relation to its capital cost. Other indicators applicable to the study area may include increased sales taxes resulting from additional discretionary spending provided by the efficiency savings, additional real estate tax revenues caused by increased real estate values and more compact development, the multiplier effect produced by the per cent of efficiency savings spent locally, earnings taxes and other employment taxes produced by more local employment and additional investment and business activity attracted to the study area by the KCRRR South Line transit option.

"Not only do trains draw more riders than buses, they lure more auto drivers to switch to transit. Transport analysts refer to the tendency as "rail bias" or the "coolness factor," meaning that people simply prefer trains over buses."

CONCLUSIONS

The data presented in this study suggest that economic viability of communities in the South Line Area may be more related to changes which result in new ways of addressing the sustainability of communities. The pattern of economic development of the past decades has been sprawl supported by the automobile transit. This approach to economic development has used the constant expansion of both residential and business interests geographically. The assumption of this approach has been the automobile as the primary and preferred mode of transit to accommodate sprawl. The sprawl has been supported by direct and indirect public policy initiatives. Today there is a question: Is economic development based on sprawl and the automobile the preferred model for economic development?

The economic structural imbalances which accrue are based on the inadequacy of public finance to support the expanding infrastructure for economic development, to support the legacy costs of

public employment, to support the health care and pension liabilities, to support the deferred maintenance costs of facilities and physical assets, and to support the need for public investment. For example the doubling of the price of oil over the decade have affected the abilities in municipalities to meet the cost of maintaining facilities, of highways, of roadways and the investments needed to meet the requirements of business and residential. This economic structural imbalance specifically affects the ability of communities to meet present obligations and to plan for future needs.

Income efficiency is one consideration which can affect long term results. This result is dependent on the ability of financial planning. If income growth is limited the more efficient use of existing resources becomes a means to achieve public policy goals. Increasingly efficiency of facilities, of automobiles, of efficient transit mode, and resource allocation has become more attractive as a method to address these issues. Public policy can be used in more systematic manner based on sustainability and efficiency. Neighborhood density is efficiency, rapid rail is efficiency, and implementing efficiency technologies can produce efficiency savings and improve economic structural imbalances.

The restoration of neighborhoods can be a method to repopulate and restore density to urban and suburban locales. The density of residential and business interests is associated with cost savings due to efficiencies. Communities deciding on support of efficiencies attract both residential and economic development. The sprawl feature of urban areas is now being recognized as being an unsustainable cost.

This study proposes the use of the KCRRR as a plan to address both sustainability and efficiency in the area of transport. This transport variable is important in that it represents a major component of both personal and business expenditure. In addition transport is a major component of public expenditure. The implementation of KCRRR can be one facet of public planning by all levels of public policy development and thereby address the structural imbalances of public finance.

"Low transportation costs accrue as savings or disposable income for those households that achieve them."

The CID mission is to address economic development based on a plan which is premised on ecology, education and health care within its target area. This mission may also extend to the economic development leadership in the region. The definition of economic development is to invest in future development predicated on promoting a set of public policy criteria. These criteria include sustainability and efficiency measures that are an integral part of the CID master planning methodology as illustrated in the following tables and scenarios.

Scenario K:
Scenario K, in Table 18 below, shows the zip code 64134 efficiency savings income density per acre at selected participation percentages when the CNT working family affordability index for transportation is reduced from 33% to 22% and household densities are increased through implementation of a more compact mixed use TOD activity center development model in the CID in response to the KCRRR transit option.

TABLE 18: Scenario K - Zip Code 64134 Per Acre Efficiency Savings Income Density Estimate at Selected Participation Percentages and Household Densities at CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

HPA Variables	4.5%*	10%*	25%*	50%*	100%*
1.20	$233	$517	$1,292	$2,584	$5,169
10.00	$1,940	$4,310	$10,775	$21,550	$43,100
18.00	$3,491	$7,758	$19,395	$38,790	$77,580
40.00	$7,758	$17,240	$43,100	$86,200	$172,400
95.00	$18,425	$40,945	$102,362	$204,725	$409,450

Note: Zip Code 64134 = 7,680 acres, 9,212 households, household density per acre of 1.20, household income of $39,176, individual household efficiency savings of $4,310 @ CNT working family affordability index of 45% and efficiency savings income density of $5,169 at the existing 1.20 HPA density.
*Selected participation percentages.

The per acre efficiency savings in CID zip code 64134 is $5,169. This amount is calculated by multiplying the household annual efficiency savings of $4,310 by the existing zip code 64134 household density of 1.20 per acre. The density levels selected beyond the existing zip code 64134 household density range from 10 per acre to 95 per acre. The 10 per acre household density was chosen at random. The 18 and 40 per acre household densities are taken from the Trails KC Development Plan included in Section 2. The 95 per acre household density was selected in response to a news release by CoStar Group Real Estate Information dated December 15, 2010 quoted in part as follows:

"USAA Real Estate Co. has acquired a 1.73 acre site currently occupied by a former Hollywood Video store…for development of a transit-orientated multifamily and retail project in the Courthouse District of Arlington, Virginia…The mixed-use project…will include 191 apartment units totaling 149,915 square feet plus 17,317 square feet of street level retail. The area is near the Court House Metro Stop along the Rosslyn Ballston Metro Corridor."

For purposes of this study the household density of 95 per acre was determined by dividing 191 units by 2 acres. The literature suggests that the density represented by the Arlington project is indicative of the more compact development happening in response to the availability of the passenger rail transit option. Therefore, the 95 per acre household density included in this study represents a relevant comparative density factor.

At a density of 10 households per acre the annual efficiency savings income density is $43,100 per acre in zip code 64134 compared to $5,169 at the existing 1.20 density. A density of 95 households per acre produces an annual efficiency savings income density of $409,450 per acre or $404,281 more than the existing per acre density efficiency savings of $5,169. Scenario K suggests that the additional efficiency savings that are possible in the South Line study area by reducing the CNT working family affordability index from 56% to 45% can be further leveraged

into higher income densities per acre through the implementation of more compact mixed-use TOD activity center development model in the CID. This process is also known as "intensifying" which is building more densely within currently built areas. Higher income densities and the location efficiencies are associated with increased retail and other economic benefits and efficiencies that contribute to long term sustainability and competitiveness of communities.

"Transit supportive planning and development rethinks land use and development patterns so they will be effectively served by a balanced transportation system where walking, bicycling and riding transit work in harmony with the private automobile. Transit supportive development enables citizens to choose an alternative to the automobile for at least one or more of their daily trips between home, work, shopping, school or services."

Scenario L:
Scenario L, in Table 19 below, is the same as Scenario K, except the transportation component of the working family affordability index has been reduced from 22% to the CNT recommended goal of 15%.

TABLE 19: Scenario L - Zip Code 64134 Per Acre Efficiency Savings Income Density Estimate at Selected Participation Percentages and Household Densities at CNT Working Family Affordability Index of 38% (H @ 23% + T @ 15%)

HPA Variables	4.5%*	10%*	25%*	50%*	100%*
1.20	$381	$846	$2,115	$4,230	$8,459
10.00	$3,173	$7,052	$17,630	$35,260	$70,520
18.00	$5,712	$12,694	$31,734	$63,468	$126,936
40.00	$12,694	$28,208	$70,520	$141,040	$282,080
95.00	$30,147	$66,994	$167,485	$334,970	$669,940

Note: Zip Code 64134 = 7,680 acres, 9,212 households, household density per acre of 1.20, household income of $39,176, individual household efficiency savings of $7,052 @ CNT working family affordability index of 38% and efficiency savings income density of $8,459 at the existing 1.20 HPA density.
*Selected participation percentages.

Scenario L above shows the additional efficiency savings income density per acre in zip code 64134 beyond matching the CNT recommended affordability index of 45% by reducing the transportation factor from 22% to the CNT recommended 15% rate. Lower transportation costs combined with the KCRRR transit option and implementation of a more compact mixed-use TOD activity center development model produces a significant increase in the efficiency savings income density per acre.

"Sustainable communities offer "efficient housing" (or housing close to work), provide multi-modal transit, and create economic growth that benefits all residents."

Scenario M:
Scenario M, in Table 20 below, shows potential per acre efficiency savings income density produced by new residential TOD development in the CID at selected household densities and acreage developed based on the CNT working family affordability index of 45% for zip code 64134. Scenario M assumes efficiency savings at 100% participation as a result of new compact residential TOD activity center development in the CID.

TABLE 20: Scenario M – CID Zip Code 64134 Efficiency Savings Income Density Estimate at Selected Household Densities and Acreage Developed at CNT Working Family Affordability Index of 45% (H @ 23% + T @ 22%)

HPA Variables	50 Acres	100 Acres	150 Acres	200 Acres
1.20	$258,450	$516,900	$775,350	$1,033,800
10.00	$2,155,000	$4,310,000	$6,465,000	$8,620,000
18.00	$3,879,000	$7,758,000	$11,637,000	$15,516,000
40.00	$8,620,000	$17,240,000	$25,860,000	$34,480,000
95.00	$20,472,500	$40,945,000	$61,416,000	$81,890,000

Note: Zip Code 64134 = 7,680 acres, 9,212 households, household density per acre of 1.20, household income of $39,176, individual household efficiency savings of $4,310 @ CNT working family affordability index of 45% and efficiency savings income density of $5,169 at the existing 1.20 HPA density.

The individual household efficiency savings for zip code 64134 is $4,310 multiplied by the existing household density of 1.20 equals $5,169 per acre efficiency savings income density. Scenario M in Table 20 above shows the potential efficiency savings income density resulting from new residential development within the CID at the existing zip code 64134 household density of 1.20 and selected higher densities and acreages developed. For example, 100 acres of new residential development within the CID zip code 64134 at 18 dwelling units per acre and a CNT affordability index of 45% results in an efficiency savings of $7,758,000. By comparison 100 acres of new residential development at the existing zip code 64l34 density of 1.20 HPA produces an efficiency savings income density per acre of $516,900 which is $7,241,000 or 93% less than the 18 HPA income density amount. Scenario M suggests that the efficiency savings achieved by lowering the transportation cost for working family households with the KCRRR transit option combined with a new and more compact mixed-use TOD activity center development model in the CID will result in a significantly higher CID efficiency savings income density at the existing 64134 zip code household income of $39,176.

The literature suggests that income density is associated with land use efficiency. For example, 200 acres of new residential development within the CID represents less than 1% of the 75,256 acres comprising the study area and which has 66,479 households. A household density of 10 per acre in the 200 CID acres is 2,000 households or 3% of the total study area households. A household density of 18 per acre represents 3,600 housing units which is 5.4% of the total

number of households in the study area. Household density of 40 per acres is 8,000 households or 12% of the study area households and household density of 95 per acres results in l9,000 households or 28.5% of the study area households. This data suggests that the KCRRR transit option will contribute to higher income density and land use efficiency within the CID, the study area and the region served by the rapid rail system.

"Transit oriented hubs not only dampened urban sprawl, but reduced the need to build expensive new infrastructure in distant suburbs."

Scenario N:
Scenario N, in Table 21 below, shows the additional per acre efficiency savings income density produced by lowering the CNT working family transportation index from 22% to the recommended rate of 15% at selected households per acre densities and acreage developed. Scenario N assumes efficiency savings at 100% participation as a result of new compact residential TOD activity center development in the CID combined with the KCRRR transit option.

TABLE 21: Scenario N - CID Zip Code 64134 Efficiency Savings Income Density Estimate at Selected Household Densities and Acreage Developed at CNT Working Family Affordability Index of 38% (H @ 23% + T @ 15%)

HPA Variables	50 Acres	100 Acres	150 Acres	200 Acres
1.20	$422,500	$845,000	$1,267,500	$1,690,000
10.00	$3,526,000	$7,052,000	$10,578,000	$14,104,000
18.00	$6,346,800	$12,693,600	$19,040,400	$25,387,200
40.00	$14,104,000	$28,208,000	$42,312,000	$56,416,000
95.00	$33,497,000	$66,994,000	$100,491,000	$133,988,000

Note: Zip Code 64134 = 7,680 acres, 9,212 households, household density of 1.20, household income of $39,176, individual household efficiency savings of $7,052 @ CNT Working Family Affordability Index of 38% and efficiency savings income density of $8,459 at the existing 1.20 HPA density.

The additional per acre efficiency savings income density produced by lowering the CNT working family transportation index from 22% to the recommended rate of 15% and selected increases in the household density is illustrated in Scenario N above. The additional efficiency savings income density is the result of the KCRRR transit option and the implementation of a more compact mixed-use TOD activity center development model within the CID. This data suggests that CID master planning methodology should incorporate mixed-use TOD activity center land use and development principles in response to the KCRRR South Line. The efficiency savings reflect the burden reduction on individuals and households.

"Auto ownership drops as residential density increases. Data from all 337 metropolitan areas in the H + T index show that doubling residential density from ten dwellings per acre to 20 per acre reduces average car ownership by slightly more than a quarter vehicle per household. Car ownership represents the single biggest cost in a household transportation budget."

Scenario O:
Scenario O, in Table 22 below, compares the income density at selected per acre household densities for study area zip codes 64134 and 64130.

TABLE 22: Scenario O - Zip Codes 64134 and 64130 Income Density at Selected Per Acre Household Density

Zip Code	Household Income	HPA*	10 HPA	18 HPA	40 HPA	95 HPA
64134	$39,176	$47,011	$392,000	$705,000	$l,567,000	$3,722,000
64130	$24,266	$56,054	$242,660	$437,000	$970,640	$2,305,000

*Zip code 64134 household density is 1.20 and zip code 64130 household density is 2.31.

Scenario O, in Table 22 above, shows zip code 64134 household income of $39,176 at selected household densities per acre and the resulting income density effect. The existing household income density is $47,011. Increasing the household density to 18 per acre as recommended in the Trails KC development plan in Section 2 results in a per acre income density of $705,168. By comparison study area zip code 64130 household income is $24,266 which is $14,910 or 38% less than zip code 64134 household income of $39,176. Applying zip code 64130 household income to its existing household density (2.31 HPA) produces an income density of $56,054 which is $9,043 or 19% more than the current income density in zip code 64134 having the higher household income.

This data suggests that more compact development in lower household income areas may produce a higher income density than areas with a higher household income and lower household densities. This data further suggests that the CID master planning should incorporate strategies for organically populating new and more compact TOD residential development within the CID in response to the KCRRR transit option with the existing study area household incomes. The CID master planning should consider additional sustainability and efficiency factors as, for example, the potential benefits from single pour concrete housing units, consistent with accepted international practices and standards, resulting in a 100 to 200 year life expectancy, lower construction costs (the literature suggests that concrete housing can be built for one-half to two-thirds the cost of conventional housing thus expanding workforce and affordable housing opportunities), decreased maintenance and insurance costs, reduced energy requirements, and a construction cycle that can be as short as 30 days.

The income concentration and wealth building effect resulting from the more compact mixed-use TOD activity center development model combined with the efficiency savings resulting from the KCRRR transit option and other efficiency options indicates the CID master plan can position the CID to be more sustainable, land, location and housing efficient, more competitive at a local, regional national and international level and a greater attraction to business, investment and people.

"Encourage policy makers to practitioners to promote economic well-being by building homes and schools near stores and work, and by providing transportation and housing choices…these strategies for development enhance access to goods and services and promote more efficient travel options."

SUMMARY

The socio-economic study of the factors relating to the Kansas City Regional Rapid Rail South Line presents a context and a data analysis to consider the factors related to both benefit and cost issues. The underlying assumption of the CNT studies in the area of transportation is sustainability of communities. The economic development argument is that the sustainability of communities is related to ecology, education and health care. The ecology of communities is defined as infrastructure and particularly of transportation and housing. Of course access to retail, to education and to recreation and leisure is a part of this variable. This study considers the issue of efficiency in terms of housing, income density and transportation. The data would suggest that the suburban ring of the metropolitan area is particularly affected by the housing and transportation potential benefits.

The urban issues associated with economic structural imbalance are partly related to access to employment and to financial resources. These factors are what enable an urban community to first provide economic security for its citizens. The urban planning requires planning for all districts of the city in terms of housing, employment and security. Transit within the city is focused on moving persons from the suburbs to the city. The sprawl of the city limits the ability of the city to provide access to all segments. Urban areas need to provide for business and residential sustainable development.

The effect of a rapid rail would appreciably affect these cost estimates. Kansas City is a metropolitan area which is characterized by suburban sprawl which is also characteristic of inefficient and increasingly unsustainable attributes. These attributes can be concluded to suggest that Kansas City is an ideal region for the implementation of the rapid rail system.

"In early 2009, Gateway was the first project to be designated as eligible for the new Urban Transit Hub Tax Credit Program. Under the program, credits are issued against income taxes that would be owed by businesses locating in newly built offices within a mile of a transit center, the credits can be used to attract tenants, or else be sold as commodities."

The Kansas City Regional Rapid Rail plan considerations as proposed will have an affect on the metropolitan area to move toward more efficient and more sustainable communities through the

investments in transit. The inefficiencies and unsustainable factors are considerations which present the investment option in rapid rail. First the investment can be recouped in a reasonable period, secondly return on investment can be achieved in less than ten years, and thirdly the return can be greater in Kansas City by directly addressing the sprawl dimension.

The economic development planning of the CID does directly address the concerns for providing the review of planning issues which offer opportunities for sustainable business and economic development. The KCRRR plan does interface this mission in that the study suggests the CID planning for economic development can be implemented through the KCRRR.

Rapid Rail, as envisioned in the KCRRR, does offer an opportunity to consider the Kansas City strengths in resources, potential resource development, and opportunities to refocus economic development activities and practices in a more resilient and sustainable model.

"Because homes, streets, schools, parks, shopping areas and transit lines, the building blocks of a community, are so enduring, the best chance that cities and regions have to lower housing and transportation costs is by changing where and how they grow. Transportation savings associated with location efficiency can add up quickly for families able to avoid extraordinary expenses."

RECOMMENDATIONS

The recommendations from this study would be as follows:

1. The data presented here suggests that a Scenario for ridership can be developed for all KCRRR routes which would emphasize the context characteristics of each route, the efficiency savings for each route and the sustainable issues for each route.

2. The study here also suggests the further development of housing and transportation affordability indexing for the Kansas City Area by zip codes. These index figures can be estimated based on the CNT index database.

3. The use of operational data analysis from other similar passenger rail systems can also be employed as a proxy for KCRRR ridership factors including ridership forecast.

4. The study also suggests a more intense review of related variables such as car ownership rates, housing costs and infrastructure access especially in the target zip codes.

5. The survey aspect of the ridership assessment might also provide some insights into transit choice as well as opinions on planning for rapid rail.

6. Transit studies which consider the issues of land use, real estate valuations and planning for land use and planning opportunities related to regional rail. Economic benefits for employers, access to educational institutions health care, and retail, and for residential enhancements are all facets which would benefit from these detailed studies. The literature

contains studies in areas of rapid rail which have associated these land use issues with wealth effects of rapid rail based on increased valuations.

7. The CID in its mission of economic development could advance positions on transportation oriented issues related to the public planning for regional development. The CID could be provided a regional forum for policy on economic development in a time of austerity to plan for the times of prosperity.

8. The criteria for public policy can include several issues; density of land use, efficient transport, and public finance procurement. In the area of public policy procurement a discrepancy model can be employed to consider the effect of each dollar of investment on regional economic development. First in areas of public finance the contracts related to development can include a procurement requirement to employ local residents by per cent, secondly the incentives in procurement to require light manufacture within the procurement impact area, local manufacture provides efficiency of local resources, thirdly the procurement requirements for efficient technologies. These examples of procurement issues can be addressed through public policy designed to measure results through employment efficiency, through increased tax revenues, and through improved procurement techniques. For each criterion an expected result can be expressed, this expected result can be assessed against the experience of the procurement to assess if the expected result has been achieved.

9. The CID has an organic process in that the CID is a locally focused economic development entity. This organic process enables a view of development from the ground level. The needs of the area have been documented to include more transit choice. The KCRRR specifically address this need. The sustainability of the area is also dependent upon consideration of activities which might emerge from the KCRRR such as the transit station and activity center, construction, land development, sustainable economic development and targeted business recruitment and local employment opportunities. These have been presented in this study; the ridership assessment suggests the primary transit needs are employment, education, recreation, retail, and health care.

10. The leadership of the CID can be enhanced through the participation in local and regional processes to consider the KCRRR implementation.

"It is important for the CID to have a master plan that will provide a framework for leveraging the identified and emerging development opportunities into maximum benefits for the area, surrounding neighborhoods and the city as a whole. A master plan is important for the following reasons: (A) Identify specific business opportunities for investors, (B) Recommend "best practices" for ensuring the economic and social health of the community and make assignment for their implementation in the CID, (C) Establish standards to ensure a seamless east-to-west transition across the district, and (D) Document existing resources available to businesses and developers."

SUPPLEMENTAL OPINION

"The study indicates that per capita transportation costs within the study area are high and over recognized norms. This is a drain upon the purchasing power and welfare of these persons/households. The development of a rapid rail transit system as proposed in the study will reduce these costs leaving more funds for persons/households to spend in the area in terms of goods and services; and in terms of jobs. One must also remember that an increase in expenditures in the study area due to the jobs created, the extra demand created, and labor utilized are local – an aim of the study."

Robert Brazelton, Ph.D.
University of Missouri Kansas City
5100 Rockhill Road
Kansas City Missouri 64112

January 15th 2011

Re: Study of Social and Economic Factors-Kansas City Regional Rapid Rail South Line

To Whom It May Concern

From: Robert Brazelton, Ph.D.

Dr. Elizabeth Noble and Louis E. Schumacher, Jr., J.D., have studied a plan for rapid rail in the area mainly east of Highway 71 (Bruce Watkins) and connecting with other lines at the Union Station with its rail facilities and connections.

This is an important study because the area does not at present have adequate mass transit facilities, except limited bus lines. The rail line will accomplish several things. It will (1) increase speedy transit into and out of the area; and that (2) development of the area will begin to take place; (3) employment in the area will rise due to transit to outside areas and the increased development within the area ;(4) the rail system will be more ecologically friendly than other forms of transit; and (5) maintenance costs of roads will decrease as rail transit improves and expands. These are all positive for the long-run development of the area and, thus, beneficial for the study area and the City/County as a whole.
The South Side Line discussed herein runs roughly from Belton to an area known as Bannister--the latter area badly in need of re-development which a rapid rail system would encourage according to both public and private officials. The ridership potential in the area is significant; and it will grow in significance as more people begin to rely upon it--a fact seen in many cities. The populations of the area under study between 2000-09 had fallen in two areas and risen in one area. This was discussed in Table I B. Table 2 was more interested in households in the areas. We see the same or similar patterns; but I am confused concerning "Households", "above 18" and the % in the last column. Has this been an increase or decrease and since when. It makes no difference as to the validity and need for the South Side Line vis a vis my comments concerning it as discussed in my positive comments concerning Table I B--the need for mass transit for LOCALIZED jobs, development, re-development, access to jobs outside the area, etc.

Table 3 shows the population growth of the area studied from 2000-09---an increase of 11% to 1.3 million. Estimates of the current (2010) census seem to estimate that the broader area than the study area will show a population in the entire area of 2.0 million. Table 4 shows the geographic extent of the study area and, thus, its importance to the entire areas. Table 7 indicated the average household's incomes for the study area. This indicates the (1) need for rapid transit for jobs outside the areas; (2) job creation within the areas; (3) development and re-development within the area.

The third point raises a problem that constantly comes up. Does rapid rail spur development or follow it? In major cities, I have noticed that high rises follow significant rapid rail lines. Some argue that that the high rise was already there. Others argue that the rapid line brought them, or more. However, some of the "high rises" may have already been there, the presence of the new, cheaper transit for the area brought further development. It is that both arguments are or may be correct. Whether it spurs development or re-development is really beside the point. Changes occur!

The rest of the study raises the problem in terms of the economic effects upon the community in terms of costs. It indicated that the proposal may decrease highway building/repair costs. But, more importantly, it indicates that it will also decrease the Transportation Costs to the persons/households in the area. The study indicates that per capita Transport Costs within the area are high and over recognized norms. This is a drain upon the purchasing power and welfare of these persons/households. The development of a rapid rail transit system as proposed in the study will reduce these costs leaving more funds for persons /households to spend in the area in terms of goods and services; and in terms of jobs. One must also remember that an increase in expenditures in that area due to the jobs created, the extra demand created, and labor utilized are local--an aim of the study. Thus, both the private sector (jobs, demand. income) will have a multiplier effect upon both the study area and the whole community, especially if the materials and labor utilized are local--an important aim of the study. Thus, both the private sector (jobs, demand, and income) will be benefited; but so will the public sector (taxes). Table 8 discusses the savings to the households in the area--savings that are likely to be deposited in local banks and/or spent in the local area and beyond, plus the multiplier effects. This is verified by all the scenarios discussed in the study.

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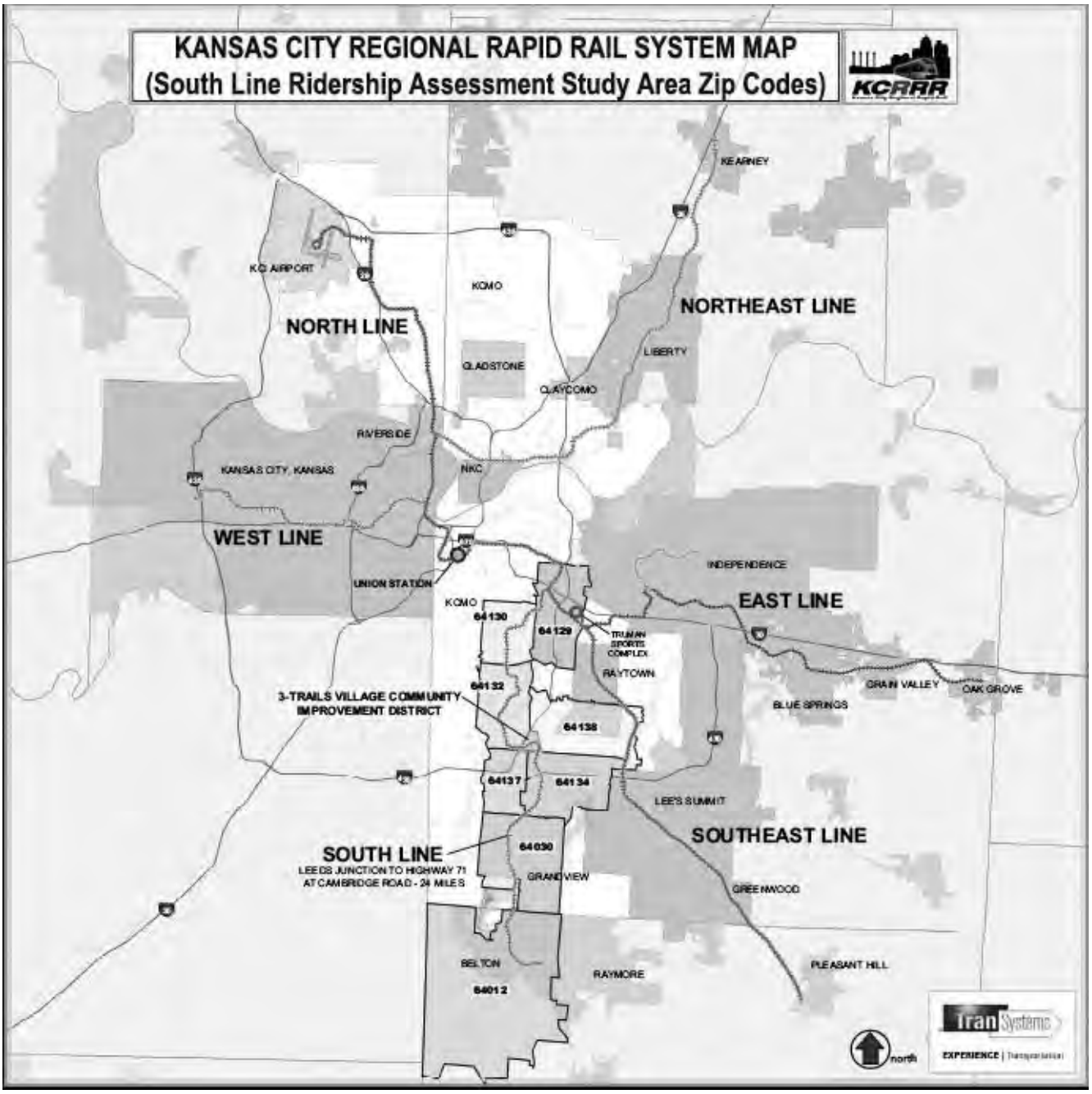
"As America struggles to regain its economic footing, we would do well to remember that dense cities are also far more productive than suburbs and offer better-paying jobs. Globalization and new technologies seem to have only made urban proximity more valuable – young workers gain many of the skills they need in a competitive global marketplace by watching the people around them. Those tall buildings enable the human interactions that are the heart of economic innovation and of progress itself."

INDEX OF TABLES

"Residents of "drive til you qualify" zones are most sensitive to jumps in gas prices because of the distances they must drive."

SECTION 2: Maps & Plans

"The data presented in this study suggests that a Scenario for ridership can be developed for all KCRRR lines which would emphasize the context characteristics of each line, the efficiency savings for each line and the sustainability issues for each line."



SECTION 3: 2010 Kansas City Regional Rapid Rail Market Demand Assessment for the South Line

"Transit-Oriented Development is about creating sustainable communities where people of all ages and incomes have transportation and housing choices, increasing location efficiency where people can walk, bike and take transit. In addition, transit oriented development boosts transit ridership and reduces automobile congestion, providing value for both the public and private sectors, while creating a sense of community and place."

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February 17, 2011

Mr. Lou Austin, Chairman
3-Trails Village Community Improvement District
5912 E. Bannister Road
Kansas City, MO 64134

Re: Market Demand Assessment for Kansas City Regional Rapid Rail – South Line

Dear Mr. Austin:

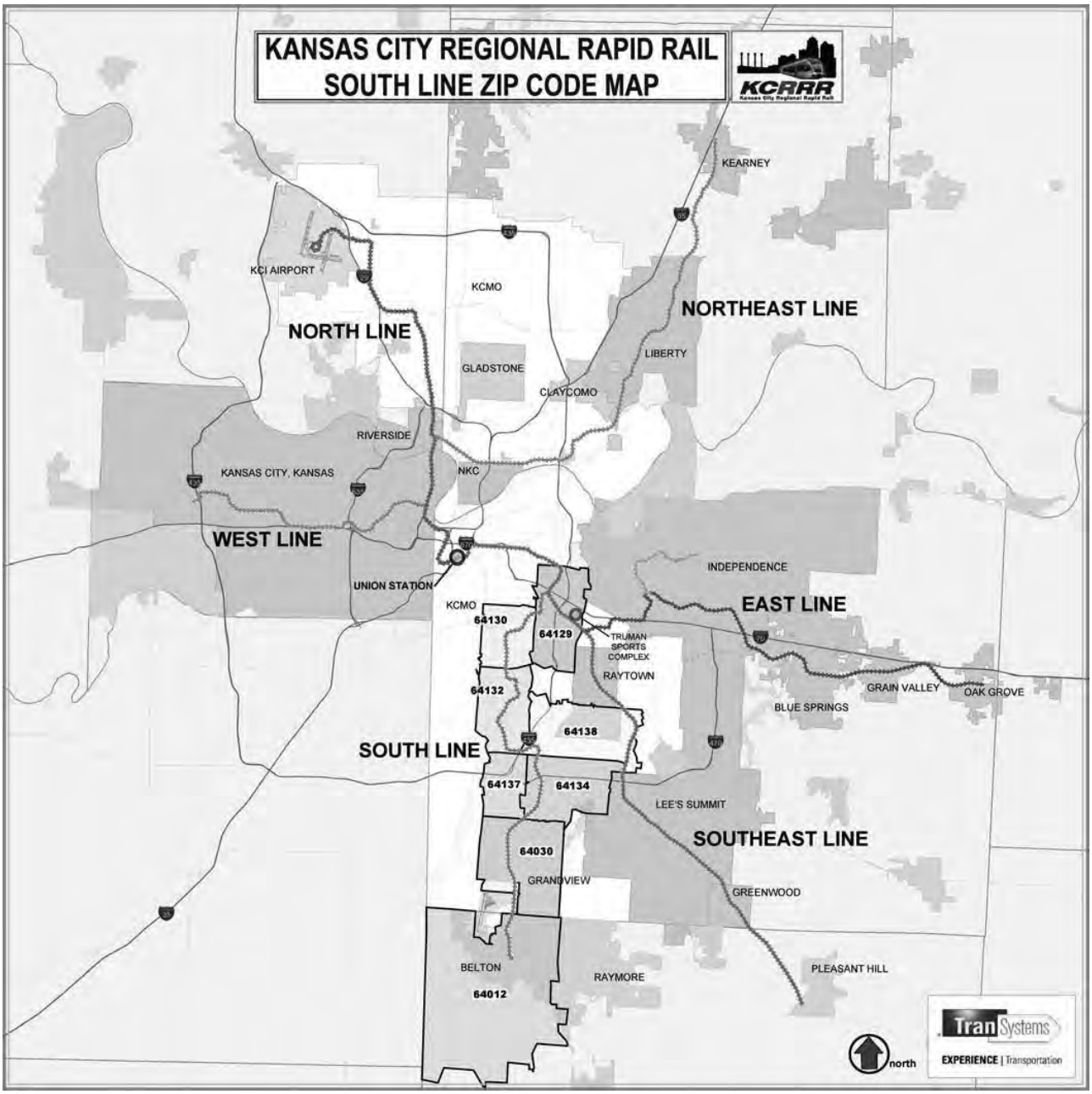
As you know, Mike Sanders and I have been promoting a potential new rail transit system for the Kansas City metropolitan area, Kansas City Regional Rapid Rail (KCRRR). By exploiting Kansas City's under-utilized rail assets and supplementing a minimal amount of additional property to connect rail lines, KCRRR can create a comprehensive rail transit system that would serve Jackson, Clay, Platte, and Cass Counties in Missouri and Wyandotte County in Kansas, at a relatively low cost.

Under the KCRRR plan, six lines would emanate from Union Station as the central terminal for a total of at least 134 miles and would have more than 50 stations. The South Line of the system is expected to run from Leeds Junction, just northwest of the I-70/I-435 interchange in Kansas City, Missouri, approximately seven miles east of Union Station, south about 19 miles through the southern section of Kansas City's urban core and Grandview, to Centerpoint's industrial development. The South Line of the proposed system, as planned, would serve the 3-Trails Village Community Improvement District. The line could and is expected to extend beyond the Jackson County line into Cass County, to Belton (for a total distance of about 22 miles) and beyond. The South Line comprises about 15% of the proposed KCRRR system. There are several options for the South Line, but the most probable ones entail its being built on a combination of The Kansas City Southern Railway (KCS) right-of-way, public property and private property, either donated or purchased. (In order for KCRRR to share right-of-way with KCS' freight traffic, a second track will need to be built.) See a map of the proposed KCRRR system on the next page.

KCRRR is expected to generate a number of favorable outcomes, including:

- Improved livability in the KC metro area by providing another transportation choice for both commutes and non-work trips;
- Economic development, not only by attracting new businesses to the area, but also by freeing up residents' disposable income by reducing their transportation costs; and
- Increased sustainability due to diversion of travelers from their cars to transit, reducing oil consumption, generation of greenhouse gases and roadway infrastructure's maintenance and expansion requirements.

Anticipated ridership is a huge factor in KCRRR's perceived viability and in its ability to win federal and local funding, as it is for any new transit system. Furthermore, actual ridership will greatly affect KCRRR's ability to achieve the expected outcomes listed above. The purpose of the Market Demand Assessment conducted by ETC and TranSystems for 3-Trails Village Community Improvement District was to gauge the residents' support for KCRRR and to provide a projected ridership for the South Line of the system. A survey of residents near the proposed South Line, further described in ETC's report, provided the source data for the assessment and included questions about residents' current travel habits, their attitude about the proposed KCRRR system and the likelihood that they would use the system, were it available, for various travel needs.



For purposes of the survey, the South Line was assumed to end at a station in or near downtown Belton, Missouri. The population to which ETC administered the survey was limited to those zip codes along the South line, as illustrated above. Based on the survey results for this population and as further described in the report, ETC estimated potential weekday commuter ridership for the South Line to be 7,395 per day. Understand that this figure is not a total ridership estimate because it excludes the following types of trips:

- For purposes other than commuting to work or school, such as shopping, entertainment, connection to flights at KC International Airport, etc. Trips for other than commuting comprise a wide range of percentages of total trips on other transit systems around the country. In a quick internet search, we found a low estimate of just 7% of total riders on Chicago's Metra and

a high of 78% on Portland, Oregon's light rail system with a trip purpose of something other than work. You've mentioned a range of 25-35% for non-commute transit trips based on your discussions with officials from Denver, Dallas and Portland's transit authorities, which may be a realistic range for KCRRR to experience. Applying this range to ETC's estimate would result in an anticipated daily ridership from 9,860 to 11,376.

- By residents of other areas of the KC metro area that would travel on the KCRRR South Line to work, school or other destinations.
- By residents of zip codes not immediately adjacent to the rail line who would use KCRRR as a park-and-ride or access KCRRR via a bus connection.
- By residents from an expanded market. It is highly possible that KCRRR's South Line could extend beyond downtown Belton on existing railroad right-of-way, expanding the market to zip code 64083 in Raymore, Missouri, with a population of close to 13,000.
- By visitors to the metro area.

On the other hand, ETC's estimate was based on residents' opinions though they did not know all conditions of KCRRR, such as location of all stations and proximity to their destinations, speed and frequency of the trains, etc. Some respondents who were highly interested in KCRRR could ultimately find that the system would not conveniently serve their transportation needs. ETC did temper their estimate to allow for this eventuality, though it is debatable whether the extent of their discount was adequate, too high or too low.

Unfortunately, we will not definitively know the ultimate ridership of the KCRRR South Line until the system is in operation. The Market Demand Assessment, however, gives every indication that KCRRR has significant public support among residents along the South Line. As a proponent of KCRRR, I read these results as a "green light" for further pursuing the KCRRR plan. Please let me know if you have any questions or would like to discuss this report or our next steps for progressing the KCRRR plan.

Sincerely,

James L. Terry
Senior Vice President / Principal

2010 Kansas City Regional Rapid Rail Market Demand Assessment for the South Line

KCRRR
Kansas City Regional Rapid Rail

Prepared for:

3-Trails Village

Community Improvement District

Located on the Santa Fe, Oregon, and California National Historic Trails
3-Trails Village
Community Improvement District

Prepared by:

Tran Systems

etc Institute

November 2010

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Executive Summary

2010 Kansas City Regional Rapid Rail Market Demand Assessment for the South Line

Executive Summary

Overview and Methodology

During August 2010, ETC Institute administered the Kansas City Regional Rapid Rail (KCRRR) Market Demand Assessment for the South Line. The purpose of the survey was to gather input from residents living in the Kansas City metropolitan area from Leeds Junction to the City of Belton to better understand the need for rapid rail in the area and to determine the potential ridership of the South Line of the KCRRR system.

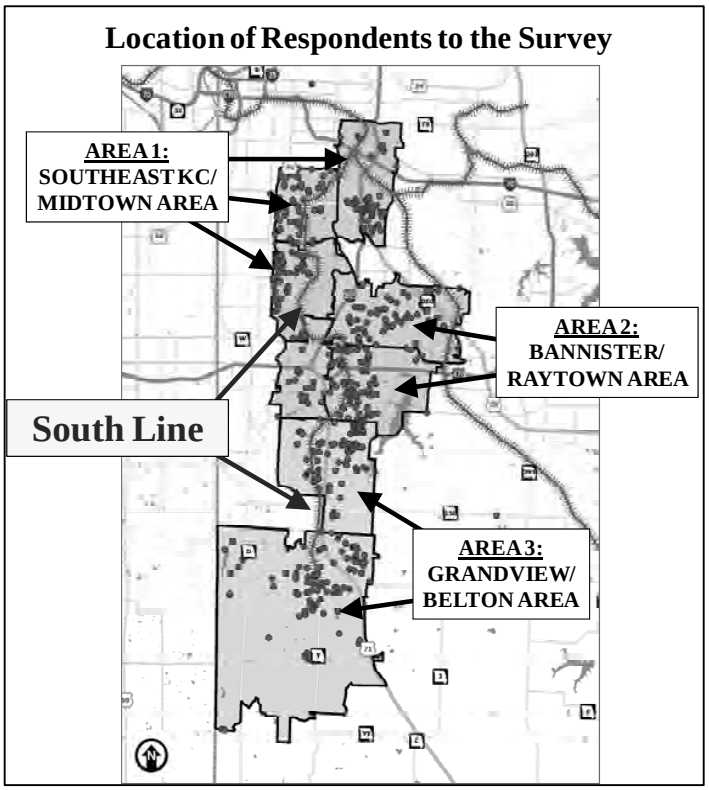
The survey design and sampling plan were similar to other assessments that have been conducted by ETC Institute to assess the demand for transit services in the Kansas City area, including:

- Greater Kansas City Transit Demand Assessment (Mid America Regional Council, 1998)
- Kansas City Regional Commuter Rail Assessment Survey (Mid America Regional Council, 2002)
- Johnson County I-35 Transit Alternatives Assessment (Johnson County Transit, 2007)

Among transit surveys conducted by ETC Institute in the Kansas City metropolitan area, the Market Demand Assessment for the KCRRR South Line is the most comprehensive survey of its kind to date.

The study area for the project was divided into three sub-areas by zip code. Area 1, the Southeast KC/Midtown area, included the zip codes 64129, 64130 and 64132. Area 2, the Bannister/Raytown area, included the zip codes 64137, 64134 and 64138. Area 3, the Grandview/Belton area, included the zip codes 64012 and 64030. According to the most recent U.S. Census estimate, the total population of adult residents, ages 18 years and older, living in the entire study area was 115,575 with 36,427 adults living in area 1, 42,844 adults living in area 2 and 36,304 adults living in area 3.

A total of 1,500 surveys, 500 surveys in each sub-area, were mailed to a randomly selected sample of residents in the study area. Each survey packet contained a brochure that explained KCRRR. The sample for the survey was stratified to ensure there were at least 140 surveys completed in each sub-area. The goals for the project were met with 163 surveys completed in area 1, 160 surveys completed in area 2 and 180 surveys completed in area 3, for a total of 503 completed surveys.



Given the nature of the survey, the research team had expected a higher percentage of transit users to respond to the survey than the actual percentage of transit users in general population. Based on the results of previous surveys conducted by ETC Institute, the research team estimated the percentage of transit users in the study area to be between 2% and 3% of the actual population. Since 6.8% of the respondents to the survey indicated they were transit users, the research team weighted the responses from transit users by a factor of 0.37, which randomly eliminated 22 surveys from transit users from the sample. This process was done to minimize the potential bias that could have been introduced to the analysis by having an excessive number of transit users respond to the survey. The final sample that was used for the analysis contained in this reported contains responses from 481 respondents of whom 2.5% were transit users.

The final sample included a total of 141 surveys from area 1, 160 surveys from area 2 and 180 surveys from area 3. The overall results of the sample of 481 completed surveys have a precision of at least +/- 4.4% at the 95% level of confidence.

This section of the report contains a brief summary of the major findings from the survey as well as the rail ridership projections for the KCRRR South Line. The full survey report includes the following:

- charts depicting the overall results of the survey
- GIS maps that display the location of the home addresses of survey respondents and the location of destinations residents visit most frequently

- tabular data for all questions on the survey
- a copy of the brochure and survey instrument.

Major Findings

Residents in the Study Area Agreed that Kansas City Regional Rapid Rail would Benefit Kansas City Residents. Sixty-nine percent (69%) of the residents surveyed either "strongly agreed" or "agreed" that KCRRR would benefit residents of the Kansas City metropolitan area; 16% were neutral and 15% disagreed.

Most Residents in the Study Area Routinely Travel to Cities That KCRRR Will Serve. Eighty-one percent (81%) of the residents surveyed that location of the place they visit most frequently was located in a City that would be served by the KCRRR system; 11% indicated their most frequent destination was located in a City outside of the proposed KCRRR service area and 8% did not provide a response.

Maximum Amount Residents Would Pay to Use KCRRR. One percent (1%) of the residents surveyed indicated the maximum they would pay for a one-way trip on KCRRR to the place they visit most frequently was less than $1.00, 11% would pay between $1.00 and $1.50, 49% would pay more than $1.50 but up to $2.50, 11% would pay more than $2.50 but up to $3.50, 9% would pay more than $3.50 and 19% would pay nothing.

Likelihood of Using KCRRR to Get To/From Various Kansas City Metro Destinations. The KC metro destinations that residents indicated they would likely use KCRRR most often to get to, based upon the combined percentage of residents who would likely use rapid rail "*almost daily*," "*a few times a week*" and "*a few times per month*," were: downtown Kansas City (45%), Sprint Center/Power & Light District (27%), Crown Center/Union Station (24%) and Swope Park/KC Zoo/Starlight Theater (22%). The location that residents indicated they would use KCRRR least often to get to, based upon the percentage of residents who indicated they would use it "*seldom/never*," was the Cerner Campus/North Kansas City hospital (82%).

Typical Travel Behavior of Residents in the Study Area. Residents were asked several questions about travel to/from the place they visit most frequently. The results from these questions are provided below:

- The types of places that residents visited most frequently were: work (50%), retail locations (21%), church or a place of worship (7%) and school (5%); 17% mentioned some other type of location.

- Some of the KC metro cities residents visited most frequently were Kansas City, Missouri (55%), Belton (9%), Lee's Summit (6%), Overland Park (5%) and Grandview (5%).

- Fifty-one percent (51%) of the residents surveyed indicated it takes 15 minutes or less to get from home to the place they visit most frequently; 33% indicated it takes between 16 and 30 minutes, 10% indicated it takes more than 30 minutes and 6% did not provide a response.

- Eighty-four percent (84%) of residents indicated they drive to get from home to the place they visit most often; 8% of residents carpool, 3% take the bus, 2% walk, and 3% use some other mode.

- Most (96%) of residents have at least one vehicle in their household and 4% do not.

Rail Ridership Projections for the South Line

The tables on the following pages show the potential KCRRR ridership projections for the South Line.

Based on the results of the survey, ETC Institute estimates the potential weekday (Monday-Friday) commuter ridership for the South Line to be 7,395 trips per day. This ridership estimate does not include trips that would be completed for other purposes, such as shopping trips, entertainment, visits to the airport, and other non-work and non-school related trips. This estimate also does not include trips that would be completed on weekends or trips that would be completed by visitors since the survey was only administered to residents of the area.

The "work/school" trips shown on the first line of each table represent the projected number of weekday commuter trips for the South Line. Since respondents to the survey were able to select more than one type of trip, the estimated number of trips to specific destinations may include work/school trips. For this reason, the estimated number of "work/school" trips is shown as a baseline estimate. The total ridership estimate for the South Line will be higher than the baseline estimate for "work/school" trips because many of the trips that are projected for specific destinations will not involve work- or school-related trips.

The process for estimating potential ridership involved the following steps:

Step 1: Determining "Eligible" Riders. The first step in the process for estimating potential ridership began by estimating the number of residents in the study area who might really consider using KCRRR based on the following criteria:

- Their most frequent destination was in an area that would be served by KCRRR
- Their most frequent destination was at least 20 minutes from their home
- They would be willing to pay at least $2 for a one-way trip on KCRRR to their most frequent destination

While other residents in the study area may have expressed interest in using rail service, these criteria were applied to the overall sample of respondents to limit the ridership estimates to people who completed trips that could be practically served by rail service. Of the 481 respondents that were included in the analysis, 15.6% of the respondents were classified as being "eligible" for inclusion in the analysis because they met these three criteria.

Step 2: Estimating Ridership. The second step to estimating daily ridership involved applying the frequency that the "eligible" respondents from Step 1 reported that they would use rail service to various destinations. Since many conditions could affect a person's decision to use rail service, the research team made the following assumptions to develop estimates for ridership:

- Among those who reported that they would use rail service "almost daily", the research team assumed that 50% of these respondents would never use the service
- Among those who reported that they would use rail service "a few times per week", the research team assumed that 50% of these respondents would never use the service and that the remaining 50% would only use the service one day per week
- Among those who reported that they would use rail service "a few times per month", the research team assumed that 50% of these respondents would never use the service and that the remaining 50% would only use the service one day per month
- Among those who reported they would use the service less than a few times per month, the research team assumed these respondents would never use the service

Step 3: Number of Trips Per Day. The final step involved estimated that number of trips per day that would be completed. Since most riders would make a round-trip, it was estimated that each person would complete an average of two trips per day.

Tables displaying the potential ridership for the study area and for each sub-area are provided on the following pages.

ALL AREAS

DESTINATION	# Surveyed	# ELIGIBLE (Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	% ELIGIBLE (who Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	Among Those ELIGIBLE: % who will use Rail ALMOST DAILY	Among Those ELIGIBLE: % who will use Rail WEEKLY	Among Those ELIGIBLE: % who will use Rail MONTHLY	Estimated % Daily Users = % Eligible * (50% of Almost Daily % + 10% of Weekly % + 2.5% of Monthly %) See NOTE 1	Adult Population	Estimated Number of Daily Riders (assumers 2 trips per day)
Weekday Commuter Ridership Estimates									
Work/School (Note 1)	481	75	15.6%	37.00%	19.20%	9.60%	3.2%	115575	7395
Daily Ridership Estimates to Specific Destinations									
KCI Airport	481	75	15.6%	5.40%	1.40%	10.80%	0.5%	115575	1096
Downtown Kansas City	481	75	15.6%	17.30%	17.30%	30.70%	1.7%	115575	4037
Truman Sports Complex	481	75	15.6%	2.70%	2.70%	16.20%	0.3%	115575	675
Village West/KC Speedway/Legends	481	75	15.6%	5.40%	8.10%	17.60%	0.6%	115575	1384
Sprint Center/Power & Light District	481	75	15.6%	6.70%	5.30%	22.70%	0.7%	115575	1534
Zona Rosa	481	75	15.6%	2.70%	2.70%	14.70%	0.3%	115575	699
Independence Events Center	481	75	15.6%	1.30%	5.30%	24.00%	0.3%	115575	667
Worlds of Fun/Oceans of Fun	481	75	15.6%	2.70%	1.30%	9.30%	0.3%	115575	604
Swope Park/KC Zoo/Starlight Theatre	481	75	15.6%	4.00%	6.70%	12.00%	0.5%	115575	1100
Crown Center/Union Station	481	75	15.6%	6.80%	8.10%	9.50%	0.7%	115575	1536
Crossroads District	481	75	15.6%	2.70%	0.00%	13.30%	0.3%	115575	590
18th and Vine/Negro League Museum	481	75	15.6%	4.00%	1.30%	12.00%	0.4%	115575	897
Cerner Campus/North Kansas City Hospital	481	75	15.6%	2.70%	2.70%	5.50%	0.3%	115575	663

AREA 1: SOUTHEAST KC/MIDTOWN AREA (Zip Codes: 64129,64130,64132)

DESTINATION	# Surveyed in Zone	# ELIGIBLE (Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	% ELIGIBLE (who Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	Among Those ELIGIBLE: % who will use Rail ALMOST DAILY	Among Those ELIGIBLE: % who will use Rail WEEKLY	Among Those ELIGIBLE: % who will use Rail MONTHLY	Estimated % Daily Users = % Eligible * (50% of Almost Daily % + 10% of Weekly % + 2.5% of Monthly %) See NOTE 1	Adult Population	Estimated Number of Daily Riders (assumers 2 trips per day)
Weekday Commuter Ridership Estimates									
Work/School (Note 1)	141	12	8.5%	9.10%	27.30%	18.20%	0.7%	36427	480
Daily Ridership Estimates to Specific Destinations									
KCI Airport	141	12	8.5%	8.30%	0.00%	8.30%	0.4%	36427	270
Downtown Kansas City	141	12	8.5%	33.30%	8.30%	25.00%	1.5%	36427	1123
Truman Sports Complex	141	12	8.5%	0.00%	9.10%	18.20%	0.1%	36427	85
Village West/KC Speedway/Legends	141	12	8.5%	16.70%	0.00%	8.30%	0.7%	36427	531
Sprint Center/Power & Light District	141	12	8.5%	8.30%	16.70%	33.30%	0.6%	36427	412
Zona Rosa	141	12	8.5%	8.30%	8.30%	16.70%	0.5%	36427	335
Independence Events Center	141	12	8.5%	8.30%	8.30%	25.00%	0.5%	36427	348
Worlds of Fun/Oceans of Fun	141	12	8.5%	8.30%	0.00%	16.70%	0.4%	36427	283
Swope Park/KC Zoo/Starlight Theatre	141	12	8.5%	8.30%	25.00%	8.30%	0.6%	36427	425
Crown Center/Union Station	141	12	8.5%	0.00%	18.20%	9.10%	0.2%	36427	127
Crossroads District	141	12	8.5%	0.00%	0.00%	16.70%	0.0%	36427	26
18th and Vine/Negro League Museum	141	12	8.5%	8.30%	0.00%	25.00%	0.4%	36427	296
Cerner Campus/North Kansas City Hospital	141	12	8.5%	10.00%	0.00%	10.00%	0.4%	36427	326

NOTE 1: The "Estimated % of Daily Users" is based on the following assumptions:
(1) only 50% of those who indicated that they would use the service "almost daily" would actually use it daily (M-F, 5 days per week)
(2) only 50% of those who would indicated they would use it a "few times per week" would actually use it once per week (or once every five days
(3) only 50% of those who would indicated they would use it a "few times per monthly" would actually use it once per month (or once every 20 days

AREA 2: BANNISTER/RAYTOWN AREA (Zip Codes: 64137, 64134, 64138)

DESTINATION	# Surveyed in Zone	# ELIGIBLE (Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	% ELIGIBLE (who Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	Among Those ELIGIBLE: % who will use Rail ALMOST DAILY	Among Those ELIGIBLE: % who will use Rail WEEKLY	Among Those ELIGIBLE: % who will use Rail MONTHLY	Estimated % Daily Users = % Eligible * (50% of Almost Daily % + 10% of Weekly % + 2.5% of Monthly %) See NOTE 1	Adult Population	Estimated Number of Daily Riders (assumers 2 trips per day)
Weekday Commuter Ridership Estimates									
Work/School (Note 1)	160	27	16.9%	59.30%	11.10%	7.40%	5.2%	42844	4475
Daily Ridership Estimates to Specific Destinations									
KCI Airport	160	27	16.9%	3.80%	3.80%	19.20%	0.5%	42844	399
Downtown Kansas City	160	27	16.9%	18.50%	14.80%	37.00%	2.0%	42844	1685
Truman Sports Complex	160	27	16.9%	0.00%	3.70%	33.30%	0.2%	42844	174
Village West/KC Speedway/Legends	160	27	16.9%	0.00%	14.80%	22.20%	0.3%	42844	294
Sprint Center/Power & Light District	160	27	16.9%	3.70%	3.70%	29.60%	0.5%	42844	428
Zona Rosa	160	27	16.9%	0.00%	3.70%	18.50%	0.1%	42844	120
Independence Events Center	160	27	16.9%	0.00%	3.70%	37.00%	0.2%	42844	187
Worlds of Fun/Oceans of Fun	160	27	16.9%	0.00%	3.70%	14.80%	0.1%	42844	107
Swope Park/KC Zoo/Starlight Theatre	160	27	16.9%	3.70%	7.40%	18.50%	0.5%	42844	441
Crown Center/Union Station	160	27	16.9%	7.40%	11.10%	11.10%	0.9%	42844	736
Crossroads District	160	27	16.9%	3.70%	0.00%	14.80%	0.4%	42844	321
18th and Vine/Negro League Museum	160	27	16.9%	3.70%	3.70%	18.50%	0.5%	42844	388
Cerner Campus/North Kansas City Hospital	160	27	16.9%	0.00%	3.70%	11.10%	0.1%	42844	94

AREA 3: GRANDVIEW/BELTON AREA (Zip Codes: 64012, 64030)

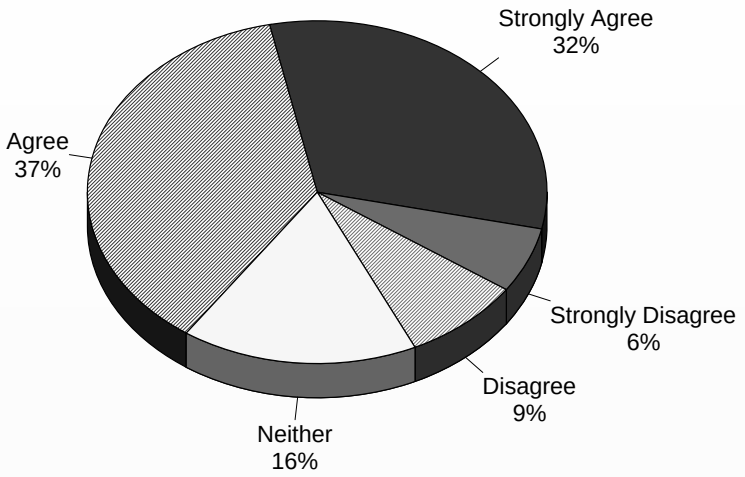
DESTINATION	# Surveyed in Zone	# ELIGIBLE (Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	% ELIGIBLE (who Traveled to Key Cities AND Pay at least $2 AND Travel at least 20 minutes)	Among Those ELIGIBLE: % who will use Rail ALMOST DAILY	Among Those ELIGIBLE: % who will use Rail WEEKLY	Among Those ELIGIBLE: % who will use Rail MONTHLY	Estimated % Daily Users = % Eligible * (50% of Almost Daily % + 10% of Weekly % + 2.5% of Monthly %) See NOTE 1	Adult Population	Estimated Number of Daily Riders (assumers 2 trips per day)
Weekday Commuter Ridership Estimates									
Work/School (Note 1)	180	36	20.0%	28.60%	22.90%	8.60%	3.4%	36304	2440
Daily Ridership Estimates to Specific Destinations									
KCI Airport	180	36	20.0%	5.60%	0.00%	5.60%	0.6%	36304	427
Downtown Kansas City	180	36	20.0%	11.10%	22.20%	27.80%	1.7%	36304	1229
Truman Sports Complex	180	36	20.0%	5.60%	0.00%	2.80%	0.6%	36304	417
Village West/KC Speedway/Legends	180	36	20.0%	5.70%	5.70%	17.10%	0.8%	36304	559
Sprint Center/Power & Light District	180	36	20.0%	8.30%	2.80%	13.90%	1.0%	36304	694
Zona Rosa	180	36	20.0%	2.80%	0.00%	11.10%	0.3%	36304	244
Independence Events Center	180	36	20.0%	0.00%	5.60%	13.90%	0.2%	36304	132
Worlds of Fun/Oceans of Fun	180	36	20.0%	2.80%	0.00%	2.80%	0.3%	36304	213
Swope Park/KC Zoo/Starlight Theatre	180	36	20.0%	2.80%	0.00%	8.30%	0.3%	36304	233
Crown Center/Union Station	180	36	20.0%	8.30%	2.80%	8.30%	0.9%	36304	673
Crossroads District	180	36	20.0%	2.80%	0.00%	11.10%	0.3%	36304	244
18th and Vine/Negro League Museum	180	36	20.0%	2.80%	0.00%	2.80%	0.3%	36304	213
Cerner Campus/North Kansas City Hospital	180	36	20.0%	2.80%	2.80%	0.00%	0.3%	36304	244

NOTE 1: The "Estimated % of Daily Users" is based on the following assumptions:
(1) only 50% of those who indicated that they would use the service "almost daily" would actually use it daily (M-F, 5 days per week)
(2) only 50% of those who would indicated they would use it a "few times per week" would actually use it once per week (or once every five days
(3) only 50% of those who would indicated they would use it a "few times per monthly" would actually use it once per month (or once every 20 days

Section 2:
Charts and Graphs

Agreement that the KC Regional Rapid Rail System Will Benefit the Residents of the Kansas City Metro Area

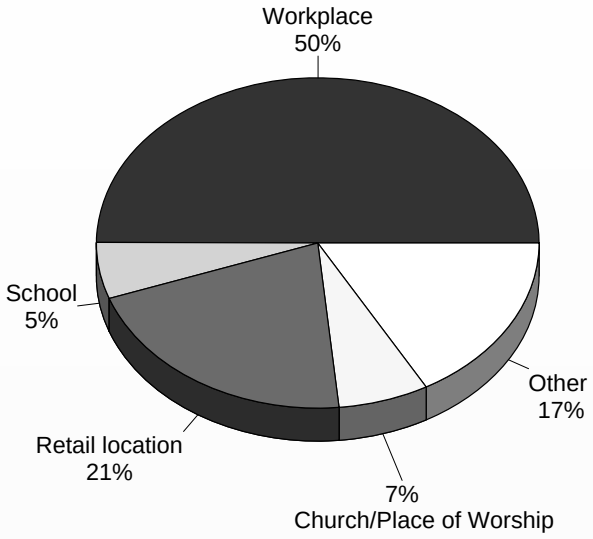
by percentage of the residents surveyed



Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

Types of Places That Residents Visit Most Frequently

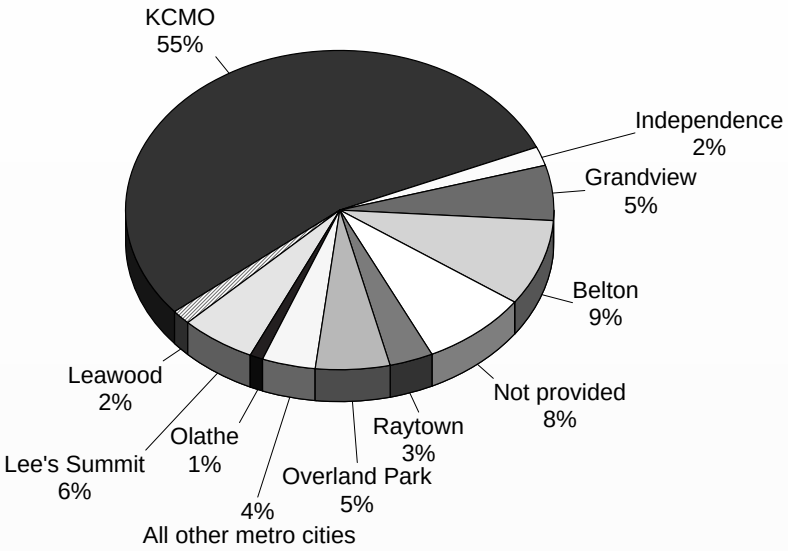
by percentage of the residents surveyed



Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

Location of the Place Residents Visit Most Frequently

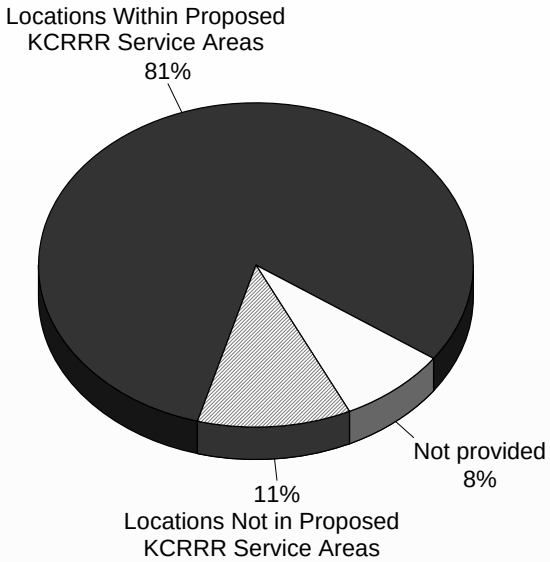
by percentage of the residents surveyed



Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

Location of the Place Residents Visit Most Frequently

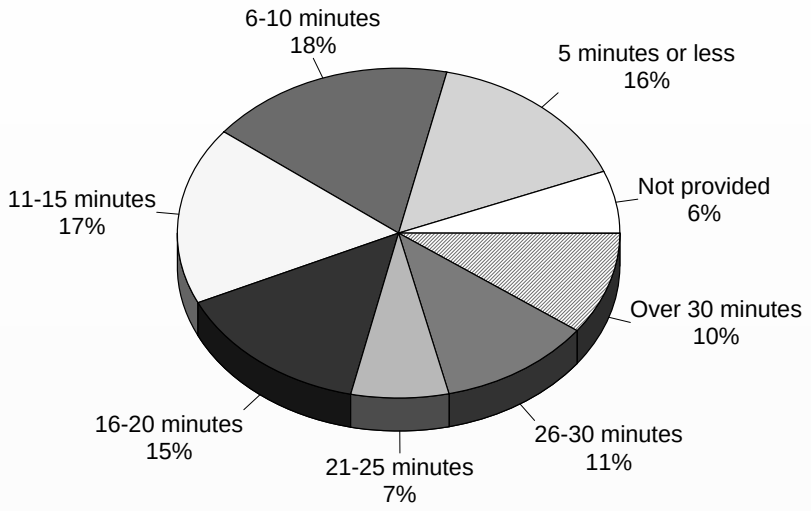
by percentage of the residents surveyed



Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

Number of Minutes It Typically Takes Residents To Get From Home to the Place They Visit Most Frequently

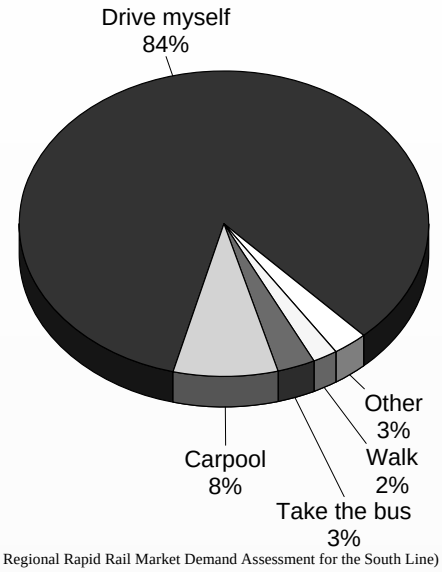
by percentage of the residents surveyed



Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

How Residents Typically Get From Home to the Place They Visit Most Frequently

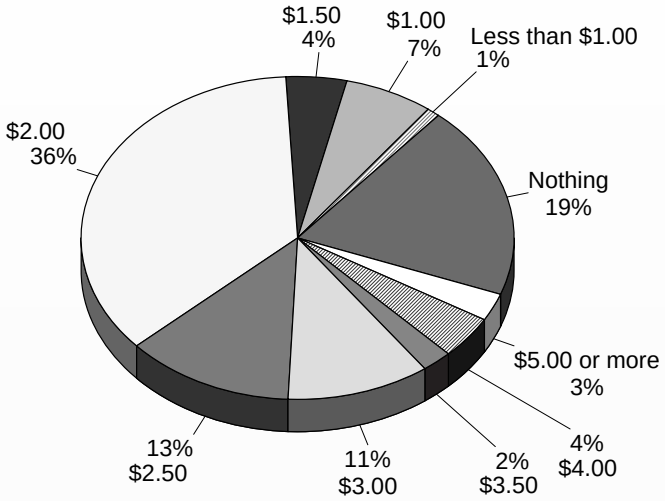
by percentage of the residents surveyed



Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

Maximum Amount Residents Would Pay For a One-Way Trip on Regional Rapid Rail From Home to the Place They Visit Most Frequently

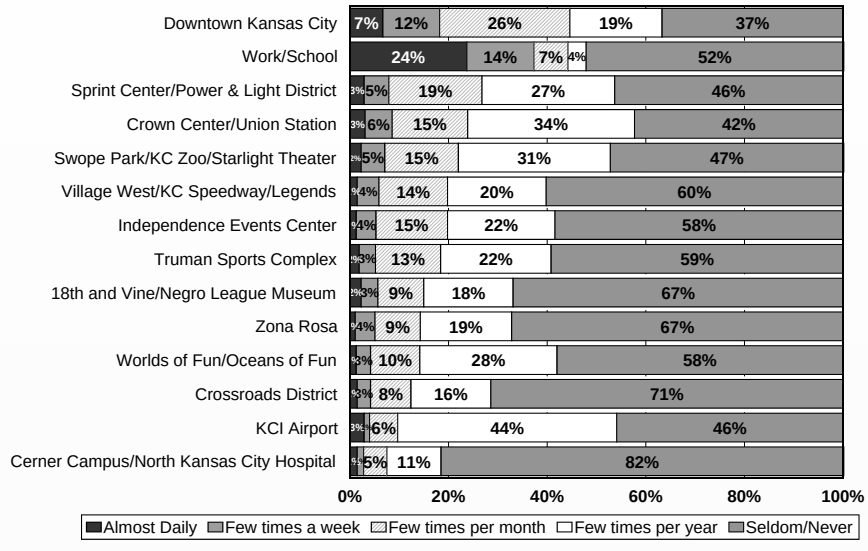
by percentage of the residents surveyed



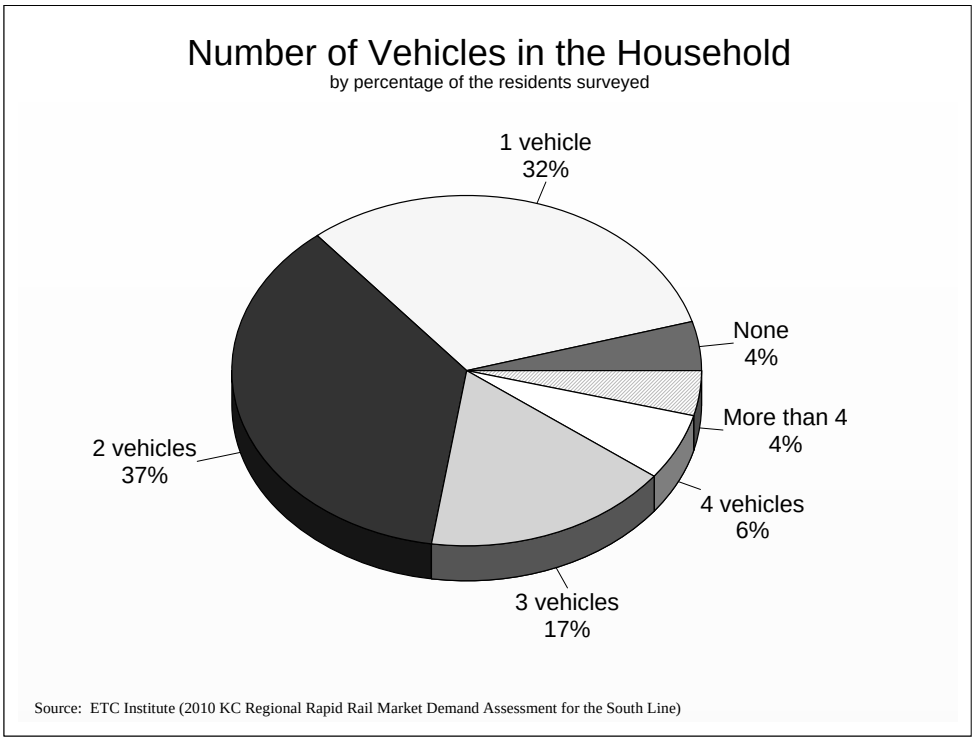
Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)

How Likely Residents Would Be to Use KC Regional Rapid Rail to Get To/From Various Destinations

by percentage of the residents surveyed

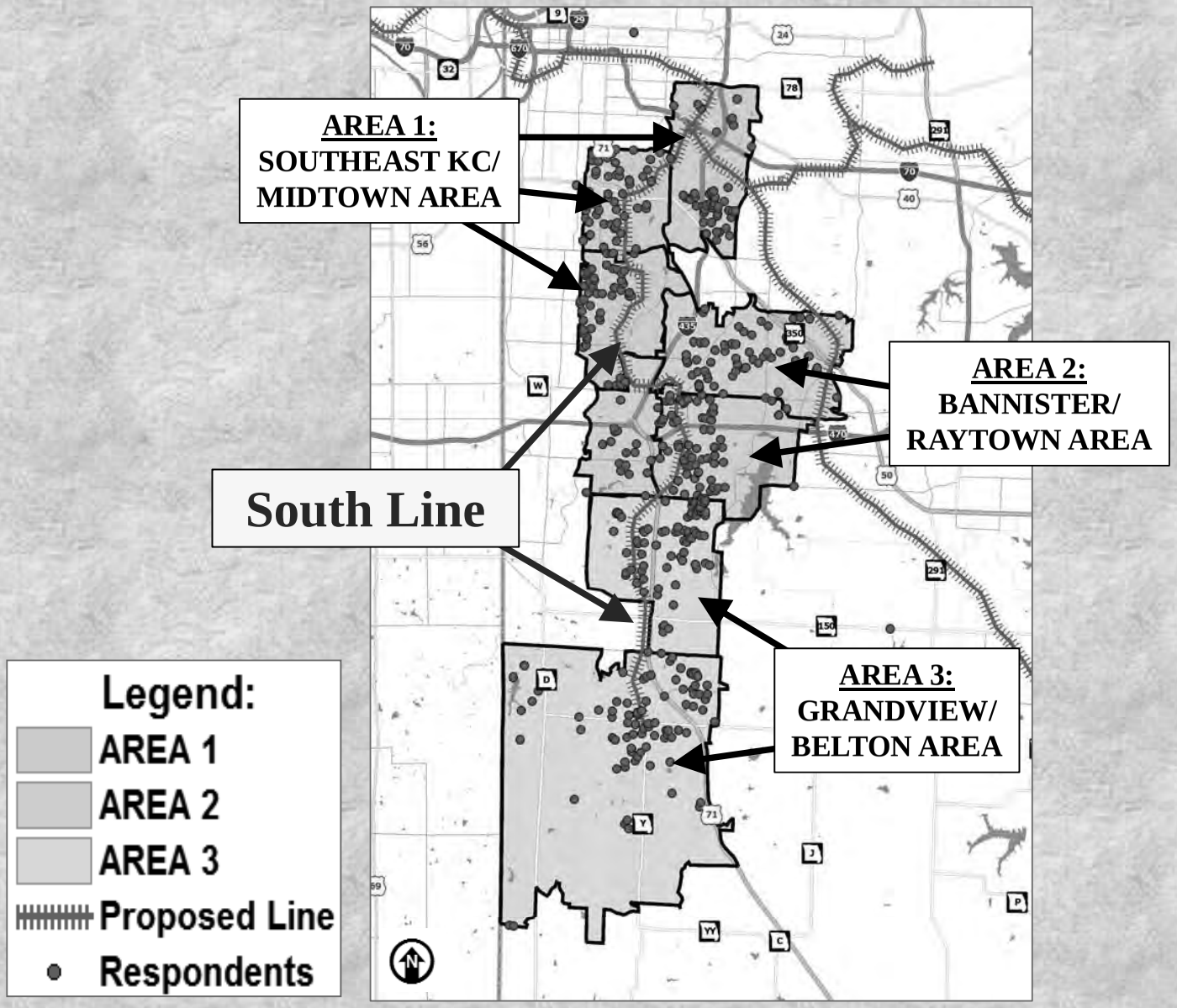


Source: ETC Institute (2010 KC Regional Rapid Rail Market Demand Assessment for the South Line)



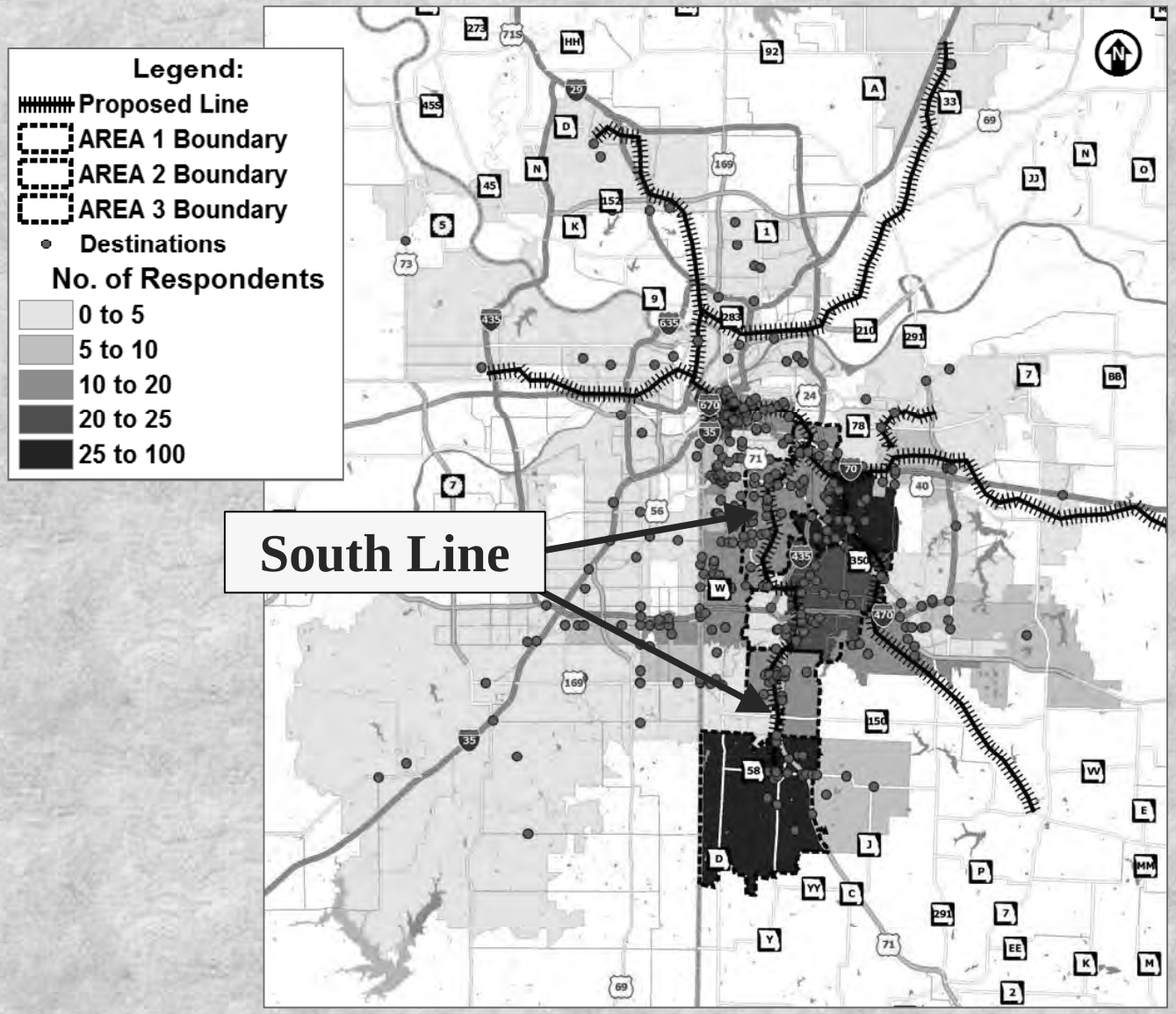
Section 3:
GIS Maps

Location of Respondents to the Survey by Home Address



2010 KC Rapid Rail Market Demand Assessment for the South Line

Q3 Location of Most Frequent Destinations Visited by Respondents



2010 KC Rapid Rail Market Demand Assessment for the South Line

Section 4:
Tabular Data

Q1 Based on the information provided in the enclosed brochure, please rate your level of agreement with the following statement: "In my opinion, the Kansas City Regional Rapid Rail system will benefit the residents of the Kansas City metropolitan area."

Level of agreement	Number	Percent
Strongly Agree	151	31.4 %
Agree	178	37.0 %
Neither	79	16.4 %
Disagree	41	8.5 %
Strongly Disagree	30	6.2 %
Don't Know	2	0.4 %
Total	481	100.0 %

Q2 Excluding your home, which of the following places do you visit most frequently?

Place you visit most often	Number	Percent
Workplace	242	50.3 %
School	26	5.4 %
Store/Retail Location	102	21.2 %
Church/Place of Worship	32	6.6 %
Other	79	16.4 %
Total	481	100.0 %

Q2 Other responses

Most frequently visited	Number	Percent
AIRPORT	2	2.5 %
CASINO	2	2.5 %
COMMUNITY CENTER	1	1.3 %
CROWN CENTER	1	1.3 %
DISABLED	1	1.3 %
DOWNTOWN	3	3.8 %
FAMILY/FRIEND'S HOME	7	8.9 %
GYM	1	1.3 %
LEE'S SUMMIT	1	1.3 %
LEGENDS	1	1.3 %
LIBRARY	2	2.5 %
MEDICAL/DOCTOR	10	12.7 %
OUT OF AREA	1	1.3 %
PERSONAL BUSINESS (BANK/POST OFFICE)	8	10.1 %
PLAZA	3	3.8 %
POWER & LIGHT DISTRICT	2	2.5 %
RESTAURANT	5	6.3 %
RETIRED	2	2.5 %
STUDIO	1	1.3 %
TOWN CENTER	1	1.3 %
TRAVEL ALL OVER FOR WORK	3	3.8 %
VOLUNTEER LOCATON	1	1.3 %
VOTING PLACE	1	1.3 %
WESTPORT	1	1.3 %
NOT PROVIDED	18	22.8 %
Total	79	100.0 %

Q3 In which City is the place you visit most frequently located?

City	Number	Percent
BELTON	42	8.7 %
BLUE RIDGE	1	0.2 %
BLUE SPRINGS	1	0.2 %
GARDNER	2	0.4 %
GLADSTONE	1	0.2 %
GRANDVIEW	26	5.4 %
INDEPENDENCE	9	1.9 %
KCKS	1	0.2 %
KCMO	262	54.5 %
LEAWOOD	7	1.5 %
LEE'S SUMMIT	28	5.8 %
LENEXA	1	0.2 %
MARTIN CITY	1	0.2 %
MERRIAM	2	0.4 %
NORTH KANSAS CITY	1	0.2 %
OLATHE	5	1.0 %
OMAHA	1	0.2 %
OVERLAND PARK	26	5.4 %
RAYMORE	5	1.0 %
RAYTOWN	16	3.3 %
SEDALIA	1	0.2 %
SHAWNEE	2	0.4 %
NOT PROVIDED	40	8.3 %
Total	481	100.0 %

Q3 In which City is the place you visit most frequently located? (Cities grouped by those that would be served by the proposed system versus those that would not.)

Destinations Grouped by Cities in Proposed Area	Number	Percent
Cities in Proposed KCRRR Service Areas	387	80.5 %
Cities Not in Proposed KCRRR Service Areas	54	11.2 %
Not provided	40	8.3 %
Total	481	100.0 %

Q3 In which Zip Code is the place you visit most frequently located?

Zip Code	Number	Percent
NOT PROVIDED	136	28.3 %
64012	31	6.4 %
64030	21	4.4 %
64052	2	0.4 %
64055	2	0.4 %
64057	2	0.4 %
64063	2	0.4 %
64081	6	1.2 %
64083	2	0.4 %
64086	5	1.0 %
64101	6	1.2 %
64105	9	1.9 %
64106	14	2.9 %
64108	13	2.7 %
64109	5	1.0 %
64110	5	1.0 %
64111	6	1.2 %
64112	5	1.0 %
64113	4	0.8 %
64114	5	1.0 %
64116	3	0.6 %
64118	2	0.4 %
64120	2	0.4 %
64125	2	0.4 %
64127	9	1.9 %
64129	16	3.3 %
64130	15	3.1 %
64131	7	1.5 %
64132	17	3.5 %
64133	21	4.4 %
64134	17	3.5 %
64137	3	0.6 %
64138	15	3.1 %
64139	2	0.4 %
64153	2	0.4 %

Q3 In which Zip Code is the place you visit most frequently located?

Zip Code	Number	Percent
64999	2	0.4 %
66061	2	0.4 %
66062	3	0.6 %
66204	2	0.4 %
66209	2	0.4 %
66210	6	1.2 %
66211	3	0.6 %
66212	3	0.6 %
66214	3	0.6 %
66219	2	0.4 %
66223	3	0.6 %
Other	36	7.5 %
Total	481	100.0 %

Q4 On a typical day, how long does it take you to get from your home to the place you listed in Question #2 (one-way)?

Minutes	Number	Percent
Not provided	30	6.2 %
5 or less minutes	75	15.6 %
6-10 minutes	86	17.9 %
11-15 minutes	83	17.3 %
16-20 minutes	71	14.8 %
21-25 minutes	33	6.9 %
26-30 minutes	55	11.4 %
Over 30 minutes	48	10.0 %
Total	481	100.0 %

Q5 How do you usually get from your home to the place you selected in Question #2?

Transportation method	Number	Percent
Drive myself	406	84.4 %
Carpool	38	7.9 %
Take the bus	12	2.5 %
Walk	8	1.7 %
Bike	1	0.2 %
Work at Home	3	0.6 %
Other	13	2.7 %
Total	481	100.0 %

Q6 What is the maximum amount that you would pay for a one-way trip on Regional Rapid Rail from your home to the place you selected in Question #2 (including transfers)?

Maximum amount	Number	Percent
Less than $1.00	5	1.0 %
$1.00	32	6.7 %
$1.50	21	4.4 %
$2.00	172	35.8 %
$2.50	61	12.7 %
$3.00	51	10.6 %
$3.50	11	2.3 %
$4.00	21	4.4 %
5.00	8	1.7 %
More than $5.00	6	1.2 %
Nothing	93	19.3 %
Total	481	100.0 %

Q7 If it were available, how often would you likely use Kansas City Regional Rapid Rail to get to/from the following destinations?

(N=481)

	Seldom/ Never	Few times per year	Few times per month	Few times per week	Almost daily
Work/School	52.2%	3.7%	6.9%	13.6%	23.7%
KCI Airport	45.9%	44.4%	5.7%	1.1%	2.9%
Downtown Kansas City	36.7%	18.7%	26.4%	11.5%	6.7%
Truman Sports Complex	59.2%	22.4%	13.2%	3.3%	1.9%
Village West/KC Speedway/Legends	60.1%	20.0%	13.9%	4.4%	1.5%
Sprint Center/Power & Light District	46.2%	26.9%	18.9%	5.0%	2.9%
Zona Rosa	67.2%	18.5%	9.2%	4.0%	1.1%
Independence Events Center	58.4%	21.8%	14.5%	4.0%	1.3%
Worlds of Fun/Oceans of Fun	58.0%	27.8%	10.0%	2.9%	1.3%
Swope Park/KC Zoo/Starlight Theatre	47.3%	30.8%	14.9%	4.8%	2.3%
Crown Center/Union Station	42.3%	33.8%	15.3%	5.5%	3.1%
Crossroads District	71.4%	16.2%	8.2%	2.7%	1.5%
18th and Vine/Negro League Museum	66.9%	18.1%	9.3%	3.4%	2.3%
Cerner Campus/North Kansas City Hospital	81.6%	11.0%	4.7%	1.3%	1.5%
Other	91.5%	0.8%	2.8%	2.6%	2.3%

Q8 How many vehicles do the people in your household own or lease, combined?

Vehicles	Number	Percent
None	21	4.4 %
1 vehicle	151	31.4 %
2 vehicles	176	36.6 %
3 vehicles	82	17.0 %
4 vehicles	30	6.2 %
More than 4 vehicles	19	4.0 %
Not provided	2	0.4 %
Total	481	100.0 %

Q9 Home Zip Code

Zip Code	Number	Percent
Not provided	12	2.5 %
64012	90	18.7 %
64030	86	17.9 %
64129	47	9.8 %
64130	45	9.4 %
64132	44	9.1 %
64134	72	15.0 %
64137	18	3.7 %
64138	67	13.9 %
Total	481	100.0 %

Section 5:
Brochure and Survey Instrument

The Kansas City Regional Rapid Rail System Will Serve These Communities

Oak Grove, MO
Grain Valley, MO
Blue Springs, MO
Independence, MO
Raytown, MO
Lee's Summit, MO
Greenwood, MO
Pleasant Hill, MO
Grandview, MO
Belton, MO
Kansas City, MO
North Kansas City, MO
Riverside, MO
Liberty, MO
Kearney, MO
Kansas City, KS

Where will KCRRR go?
KCRRR will move people to a number of areas including:

- KCI Airport
- Employment Areas, such as KCMO Central Business District; Fairfax; Cerner Campus; Hallmark World Headquarters; CenterPoint Intermodal Center and Industrial Park
- Event Centers, such as Truman Sports Complex; Sprint Center/Power and Light District; Worlds and Oceans of Fun; Kansas Speedway/Wizards Stadium/ Schlitterbahn; Independence Events Center
- Shopping Areas, such as Zona Rosa; Legends/Village West; Crown Center

The Basics About Kansas City Regional Rapid Rail

This 143-mile system will connect six highly populated corridors in five counties:

Jackson County, MO
Platte County, MO
Clay County, MO
Cass County, MO
Wyandotte County, KS

KCRRR will utilize existing, out-of-service, or abandoned rail property for 71% of the system. All lines will meet at historic Union Station. KCRRR will be a "plug and play" system meaning each county can choose when they want to be included. Currently, around 6,000 community leaders (including political leaders serving us in Washington) have viewed a presentation describing KCRRR and its functionality. The response from these community leaders has been positive.

Why is KCRRR Right for KC?

- Capitalizes on existing, underutilized rail assets, saving billions of dollars in construction costs.
- Connects many areas in this semi-urban metro, providing affordable and accessible transportation to jobs, shopping, and event centers.
- Makes Kansas City more competitive with other cities with effective transit, such as St. Louis, Denver and Dallas.

KANSAS CITY REGIONAL RAPID RAIL

Your Future Regional Transportation Solution

KCRRR
Kansas City Regional Rapid Rail

Kansas City Regional Rapid Rail can provide a cost-effective method for transporting residents and visitors to and from jobs, event centers, and other activities within the Kansas City metropolitan area. It is a unique solution to this community's transportation challenges that takes advantage of underutilized and abandoned rail assets throughout the region.

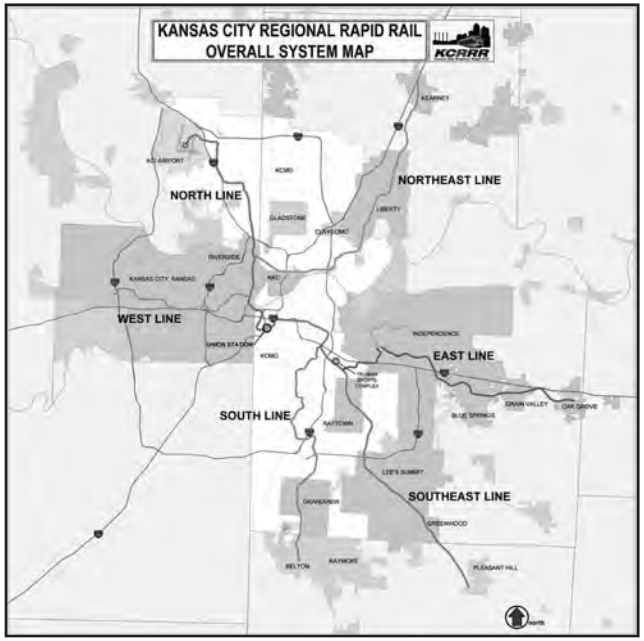
KANSAS CITY REGIONAL RAPID RAIL

What is Regional Rapid Rail?
Regional Rapid Rail (RRR) is a rapid transit system that operates on dedicated or shared rail lines linking suburban communities to downtown employment, entertainment and cultural districts. The RRR concept offers high speeds, frequent stops, and a comfortable ride.

What is Kansas City Regional Rapid Rail (KCRRR)?
KCRRR will be a fixed, rail-based transit system that will run for at least 16 hours per day transporting people along six different suburban corridors to destinations throughout the Kansas City metropolitan area. The ticket price is expected to be comparable to the cost of a gallon of gas. This system will serve virtually every major municipality and community in Jackson County, and many in Platte, Clay and Cass counties in Missouri, as well as Wyandotte County, Kansas.

What benefits does KCRRR offer?
KCRRR will serve as a cost-effective and reliable mode of transportation for people in the Kansas City metropolitan area. It will lessen roadway and highway traffic metro-wide, relieving stress on the aging highway infrastructure and greatly reducing highway maintenance costs. Communities will derive economic benefits from implementing KCRRR because fixed rail transit fosters development, creating local jobs. Additionally, KCRRR will help the environment, reducing our carbon footprint by offering an environmentally-friendly travel option.

How much will KCRRR cost?
The system will cost a little more than $1 billion. At about $8 million per mile, KCRRR is much more cost-effective than light rail, which can cost up to $60 million per mile. The total cost includes land acquisition, line and station construction, and rail car purchases.



How will KCRRR work with the existing bus system?
KCRRR will work together with the bus system to provide the comprehensive regional transit system the Kansas City area needs. Since the KCRRR vehicles will run on a fixed route there will be a need for a distributor system to move people from the rail line to various locations within the respective communities. The existing bus system can fill that need.

What will it be like to ride KCRRR?
You will be able to walk, bike, or drive to the stations. Most stations will have a parking lot, while all will have a drop-off area and a covered area on the platform to protect riders from inclement weather. When the train pulls up alongside the platform, you will walk from the platform into a single-level rail car with approximately 200 seats available on a first-come, first-served basis. Then, instead of fighting traffic, you can relax, read, or use the free wi-fi available on each car. Both stations and railcars will be ADA-compliant, accessible to wheelchairs, bicycles, strollers, etc.

Will it be safe to ride the KCRRR?
Safety of the rail line and riders are of the utmost importance. The KCRRR will be designed and constructed to meet Federal Railroad Administration standards to ensure the safety of both passengers and those outside of the cars. The trains will be operated by experienced and trained railroad and transit operators. KCRRR will utilize cameras and security personnel to help provide a safe environment for system patrons.

How were routes and stations determined?
The routes were determined primarily by existing rail infrastructure throughout the metropolitan area. Where new alignments are proposed, consideration was given to the ability to traverse areas with minimal impact to existing infrastructure and communities. Station locations will be determined by the accessibility to riders and the proximity to employment centers throughout the routes.

Regional Transportation Survey

Please take a few moments to complete this important survey. The results of the survey will be used to better understand the need for Regional Rapid Rail across the Kansas City metropolitan area. Before you begin, please read the enclosed brochure. The survey will take no more than five minutes of your time and your honest answers are appreciated. If you are not at least 18 years old, please have an adult member of your household complete the survey. If you have questions about the survey, please contact Grace Grimm, the project manager for the survey, at 913-829-1215. Thank you in advance for your participation.

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1. **Based on the information provided in the enclosed brochure, please rate your level of agreement with the following statement: "In my opinion, the Kansas City Regional Rapid Rail system will benefit the residents of the Kansas City metropolitan area."**
   ___(1) Strongly agree
   ___(2) Agree
   ___(3) Neither agree nor disagree
   ___(4) Disagree
   ___(5) Strongly disagree

2. **Excluding your home, which of the following places do you visit most frequently?**
   ___(1) Your workplace (if you work at a school, check this item)
   ___(2) Your school, including college or trade school (check this only if you are a student)
   ___(3) Other (check this only if you do not work or attend school--
   e.g., store, bank--please specify): _____

3. **Please provide the address of the place you listed in Question #2.** If you do not feel comfortable providing a complete street address, please list the nearest intersection.

   Street Address (or intersection): _____

   City: _____ State: _____ Zip Code: _____

4. **On a typical day, how long does it take you to get from your home to the place you listed in Question #2 (one-way)?**
   _____ minutes (one-way)

5. **How do you usually get from your home to the place you selected in Question #2?**
   Check Only ONE.
   ___(1) Drive yourself
   ___(2) Carpool
   ___(3) Take the bus
   ___(4) Walk
   ___(5) Bike
   ___(6) Work at Home
   ___(7) Other: _____

6. **What is the maximum amount that you would pay for a one-way trip on Regional Rapid Rail from your home to the place you selected in Question #2 (including transfers)? CHECK ONLY ONE**
   ___(1) $2.00
   ___(2) $2.50
   ___(3) $3.00
   ___(4) $3.50
   ___(5) $4.00
   ___(6) Other amount (specify): _____

7. If it were available, how often would you likely use Kansas City Regional Rapid Rail to get to/from the following destinations? (Circle one for each line item.)

	Destinations	Seldom/ Never	A few times per year	A few times per month	A few times a week	Almost Daily
A	Work/School (if you do not work or attend school, circle "seldom/never")	0	1	2	3	4
B	KCI Airport	0	1	2	3	4
C	Downtown Kansas City	0	1	2	3	4
D	Truman Sports Complex	0	1	2	3	4
E	Village West/KC Speedway/Legends	0	1	2	3	4
F	Sprint Center/Power & Light District	0	1	2	3	4
G	Zona Rosa	0	1	2	3	4
H	Independence Events Center	0	1	2	3	4
I	Worlds of Fun/Oceans of Fun	0	1	2	3	4
J	Swope Park/KC Zoo/Starlight Theatre	0	1	2	3	4
K	Crown Center/Union Station	0	1	2	3	4
L	Crossroads District	0	1	2	3	4
M	18th and Vine/Negro League Museum	0	1	2	3	4
N	Cerner Campus/North Kansas City Hospital	0	1	2	3	4
O	Other (specify): _____	0	1	2	3	4

8. How many vehicles do the people in your household own or lease, combined?

___(1) 0
___(2) 1
___(3) 2
___(4) 3
___(5) 4
___(6) more than 4

9. Please provide your HOME ADDRESS below. This information will be used to help us assess the level of interest in Regional Rapid Rail in different parts of the Kansas City area. Your responses to this survey will remain confidential. If you do not feel comfortable providing your complete home address, just provide an intersection near your home.

Street Address (or intersection): _____

City: _____ State: _____ Zip Code: _____

OPTIONAL: If you would like to receive updates about this study, please provide your e-mail address: _____

Thank you for your time in answering these questions.

Your honest answers will be used to help determine the viability of:
Kansas City Regional Rapid Rail across the metro.
Please Return Your Completed Survey in the Enclosed Postage Paid Envelope Addressed to:
ETC Institute, 725 W. Frontier Circle, Olathe, KS 66061