13.0 INTERCITY TRAVEL

I. Introduction/Current State of Kansas City Region’s Intercity Connectivity

Intercity travel can be defined as relating to, involving, connecting or traveling between two or more cities. For the Kansas City region, intercity travel can be described as the access area residents have to regional and national destinations. While the automobile is the predominant choice of people traveling within the region, others may choose or need different modes — bus, rail, or airplane — to reach regional or national destinations.

In developing MARC’s long-range transportation plan, several goals, objectives and strategies have been identified to advance the Kansas City region into the 21st century. One of those efforts should be to address the Kansas City region’s connectivity to population centers in Kansas, Missouri, the Midwest and beyond. While this chapter will help document and evaluate Kansas City’s intercity travel connections for years to come, it also can assist with an understanding of our region’s role in President Obama’s national vision for high-speed rail.

By gaining a better understanding of how the Kansas City region is connected by four major transportation modes of auto, bus, rail and air to other towns, cities and metropolitan statistical areas, planners, engineers, elected officials and residents will have another way to make informed decisions about travel options and Kansas City’s transportation status in the Midwest and U.S.

Why intercity connections?

In the 20th century, the United States built highway and aviation networks that transformed the country, fueling unprecedented economic expansion, fostering new communities, and connecting cities, towns and regions. Strong public-sector leadership and private-industry partnerships were the cornerstones to that success. States forged the path by identifying needs and investing in key portions of the system, and private industry brought innovation and resources, while the federal government provided an integrating vision, policy roadmap, and a funding framework that enabled the realization of a national system.

We now face a new set of transportation challenges and solutions, such as creating a foundation for economic growth in a more complex global economy, promoting energy independence and efficiency, addressing global climate change and environmental quality, and fostering livable communities connected by safe and efficient modes of travel. The existing transportation system requires significant investment simply to rebuild and maintain critical infrastructure and to modernize aging technologies. Meeting our 21st-century challenges will require new transportation solutions.

Several national strategic transportation goals have been identified to meet these challenges. They include: 1) ensuring safe and efficient transportation choices; 2) building a foundation for economic competitiveness; 3) promoting energy efficiency and environmental quality; and 4) supporting interconnected and livable communities.

As the nation and region have grown over time, while downtowns and urban areas have seen some growth, overall land-use patterns continue to become less dense and circumferential. To accommodate these growth patterns, the roadway network and highway corridors have become steadily more congested over longer spans
of roadway, which makes them increasingly expensive to maintain. This involves more complex funding challenges for planning, maintenance and expansion of the entire transportation system. Over time, these transportation and land-use policies have caused the suburban areas of metro regions to grow increasingly outward toward one another, while at the same time increasing intercity travel times and costs of commuting within and between them. This is especially evident with the faster-growing metro areas of the U.S.

Maximizing transportation efficiencies associated with intercity connections is perhaps one of the most vital stimuli to the economic vitality of a region, as they are the primary conduits through which external markets and visitors access and perceive our region.

II. Relationship between Kansas City Intercity Connectivity and Transportation Outlook 2040 Policy Goals

Accessibility
Intercity connectivity contributes to accessibility by evaluating and providing sensible and efficient connections of origins and destinations between cities and places of interest within Greater Kansas City, and between the region, the Midwest and the U.S.

Climate Change and Energy Use
Sensible and efficient Kansas City region connectivity by auto, bus, rail and air to the Midwest and other U.S. cities can have a profound impact on regional and national greenhouse-gas emissions and energy. The region’s intercity connectivity influence on environmental issues can be monitored and improved by continuing to evaluate the region’s intercity travel flow.

Economic Vitality
Kansas City’s intercity connectivity can play a role in increasing economic vitality for the region. Monitoring and evaluating the origin-destination dynamics of auto, bus, rail and air connections within the region and between Midwest and U.S. cities over time can be achieved to maximize any economic return from transportation investments related to these modes. It can also optimize the use of the existing system, improving access to jobs and labor markets, and improving regional connections to external markets.

Environment
Intercity connectivity provides another tool to evaluate efforts to mitigate negative environmental impacts from inefficient transportation facilities and services related to auto, bus, rail and air connections between the Kansas City region and other Midwest and U.S. cities.

Safety and Security
Intercity connectivity provides support for the safe and secure movement of auto, bus, rail and air passenger origin-destination service between the Kansas City region, Midwest cities and other U.S. cities. This includes the safe operation of transportation facilities; operations and management strategies; and public education, information and awareness activities.
**System Performance**
Monitoring and evaluating the Kansas City region’s intercity connectivity with Midwest and U.S. cities could improve the efficiency of system performance related to auto, bus, rail and air passenger origin-destination service.

**III. Kansas City Region Intercity Connections**

In examining travel patterns between the Kansas City region and other U.S cities, it is apparent that the region’s geographic location in the center of the United States is an important one. One of the region’s most attractive characteristics is its centralized location among seven major metropolitan and megopolitan areas of the Midwest, including the major transportation hubs of Chicago, Ill.; Dallas – Fort Worth, Texas; Minneapolis – Saint Paul, Minn.; and Memphis, Tenn. In order to examine intercity travel, a 550-mile radius was drawn from the center of downtown Kansas City, Mo.

The 550-mile radius is a logical study field to use when examining the Kansas City metro area’s intercity connectivity because this distance is generally considered about an eight-hour driving distance, which is perceived by residents and long-haul drivers as in the range of “a day’s travel.” Two other major metropolitan areas – Denver, Colo., and Milwaukee, Wis., — were also included due to Kansas City’s frequency of direct connections to Denver, and Milwaukee’s close proximity just outside the 550-mile radius.

Within this radius, 38 towns, cities and metropolitan/megapolitan areas in the Midwest and Central South portion of the United States were identified as being connected to the Kansas City metro area, either directly or by one to two connections/layovers when traveling by auto, bus, rail, or airplane. These 38 cities comprise a population of just over 38,000,000. While the list of cities directly connected to Kansas City could be more extensive, the focus remains on the included cities due to transit station and airport location, and other travel influences of relative city locations. Upon the next update of this document, it may become necessary to include additional towns and cities in the study radius.
Transportation Modes Connectivity

Figure 13.1: Kansas City, Mo., Intercity Destinations

<table>
<thead>
<tr>
<th>CITY</th>
<th>DISTANCE (miles)</th>
<th>Population (2008)*</th>
<th>Bus Direct Connection</th>
<th>Rail Direct Connection</th>
<th>Air Direct Connection</th>
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<tr>
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<td>Fayetteville/Rogers, Bentonville, Arkansas</td>
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<td>444,000</td>
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<td>~</td>
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<td>Tulsa, Oklahoma</td>
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<td>28,000</td>
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<tr>
<td>Cape Girardeau, Missouri</td>
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<td>91,000</td>
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<tr>
<td>Oklahoma City, Oklahoma</td>
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<td>1,276,000</td>
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<tr>
<td>Davenport/Moline, Iowa Illinois</td>
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<tr>
<td>Madison, Wisconsin</td>
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<td>620,000</td>
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<tr>
<td>Chicago, Illinois</td>
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<td>Y</td>
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<td>Shreveport/Bossier City, Louisiana</td>
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<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>Dallas-Fort Worth, Texas</td>
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<td>6,055,000</td>
<td>Y</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>Milwaukee, Wisconsin</td>
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<td>1,250,000</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
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<tr>
<td>Denver, Colorado</td>
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<td>~</td>
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</tr>
</tbody>
</table>


Data for bus, passenger rail and commercial-air service were collected from Greyhound, Megabus and Johnson County Transit, Amtrak, flightstats.com, the Kansas City, Mo., Aviation Department, various carriers, and Internet search engines over a four-month timeframe between mid-September 2009 and January 2010, and included analysis of direct/indirect departure/arrival times, trip duration and travel costs for all three transportation modes.

The Kansas City metro area is directly and indirectly connected by the three transportation modes of bus service, passenger rail and commercial-air service at least 91 times on a daily basis to the 38 cities and major metropolitan/megapolitan areas identified within the 550-mile radius. These 38 cities are directly connected to Kansas City by these three modes 42 times daily, and indirectly connected to Kansas City 48 times daily.
From a comprehensive transportation mode perspective, cities with the most number of direct and indirect transportation mode connections to Kansas City include:

1) Chicago, Ill. – 6 times daily
2) Dallas – Fort Worth, Texas – 5 times daily
3) Denver, Colo. – 5 times daily
4) St. Louis, Mo.; Minneapolis – St. Paul, Minn.; Milwaukee, Wis.; and Memphis, Tenn. – 4 times daily

**Figure 13.2: Kansas City, Mo., Direct/Indirect Service Intercity Destinations**
Direct/Indirect Connection Frequency

By including the daily direct/indirect frequency of all three transportation modes, the Kansas City metro area has a total of at least 352 direct and/or indirect daily connections to the 38 cities and metropolitan/megapolitan areas identified within the 550-mile radius. Of these daily connections, 250 are direct connections, and 102 are indirect connections. Bus connections make up 116 of these direct and/or indirect daily connections, 35 are passenger-rail connections, and 201 are provided by commercial-air service.

For all three transportation modes, the 10 cities with the greatest collective frequency of direct or indirect daily bus, passenger=rail and/or commercial=air service connections to Kansas City include:

1) Chicago, Ill. – 71 times daily
2) Denver, Colo. – 35 times daily
3) Dallas – Fort Worth, Texas – 27 times daily
4) Minneapolis – St. Paul, Minn. – 26 times daily
5) Milwaukee, Wis. – 19 times daily

The cities that fall within what could be considered the mid-range category for frequency of direct or indirect bus, passenger rail and/or commercial air service connections to Kansas City include:

6) Memphis, Tenn. – 16 times daily
7) Lawrence, Kan. – 14 times daily
8) St. Louis, Mo. – 13 times daily
9) Oklahoma City, Okla. – 9 times daily
10) Manhattan, Kan.; Joplin, Mo.; Des Moines, Iowa; Tulsa, Okla.; Madison, Wis. – 7 times daily

The cities that fall within what could be considered the lower-range category for frequency of direct or indirect bus, passenger rail and/or commercial air service connections to Kansas City include:

11) Columbia, Mo.; Salina, Kan.; Omaha, Neb.; Little Rock, Ark.; Shreveport – Bossier City, La. – 6 times daily
12) Springfield, Mo.; Fort Leonard Wood, Mo.; Davenport – Moline, Iowa–Ill. – 5 times daily
13) Wichita, Kan.; Fayetteville/Rodgers/Bentonville, Ark.; Cape Girardeau, Mo. – 4 times daily
14) Warrensburg, Jefferson City and Rolla, Mo. – 3 times daily
15) St. Joseph, Sedalia, Lebanon and Sikeston, Mo.; Emporia, Coffeyville and Hays, Kan. – 2 times daily

Just two of the 38 cities identified within the 550-mile radius had only one daily direct or indirect bus, passenger-rail and/or commercial-air service connection to Kansas City:

16) Maryville and Hannibal, Mo. – 1 time daily

The overwhelming majority of these direct/indirect connections to Kansas City are through commercial air service, while direct/indirect passenger rail-service connectivity occurs the least often. Direct/indirect commercial air service connectivity is nearly twice the frequency of direct/indirect bus service connectivity and nearly six times the frequency of direct/indirect passenger rail service connectivity. Additionally, direct/indirect bus service connectivity is nearly three-and-a-half times the frequency of direct/indirect passenger rail service connectivity.
Direct Connections

By including the daily frequency of all three transportation modes, the Kansas City metro area has a total of 250 direct daily connections to the 38 cities and metropolitan/megapolitan areas identified within the 550-mile radius — 81 direct bus connections, 11 direct passenger-rail connections, and 158 provided by commercial-air service.

For all three transportation modes, cities with the greatest frequency of direct daily bus, passenger-rail and commercial-air connections to Kansas City include:

1) Chicago, Ill. – 64 times daily
2) Denver, Colo. – 30x daily
3) Dallas – Fort Worth, Texas – 23 times daily
4) Minneapolis – St. Paul, Minn. – 21 times daily
5) Lawrence, Kan. – 14 times daily
6) St. Louis, Mo. – 12 times daily
7) Milwaukee, Wis. – 10 times x daily
8) Memphis, Tenn. – 8 times daily
9) Oklahoma City, Okla., and Manhattan, Kan. – 7 times daily
10) Joplin, Mo. – 6 times daily

Most of these direct connections are by commercial aircraft.

Indirect Connections

By including the daily frequency of all three transportation modes, the Kansas City metro area has a minimum of 102 indirect connections to the cities and metropolitan/megapolitan areas identified within the 550-mile radius; 35 of which are indirect bus connections, 24 of which are indirect passenger rail connections, and at least 43 of which are indirect commercial air service connections.

For all three transportation modes, cities with the greatest collective frequency of indirect bus, passenger rail and commercial air connections to Kansas City include:

1) Milwaukee, Wis. – 9 times daily
2) Memphis, Tenn. – 8 times daily
3) Chicago, Ill., and Madison, Wis. – 7 times daily
4) Little Rock, Ark. and Shreveport, La. – 6 times daily
5) Denver, Colo.; Minneapolis – St. Paul, Minn., and Davenport – Moline, Iowa—Ill. – 5 times daily
6) Dallas – Fort Worth, Texas; Cape Girardeau, Mo.; Omaha, Neb.; Springfield, Mo. – 4 times daily

(Indirect service evaluation can become extremely detailed. For the purposes of providing a conservative estimate of indirect transportation mode frequency of connectivity, indirect service to Kansas City was based on a destination city’s passenger air service to KCI that has at least two indirect flights per day.)
**Intercity Bus Connectivity**

Bus service information was collected from Greyhound, Megabus and Johnson County Transit over a four-month timeframe between mid-September 2009 and January 2010. This information includes direct/indirect departure/arrival times, trip duration and travel costs.

Regarding frequency of bus mode connectivity, four of the 38 cities within the 550-mile radius of Kansas City have both direct and indirect bus service to and from Kansas City provided by more than one carrier (Lawrence, Columbia, St. Louis and Chicago). The Kansas City metro area is directly or indirectly connected by bus service at least 116 times on a daily basis to the 38 cities and major metropolitan/megapolitan areas identified. Twenty-three of these cities are directly connected by bus to Kansas City 81 times daily, and 17 of these cities are indirectly connected to Kansas City 35 times daily.

From a bus perspective, cities with the most number of direct and/or indirect bus connections to Kansas City include:

5) Lawrence, Kan. – 13 times daily  
6) Chicago, Ill. – 8 times daily  
7) Dallas – Fort Worth, Texas – 7 times daily  
8) Des Moines, Iowa – 5 times daily  
9) Oklahoma City, Okla. – 5 times daily

Cities with the most number of direct bus connections to Kansas City include:

17) Lawrence, Kan. – 13 times daily  
18) Dallas – Fort Worth, Texas – 7 times daily  
19) Columbia, Mo.; Des Moines, Iowa; Oklahoma City, Okla.; St. Louis, Mo.; and Chicago, Ill. – 5 times daily  
20) Topeka, Kan.; Tulsa, Okla.; Minneapolis – St. Paul, Minn. – 4 times daily  
21) Joplin, Mo., and Denver, Colo. – 3 times daily

Cities with the most number of indirect bus connections to Kansas City include:

1) Memphis, Tenn., and Milwaukee, Wis. – 4 times daily  
2) Rolla, Mo. – 3 times daily  
3) Chicago, Ill. – 3 times daily

**Travel Times**

Travel times associated with bus travel within the 550-mile radius gradually increase with distance from the Kansas City travel point of origin, and range between one hour and 23 hours. For destinations 250 miles or less from the Kansas City region, several travel times are similar to that of traveling by automobile travel. If traveling to Tulsa, Oklahoma City, Minneapolis, Memphis, Dallas – Fort Worth, Chicago, or another major metropolitan area, travel times can be expected to increase by about 40 percent in most cases.

**Travel Costs**

Travel costs associated with bus travel within the 550-mile radius gradually increase with distance from the Kansas City travel point of origin and range between $11 to $20 and $84 to $112 for one-way tickets, and range between $22 to $40 and $168 to $224 for roundtrip tickets. Other influences on cost also
include route condition, topography, roadway classification, congestion, time of day, etc. Additionally, for various major metropolitan areas connected by the National Highway System and/or the Interstate Highway System, bus ticket costs can be lower in many cases.

**Gaps in Service**

Behind the auto, the Kansas City region’s bus connectivity to intercity destinations is the second most comprehensive of the four transportation modes reviewed. Like auto travel, bus travel has the least amount of gaps in service when compared with passenger rail and air travel. Additionally, with fuel costs rising, airfare increasing and congestion growing, the bus sector has seen a resurgence in activity over the last few years, and has been expanding service throughout the United States at the fastest rate in four decades.

While it may be advantageous to examine Kansas City’s travel behavior between other small cities in the Midwest, many medium and small Midwest cities have Greyhound service along routes connecting to large metropolitan statistical areas and consolidated metropolitan statistical areas. It may also be advantageous to examine potential direct bus service to Kansas City International Airport, Kansas City’s three Amtrak stations, and to seasonal destinations such as Branson, Mo., and the Ozark Mountains.

**Intercity Passenger Rail Connectivity**

Passenger-rail service information was collected from Amtrak over a four-month timeframe between mid-September 2009 and January 2010, the bulk of which occurred in October and November 2009 and included direct/indirect departure/arrival times, trip duration and travel costs.

The Kansas City metro area is directly or indirectly connected by passenger-rail service at least 35 times daily to 18 of the 38 cities and major metropolitan/megapolitan areas identified within a 550-mile radius. Seven of these cities are directly connected by passenger-rail service to Kansas City 11 times daily, and 11 of these cities are indirectly connected by passenger-rail service to Kansas City 24 times daily.

Cities with the most number of direct and/or indirect passenger-rail connections to Kansas City include:

1) Chicago, Ill.; Minneapolis – St. Paul, Minn.; Madison and Milwaukee, Wis. – 3 times daily

Cities with the most number of direct passenger-rail connections to Kansas City are along Amtrak’s Missouri River Runner route and include:

1) St. Louis, Jefferson City, Sedalia and Warrensburg, Mo. – 2 times daily

Cities with the most number of indirect passenger-rail connections to Kansas City include (one connection either in St. Louis or Chicago):

1) Minneapolis-St. Paul, MN; Madison & Milwaukee, WI – 3x daily

**Travel Times**

Bus travel times within the 550-mile radius gradually increase with distance from the Kansas City travel point of origin, and range between one hour 15 minutes to seven hours 30 minutes for direct
connections, and range from five hours 30 minutes to 28 hours for connecting service. When traveling to major metropolitan areas or other cities and towns located within a rail corridor, when compared with auto and bus travel times, passenger rail travel times can be expected to increase by about 60 percent in most cases. In some cases travel times can increase by 100 percent to 400 percent. For example, traveling to Dallas – Fort Worth can take up to 28 hours. Traveling to Denver can take up to 25 hours. Traveling to Minneapolis – St. Paul can take up to 19 hours.

**Travel Costs**

Travel costs associated with bus travel within the 550-mile radius gradually increase with distance from the Kansas City travel point of origin and range between $11 and $112 for one-way tickets, and between $22 and $224 for round-trip tickets. Influences on cost weigh more heavily on amenities, cost of fuel and delay, and do not vary between time of day. When compared with bus and air travel costs, passenger rail ticket costs vary greatly. Some passenger rail routes are comparable to, but slightly more expensive than traveling by bus. While most passenger rail routes are much cheaper than air travel, some routes are only slightly less expensive. Travel costs to different sized towns, cities, and major metropolitan areas do not vary as much as bus or air travel.

**Gaps in Service**

While over the last few years overall passenger rail ridership has risen, and despite the Kansas City region’s three Amtrak stations, this situation has done little to bring about better passenger-rail connectivity to the Kansas City region. Passenger rail has the largest gaps in service, primarily due to the cost of building, owning, and/or leasing fixed infrastructure, in addition to competition from the more time-efficient and cost-efficient transportation modes of auto, bus and air travel. As a consequence, while Kansas City’s growth rate has remained steady, its passenger-rail connectivity to the much faster-growing consolidated metropolitan statistical areas such as Chicago, Minneapolis – St. Paul, Dallas – Fort Worth and Memphis has remained generally the same, while auto trips, bus ridership and air travel to these destinations have increased.

Kansas City’s connectivity to other growing metropolitan statistical areas such as Omaha, Des Moines, Tulsa and Oklahoma City remains nonexistent. While the focus in the Kansas City region has been on improving rail connectivity to St. Louis, it may be advantageous to further evaluate Kansas City’s travel connectivity to and between these other metro areas. In this same regard, it may be beneficial to evaluate travel connectivity to Branson and the Ozark Mountains in Missouri for future seasonal passenger rail.

MARC launched an online survey in November 2008 to collect opinion data for *Transportation Outlook 2040*, asking participants for their reaction to the following statement:

*Our region has adequate connections to other cities by passenger rail. (Amtrak)*

<table>
<thead>
<tr>
<th>Responses</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>13</td>
</tr>
<tr>
<td>Agree</td>
<td>42</td>
</tr>
<tr>
<td>Neutral</td>
<td>89</td>
</tr>
<tr>
<td>Disagree</td>
<td>162</td>
</tr>
</tbody>
</table>
The Kansas Department of Transportation and Amtrak recently evaluated passenger-rail service viability in Kansas between Kansas City, Oklahoma City and Fort Worth.

**Study Summary: Feasibility Study of Expanded Passenger-Rail Service in Kansas**
Prepared by Amtrak and Burlington Northern Santa Fe Railway for the Kansas Department of Transportation
Fact Sheet (Source: KDOT, March 11, 2010)

In December 2008, the National Railroad Passenger Corporation (Amtrak) was enlisted to provide a feasibility study to the Kansas Department of Transportation (KDOT) on costs and logistics of a potential expansion of passenger rail service in Kansas. The study was completed in March 2010.
Four possible scenarios were identified and investigated. Two were nighttime extensions of the Heartland Flyer: 1) Oklahoma City to Newton, and 2) Oklahoma City to Kansas City. Two scenarios were stand-alone daytime passenger services operating independent of any other Amtrak routes: 1) Fort Worth to Kansas City, and 2) Oklahoma City to Kansas City.

The Amtrak analysis of the four alternatives included operational route descriptions, necessary infrastructure improvements, proposed schedules, equipment and staffing needs, projected start-up costs, revenue and ridership forecasts, projected operating costs, estimated operational support from states and comparisons to other transportation modes. Figure 12.3 compiles many of these factors.

Because most of the proposed expansion would operate on existing freight-hauling rail, Amtrak received infrastructure improvement cost estimates from the BNSF Railway. For the purpose of this study, the BNSF Railway compiled their estimates using 100% on-time performance of the passenger rail service. Not a part of the study is how the estimated start-up and operational costs might be shared between partners in the project. It should also be noted that cost estimates in the study are in 2009 dollars and that those numbers would likely increase in the future. Other items that could drive up costs include required safety features such as positive train control and future federal guidelines for on-time performance.

Although the study identifies potential station locations in Kansas and Oklahoma, they are included primarily to present a realistic analysis of potential schedules and ridership forecasts. Costs and operational logistics associated with creating a rail station in a city not currently served by Amtrak are not included in the study.

The Feasibility Report of Proposed Amtrak Service is part of an ongoing information-gathering process. KDOT was awarded a $250,000 American Recovery and Reinvestment Act grant to create the Service Development Plan, a comprehensive business and operations plan for implementing expanded passenger rail service in Kansas. The grant requires a 50% match of $250,000. KDOT and the Oklahoma Department of Transportation have committed to share the cost of this match requirement.

Portions of the study were prepared by Amtrak and other portions, including infrastructure costs, were prepared by BNSF Railway. BNSF’s main role was to determine what improvements need to be made to the infrastructure (capacity, track speed, crossings) to ensure on-time service to the passenger trains and to make sure that freight train transit times are not degraded.
Figure 13.3: Amtrak Feasibility Report for Expanded Passenger Rail Service in Kansas  
(Estimates are in 2009 dollars and do not reflect costs for station development or renovations.)

<table>
<thead>
<tr>
<th>Four Alternatives</th>
<th>Route</th>
<th>Day/Night (in Kansas)</th>
<th>Description</th>
<th>Connections</th>
<th>Potential Kansas Stops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Newton, Kan. – Fort Worth, Texas</td>
<td>Night</td>
<td>Extends Heartland Flyer from Oklahoma City to Newton – 405 mi.</td>
<td>Southwest Chief, Texas Eagle</td>
<td>Newton, Wichita, Ark City</td>
</tr>
<tr>
<td>2</td>
<td>Kansas City, Mo. – Fort Worth, Texas</td>
<td>Night</td>
<td>Extends Heartland Flyer from Oklahoma City to Kansas City – 606 mi.</td>
<td>Southwest Chief, Missouri River Runner, Texas Eagle</td>
<td>Lawrence, Topeka, Emporia, Strong City, Newton, Wichita, Ark City</td>
</tr>
<tr>
<td>3</td>
<td>Kansas City, Mo. – Fort Worth, Texas</td>
<td>Day</td>
<td>New service between Kansas City and Fort Worth – 606 mi.</td>
<td>Stand-alone Service</td>
<td>Lawrence, Topeka, Emporia, Strong City, Newton, Wichita, Ark City</td>
</tr>
<tr>
<td>4</td>
<td>Kansas City, Mo. – Oklahoma City, Okla.</td>
<td>Day</td>
<td>New service between Kansas City and Oklahoma City – 400 mi.</td>
<td>Stand-alone Service</td>
<td>Lawrence, Topeka, Emporia, Strong City, Newton, Wichita, Ark City</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated Start-up Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Main Track</td>
</tr>
<tr>
<td>Grade Crossing Improvements</td>
</tr>
</tbody>
</table>

| Other Improvements | $300,000 (layover facility in Newton) |

| Total Track Costs | $114.3 million | $274 million | $413 million | $251 million |
| Rolling Stock | 3 Locomotives, 5 Coach, 1 Food Service = 9 Total | 3 Locomotives, 5 Coach, 1 Food Service = 9 Total | 5 Locomotives, 7 Coach, 2 Food Service = 14 Total | 6 Locomotives, 4 Coach, 2 Food Service = 12 Total |
### Rolling Stock Costs

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$40 million</td>
<td>$40 million</td>
<td>$63 million</td>
<td>$56 million</td>
</tr>
</tbody>
</table>

### Mobilization Costs

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$1.5 million</td>
<td>$3 million</td>
<td>$3.1 million</td>
<td>$2.1 million</td>
</tr>
</tbody>
</table>

### Total Start-up Costs

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$155.8 million</td>
<td>$317 million</td>
<td>$479.1 million</td>
<td>$309.1 million</td>
</tr>
</tbody>
</table>

### Operation Estimates

#### Estimated Annual Operating Expense

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$5.9 million</td>
<td>$10.4 million</td>
<td>$14.1 million</td>
<td>$8.5 million</td>
</tr>
</tbody>
</table>

#### Estimated Ridership

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ridership</td>
<td>92,500</td>
<td>118,200</td>
<td>174,000</td>
<td>65,900</td>
</tr>
</tbody>
</table>

#### Estimated Annual Operating Revenue

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$2.7 million</td>
<td>$5.2 million</td>
<td>$6.1 million</td>
<td>$2.1 million</td>
</tr>
</tbody>
</table>

#### Estimated Annual Operating Subsidy

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsidy</td>
<td>$3.2 million</td>
<td>$5.2 million</td>
<td>$8.1 million</td>
<td>$6.4 million</td>
</tr>
</tbody>
</table>

### Intercity Commercial Air Connectivity

Commercial air service information was collected from flightstats.com, the Kansas City, Mo., Aviation Department, and various carriers and search engines over a four-month timeframe between mid-September 2009 and January 2010, primarily in October and November 2009, and included direct/indirect departure/arrival times, trip duration and travel costs.

The Kansas City metro area is directly or indirectly connected by passenger-rail service at least 201 times daily to 24 of the 38 cities and major metropolitan/megapolitan areas identified within a 550-mile radius. Twelve of these cities have direct connection commercial air service to Kansas City 158 times daily, and 20 of these cities are indirectly connected by commercial air service to Kansas City 43 times daily.

Cities within the 550-mile radius with the most number of direct and/or indirect commercial flight connections to Kansas City include:

1. Chicago, Ill. – 60 times daily (+)
2. Denver, Colo. – 29 times daily (+)
3. Minneapolis – St. Paul, Minn. – 19 times daily (+)
4. Dallas – Fort Worth, Texas – 18 times daily (+)
5. Milwaukee, Wis. – 12 times daily (+)
6. Memphis, Tenn. – 10 times daily (+)
7) Manhattan, Kan. – 7 times daily  
8) St. Louis, Mo. – 6 times daily  
9) Joplin, Mo.; Salina, Kan.; Oklahoma City, Okla. – 4 times daily  
10) Fort Leonard Wood, Mo. – 3 times daily

Cities within the 550-mile radius with the most number of direct commercial air service connections to Kansas City include:

1) Chicago, Ill. – 58 times daily  
2) Denver, Colo. – 27 times daily  
3) Minneapolis – St. Paul, Minn. – 17 times daily  
4) Dallas – Fort Worth, Texas – 16 times daily  
5) Milwaukee, Wis. – 10 times daily  
6) Memphis, Tenn. – 8 times daily  
7) Manhattan, Kan. – 7 times daily  
8) St. Louis, Mo. – 5 times daily  
9) Joplin, Mo.; Fort Leonard Wood, Mo. – 3 times daily  
10) Salina, Kan., and Oklahoma City, Okla. – 2 times daily

Cities within the 550-mile radius with the most number of indirect commercial air service connections to Kansas City include:

1) Chicago, Ill. – (At least 2)  
2) Denver, Colo. – (At least 2)  
3) Minneapolis – St. Paul, Minn. – (At least 2)  
4) Dallas – Fort Worth, Texas – (At least 2)  
5) Milwaukee, Wis. – (At least 2)  
6) Memphis, Tenn. – (At least 2)  
7) Oklahoma City, Okla. – (At least 2)  
8) Des Moines, Iowa – (At least 2)  
9) Omaha, Neb. – (At least 2)  
10) Tulsa, Okla. – (At least 2)

When including cities outside of the 550-mile travel radius, cities with the greatest number of direct commercial air service connections to Kansas City include:

1) Chicago, Ill. – 58 times daily  
2) Denver, Colo. – 27 times daily  
3) Washington, D.C. – 25 times daily  
4) Houston, Texas – 24 times daily  
5) Atlanta, Ga. – 21 times daily  
6) Minneapolis – St. Paul, Minn. – 17 times daily  
7) Dallas – Ft. Worth, Texas – 16 times daily  
8) Newark, N.J. – 14 times daily  
9) New York, N.Y. – 13 times daily  
10) Detroit, Mich., and Cincinnati, Ohio – 12 times daily  
11) Milwaukee, Wis. – 10 times daily  
12) Memphis, Tenn. – 8 times daily  
13) Charlotte, N.C. – 8 times daily  
14) Philadelphia, Pa.; Cleveland, Ohio; and Manhattan, Kan. – 7 times daily
15) Phoenix, Ariz. – 6 times daily
16) Los Angeles, Calif.; St. Louis, Mo.; and Salt Lake City, Utah – 5 times daily

Travel Times

Travel times associated with commercial flight connections within the 550-mile radius gradually increase with distance from the Kansas City travel point of origin and range between 30 minutes and one hour 30 minutes for direct connections, and between two hours 30 minutes, and as high as 13 hours for connecting service. Compared with auto, bus and passenger-rail travel times to major metropolitan areas, in most cases commercial flight travel times can be expected to decrease exponentially as distance increases. In some cases travel times can decrease by 700 percent. For example, traveling to Dallas – Fort Worth by commercial flight can take as little as one-and-a-half hours compared to an eight-hour auto or bus trip or a 28-hour passenger-rail trip.

Travel Costs

Bus travel costs associated within the 550-mile radius gradually increase with distance from the Kansas City point of origin, and range between $50 and $457 for one-way tickets, and between $99 and $915 for round-trip tickets. Influences on air travel costs weigh more heavily on time of day, time of week, distance, amenities associated with first class vs. business class vs. coach, cost of fuel, cancelled or overbooked flights, delay, amount of luggage, etc. When compared with auto, bus and passenger-rail travel costs, airline ticket costs vary greatly. Airline tickets to some cities are comparable to bus-ticket costs and passenger-rail costs, but overall airline tickets are more expensive than bus or passenger rail. Airline ticket costs to smaller cities with regional or city airports are, on average, far more expensive than service to major metropolitan areas with international service.

Gaps in Service

Over the last few years, nonstop flights from Kansas City to intercity destinations have become less common. The major metropolitan areas of Minneapolis – St. Paul, Memphis, Chicago, Dallas – Ft. Worth and Denver all offer direct airfare out of Kansas City International.

Over the last year, direct commercial airline service has been eliminated to smaller metropolitan statistical areas, including Omaha, Tulsa, Little Rock and Columbia. Service has remained relatively stagnant to large consolidated metropolitan statistical areas such as Chicago, Denver, Minneapolis – St. Paul, and Dallas – Fort Worth.

Airlines know their passenger base and travel behavior, and while the larger metros within a 550-mile radius of Kansas City have seen little-to-no drops in service, further examination may be warranted of Kansas City’s travel connectivity to, and travel behavior between, other sizeable metros such as Madison, Des Moines, Omaha, Wichita, Tulsa and Little Rock.

Intercity Auto Connectivity

The National Interstate and Defense Highways Act was enacted on June 29, 1956. As of 2006, the interstate highway system had a total length of 46,876 miles, making it both the largest highway system in the world and the largest public works project in history.
Kansas City residents are served by three major interstate highways that allow a user to reach any destination:

- Interstate 35: Minneapolis – St. Paul, Des Moines, Wichita, Oklahoma City, Dallas – Ft. Worth and San Antonio are directly accessible. Houston can also be easily reached by using Interstate 45 from Dallas.
- Interstate 70: Denver, Topeka, Lawrence, Columbia, and St. Louis are accessible. Chicago, Memphis, Colorado Springs and Cheyenne can also be easily reached using I-70.
- Interstate 29: Omaha, St. Joseph and Sioux Falls are accessible.

**U.S. National Highway System – Missouri**

Kansas City can also access Springfield, Tulsa and Little Rock via U.S. 71 South, which is considered the Missouri portion of Interstate 49, extending north from New Orleans, and is now being built in Louisiana and Arkansas.

According to the 2000 Census, the MARC region brings 59,000 outside trips into the region daily and 20,500 trips leave the MARC region daily. Lawrence, Kan., has the largest share entering the region, with 8,600 trips. Lawrence also receives the highest share of commuters leaving the region, at 3,000 daily trips.

**Figure 13.4: Work Trips Entering and Leaving MARC Region Daily**

![Graph showing daily work trips entering and leaving the MARC Region]

Source: Census Transportation Planning Package: Census 2000

The flexibility of interstate travel makes it the most convenient form of travel for Kansas City residents seeking direct intercity travel. By carpooling, costs for users reduce dramatically. Carpooling reduces user costs dramatically, and in many cases it can save the most time.
**Travel Times**

Auto travel times in the 550-mile radius gradually increase with distance from the Kansas City travel point of origin, and range from 45 minutes to 12 hours for direct connections.

**Travel Costs**

Auto travel costs have been analyzed using the federal IRS rate of $0.55 cents per mile for total auto operating costs. Automobile operating costs within the 550-mile radius gradually increase with distance from the Kansas City travel point of origin, and range between $20 and $331 for one-way trips, and between $40 and $663 for round-trips (one occupant).

In addition, auto travel has been analyzed using 20 miles per gallon at $2.50 per gallon of gasoline. For round-trips, fuel costs range between $9.50 and $150.50 within the 550-mile radius (1 occupant).

Influences on auto travel costs weigh more heavily on time of day, time of week, distance, cost of fuel, fuel efficiency based on wind and topography, congestion, vehicle weight, delay from accidents and construction zones, etc.

**Gaps in Service**

Without a detailed examination of congestion and roadway condition, gaps in service for automobile connectivity to intercity destinations prove difficult to qualify and quantify. Development of the I-49 corridor from New Orleans through central and northern Louisiana, western Arkansas and western Missouri using existing U.S. 71 highway infrastructure is a good example of mitigating future gaps in service caused by increased auto use for long distances and increased truck traffic related to freight activity through the Midwest.

Potential future gaps in service, such as general traffic congestion, roadway condition and travel behavior, could be resolved by identifying opportunities for practicing sustainable development related to land use and transportation initiatives.

**IV. Regional and State Involvement**

MARC will continue developing regional policy objectives for intercity travel and connectivity to be incorporated into *Transportation Outlook 2040*. Examples of these objectives include:

- Support and advance the proposed St. Louis to Kansas City rail corridor as part of President Obama’s national high-speed rail vision.
- Support efforts to upgrade and improve existing passenger-rail service in Kansas and Missouri.
- Work with Kansas and Missouri to study opportunities for expanded passenger-rail and high-speed rail service (Oklahoma City, Denver, Omaha)

The Missouri Department of Transportation (MoDOT) supports the concept of state-supported passenger rail and has asserted that investments would be focused on substantially improving the reliability and travel time between Kansas City and St. Louis. MoDOT has identified that the Kansas City
to St. Louis corridor would be eligible for federal high-speed rail program funding as a part of the Chicago hub network.

MoDOT has also stated that the type of high-speed rail project Missouri plans to develop is one that would make train service on the existing Union Pacific line faster over time. These improvements would be done incrementally as funding becomes available, and as planning and design work with Union Pacific is completed.

MoDOT has an advantage in the competitive grant process. Missouri is a part of the Midwest Regional Rail Initiative. Since 1996, this group of nine departments of transportation has worked to plan and implement a 3,000-mile, high-speed rail system with Chicago as the hub.

In 2006, MoDOT, Union Pacific and Amtrak made efforts to improve this corridor and ensure its survival. Since then, Union Pacific has completed a $26 million project adding double tracks to the Gasconade River Bridge. MoDOT, Union Pacific and Amtrak broke ground on a new rail siding (an extra track that runs parallel to a main rail line where trains can pass each other without stopping) at California, Mo.

In addition, MoDOT has identified:

- $35 million in improvements already funded
- $50 million in shovel-ready projects
- $100 million in corridor projects
- $50 million in train equipment

The state of Kansas supports efforts to study the potential for passenger rail, and the Kansas Department of Transportation (KDOT) supports state-supported passenger rail. KDOT is planning for the future in the event the Kansas Legislature funds state-supported passenger-rail service. A primary effort by KDOT, which remains the foundation for future expansion of state-supported passenger rail in Kansas, is the Amtrak Expansion Feasibility Study. When completed, the study will have evaluated the potential costs of state-supported, intercity passenger rail between Kansas City, Oklahoma City and Fort Worth, and will have identified the infrastructure, capital and operating costs to start and support the service. Upon completion, a comprehensive service development plan will build on the findings of the Amtrak Expansion Feasibility Study.

The KDOT state rail plan includes passenger rail, freight rail, and short line-rail components. While a passenger-rail plan is not required to seek America Recovery and Reinvestment Act funds, it is required to seek other federal grants for passenger rail service. An updated plan will position KDOT to develop a passenger-rail program if it is authorized and funded, and to apply for other federal grants if the state implements expanded passenger rail.

V. Future Needs and Opportunities Studies

While Transportation Outlook 2040 solicits future regional transportation investments based on the best understanding of today’s needs, there are additional system considerations which need further study. Potential future studies that have been identified in the region that may be conducted provide an opportunity to employ the strategies outlined in the Transportation Outlook 2040 framework, as well as...
employment of strategies specific to the Kansas City region’s intercity connectivity. These potential studies include:

- **Kansas City, Mo./Liberty Corridor** – Future study of mobility along existing interchanges of I-35 in from I-29 to the metropolitan planning boundary (MO-92) (Study origin – Preliminary Transportation Needs Assessment)

- **Lansing Bypass Study** – Future study corridor for highway capacity improvements (Study origin – K-7 Study)

- **Lawrence Alternatives Analysis** – Future alternatives analysis to evaluate transit options (Study origin - Kansas City Rail Commuter Rail Study)

- **Odessa Alternatives Analysis** – Future alternatives analysis to evaluate transit options.

- **Pleasant Hill Alternatives Analysis** – Future alternatives analysis to evaluate transit options.

- **U.S. 71 Corridor** – Future corridor study of traffic flow (Study origin – South Midtown Roadway Restudy, Preliminary Engineering Design Report)

- **U.S. 169 Alternatives Study** – Future study for highway capacity improvements (Study origin – MoDOT)

- **Unified Government of Wyandotte County I-435 Study** – A study of I-435 from I-70 north to Leavenworth Road. This study will also include the I-70 and 110th Street interchange.

- **Amtrak Passenger Service Development Plan** – A comprehensive service development plan will build on the findings of the Amtrak Expansion Feasibility Study.

- **High-Speed Rail Study** – In response to President Obama’s national vision for high-speed rail, it may continue/supplement past studies conducted in the past, such as the I-70 Alternatives Analysis or the I-35 Commuter Rail Study.

The following sections provide an example of inventory and supporting analysis that can used to conduct the Kansas City region’s intercity connectivity:

**VI. Strategies and Recommendations**

**Passenger and High-Speed Rail**

- Support and advance the proposed St. Louis to Kansas City rail corridor as part of the Vision for High-Speed Rail in America.
• Support efforts to upgrade and improve existing passenger-rail service in Kansas and Missouri.

• Partner with Kansas and Missouri to study opportunities for expanded passenger rail and high-speed rail service (Oklahoma City, Denver, Omaha) serving Greater Kansas City.

Express Bus Transit
• I-70 Express Bus (west) — Work with KDOT, transit agencies, and metropolitan planning organizations to complete an I-70 Commuter Transit Feasibility Study connecting Kansas City, Lawrence and Topeka.

• I-70 Express Bus (east) — Work with MoDOT, transit agencies, and local communities to plan and integrate high-capacity express transit services in this corridor.

Continued Inter-City Analysis
• Track and Evaluate Intercity Origin-Destination Connections By Travel Mode
  o Passenger service schedules
  o Patronage of passenger service
  o Commute corridors/commute sheds
  o Expand regional transit services to intercity transportation facilities

• Evaluate Traveler Information Systems by Mode Related to Intercity Connections
  o Track passenger service schedules by travel mode
  o Evaluate patronage of passenger service by origin-destination of travel mode
  o Implement system enhancements
  o Integrate economic impact analysis
  o 511
  o Kansas City Scout
  o Operation Green Light
  o RideShare
  o C-Town Improvement Project

• Track Condition and Congestion Dynamics of Intercity Connections
  o Service audit to Kansas City bus stations, rail stations and commercial airports
  o Audit most direct and efficient corridors/routes to these facilities

Potential Key Intercity Connectivity Performance Measures
• Level of transit service to intercity transportation facilities
• Transportation costs by mode for intercity travel
• Vehicle miles traveled (VMT)
• Vehicle occupancy by mode
• Carbon Dioxide emissions
• Multimodal options
• Trip length
• Percent of lane miles congested
• Capacity
• Travel-time index
• Average travel speed
• On-time performance of travel activity by mode
• Percent of traffic signals coordinated
• Freeway incident duration
• Regional commute time