



FINAL REPORT

July 2006

Submitted to



Submitted by

URS

700 South Third Street
Suite 600
Minneapolis, MN 55415



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Submitted to
Bi-State Regional Commission
1504 Third Avenue
P.O. Box 3368
Rock Island, IL 61204

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Suite 600
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I. INTRODUCTION

A. Overview

The Cities of Bettendorf and Davenport, with the assistance of the Bi-State Regional Commission (Bi-State), employed a study to identify potential transit alternatives that would improve transportation mobility for residents, employees and visitors. The Iowa Quad Cities Transit Alternatives Analysis was a locally managed study. Its purpose was to identify and examine alternatives for providing public transit service within the Iowa Quad Cities, considering connections to the Illinois Quad Cities, in order to accommodate improved flow of transit between the Cities of Bettendorf and Davenport and the Illinois Quad Cities. For example, the Study considered how transit connections could be improved between population centers in the Iowa Quad Cities and major employers such as Genesis Health System, Trinity Regional Health, Tyson Fresh Meats, Alcoa, Deere and Company, and the Rock Island Arsenal.

B. Study Management

This Alternatives Analysis was directed by a Study Executive Committee (SEC), comprised of elected officials of Bettendorf and Davenport. Additionally, the SEC was advised by a technical sub-committee composed of the following members:

- Bettendorf Public Works Director
- Bettendorf Transit Manager
- Davenport Public Works Director
- Davenport Transit Manager
- Iowa Department of Transportation (DOT) – Office of Public Transit
- Federal Transit Administration (FTA) – Region 7 (ex-officio, non-voting representative).

The SEC also appointed a Study Advisory Committee (SAC) that advises the SEC on project milestones, technical details and study results, as well as ensured compliance with federal procedures for this FTA- funding study. The SAC conveyed project information to the SEC as needed. The SAC represented these groups:

- Public Works and transit staff from Bettendorf and Davenport
- Other area transit providers such as the Illinois MetroLINK and River Bend Transit
- Chamber and industry development
- Railroad
- Iowa DOT
- FTA Region 7.

Bi-State administered the Study for the Cities of Bettendorf and Davenport.

C. Goals and Objectives

The following study goals were developed through the analysis of current and projected demographic and travel demand data. This information included 2000 U.S. Census data, both Bi-State's 2025 and 2035 travel demand model and operating data for Bettendorf Transit and Davenport CitiBus. This analysis was then supplemented with the transportation issues identified by the Study Advisory Committee (SAC), the public through open houses held in January 2005, project stakeholders through focus group meetings in March and April 2005, and interviews with Bettendorf Transit and Davenport CitiBus staff in January 2005. The goals and objectives were refined with the SAC and approved on August 2005.

Transportation and Mobility

- Create transportation improvements that add people-carrying capacity as necessary, minimize operating costs and improve operating efficiency.
 - Provide an expanded range of transportation choices.
 - Proposed improvements should augment the Quad Cities' transportation system and make public transit a more attractive option.

- Expand opportunities for all transit users to move freely to, through and within the Quad Cities.
- Proposed improvements should be fundable and affordable.

Economic Opportunity and Investment

- Support investments in infrastructure, business and community that sustain the heart of the Quad Cities.
 - Promote a reliable transit system that supports an efficient, effective land use development pattern in major activity centers, minimizes parking demand and facilitates the highest and best use of adjacent properties.
 - Provide employers with the confidence that their employees have reliable options to travel to and from work.

Communities and Environment

- Facilitate the preservation and enhancement of neighborhoods in the Quad Cities.
 - Acknowledge the individual character and aspirations of each place served, and of the Quad Cities as a whole.
 - Support regional goals for cleaner air and water, more efficient energy use, and a safer and healthier environment.

II. PURPOSE AND NEED

The Purpose and Need for transit improvements in the Iowa Quad Cities are based on the Study goals and objectives in the preceding section and on analyses of existing and current transportation and socioeconomic information, supplemented by discussions with members of the SEC, SAC and the public. These analyses are presented in Sections III and IV of this report.

The Purpose and Need is a requirement of the Federal Transit Administration (FTA), who provided a majority of the funding for this Study.

A. Transportation and Mobility

The Transportation and Mobility goal and its associated objectives would address the following transportation problems in the Quad Cities:

- Long Transit Travel Times

With three transit providers serving the Quad Cities, traveling across the Mississippi River and across municipal lines always entails a transfer to another system. Transfers increase travel time and long travel times are a deterrent to increasing ridership. For example, based on current route schedules, while the travel time from Duck Creek Mall to the Belmont Campus of Scott Community College is only 10 to 15 minutes, traveling from Davenport to Scott Community College would easily double this trip time. In addition, some routes serve areas where there are no boardings or alightings, further increasing travel times and ultimately decreasing route efficiency. For example, survey data as well as interviews with staff and drivers indicated little to no activity along the downtown loop for CitiBus.



- Projected Increase in Roadway Congestion

According to the *QC 2025 Long-Range Transportation Plan for the Quad City Area*, the mileage of roadway segments operating at or above their traffic capacities is expected to increase in 2025. For example, State Street/U.S. Highway 67 between Bettendorf and LeClaire will be congested in 2025.

Similarly, I-80 and 53rd Street in Davenport will be congested, along with East River Drive between the Arsenal Bridge and Jersey Ridge; West Locus between I-280 and Wisconsin Avenue; and most of Middle Road in Bettendorf between I-74 and I-80. Congestion also typically occurs at the Mississippi River crossings during peak travel periods. Increasing transit usage could reduce traffic volumes and congestion at some of these locations.

- **Complex Fare Structure**

While all three transit providers generally offer half-fare to senior, disabled and youth patrons, they charge three different prices for their services. The adult fare for fixed route service is \$0.60 for Bettendorf Transit, \$0.75 for CitiBus and \$0.80 for MetroLINK. The monthly QC PassPORT addresses this issue; however, although over 70 percent of survey respondents using Bettendorf Transit and CitiBus indicated their awareness of the monthly pass, only approximately 20 percent of the same respondents used it to pay for their bus fare. One reason for this may be that some patrons fear that they could not use the entire cash value of the pass within a month.

- **Insufficient Evening and Weekend Service**

According to the transit user survey, over 80 percent of Bettendorf Transit respondents took the bus to work, school or other reasons that included work and 66 percent of CitiBus respondents took the bus for the same reasons. Some transit patrons work non-traditional hours – they work shifts that begin or end after 5:30 PM or 6:00 PM, when Bettendorf Transit and CitiBus end their service. Other patrons would like to use the bus for social and recreational purposes after these hours. Under both circumstances, limited choices exist for these patrons – coordinate a ride with friends or family or take a taxi, which is expensive and scarce in the Quad Cities.

- **Lack of Bus Stop Amenities**

The user survey also asked Bettendorf Transit and CitiBus patrons to rank various aspects of each system. In both surveys, the lowest rated category was the availability of benches, shelters and signage at bus stops. This issue detracts from patron comfort and security when using the system. For example, the transit hub at Duck Creek mall is in the middle of a parking lot. There is no apparent waiting



Duck Creek Mall transit hub.

area for patrons, little additional lighting or signs that indicate that this area of the mall is a significant transit facility, given connections between Bettendorf Transit and CitiBus.

- **Patrons Do Not Know Where to Get Information**

Riding the bus is daunting enough in an environment that is dominated by single-occupant vehicles. Not knowing where to get transit information, whether related to schedules, routes or fares would make riding the bus even a greater challenge. Having three transit providers in the Quad Cities can also contribute to the confusion. For example, if a trip requires a transfer to another transit system, does the patron call both transit providers for information? Another example is the low use of the QC PassPORT indicated in the December 2004 transit user survey. The monthly pass has a high potential for simplifying fare payment between different transit systems; however, some survey respondents indicated that they did not know where to purchase one or for how long the pass is valid.

- **Potential Growth in Transit Patronage**

The Bi-State Regional Commission's 2025 travel demand model indicate that access to transit would decrease in year 2025¹. The model estimates that in 1998, 38 percent of all trips had access to transit assuming a one-quarter mile walking distance. In 2025, this figure is expected to decrease to 31 percent of all trips. This decrease is attributed to declining household size and significant growth in areas that currently do not have access to transit service.

B. Economic Opportunity and Investment

The Economic Opportunity and Investment goal would address the following economic needs in the Iowa Quad Cities:

- **Strong Employment Base**

The Quad Cities are home to major employers, many of whom are national firms. They include Deere and Company, the Rock Island Arsenal, Genesis Health System, Trinity Regional Health System, Tyson Fresh Meats and Alcoa.

¹ At the time of the writing of the Purpose and Need, Bi-State's travel demand model was being updated to include a forecast year of 2035. Therefore, the published 2025 forecasts were cited in Technical Memorandum #3: Purpose and Need.

According to the Quad City Development Group, these six companies currently have over 26,000 employees. The current trend shows an aging population in the area. To sustain the area's economy, it is important to provide alternative means of transportation to and from work to attract and sustain employees. Presently, there are limitations to the current transit service that should be addressed to ensure businesses that their employees have reliable options to travel to and from work.

The Quad Cities also have a significant student population that educates and trains current and future workers. St. Ambrose University, a coeducational, liberal arts school located in Davenport, currently enrolls 3,500 students. St. Ambrose's projected student enrollment will increase to 4,000 within the next decade. The Belmont Campus of the Scott Community College in Bettendorf enrolls 4,000 students. Students may take classes at the main campus in Bettendorf, at two locations in downtown Davenport, or at the campus located north of Davenport off of I-80.

- **Reliable Transportation Options**

A transit trip to the Rock Island Arsenal from downtown Davenport requires two transfers: from CitiBus Route 7 (Bridgeline) to MetroLINK Route 10 (Red Route) to MetroLINK Route 80 (Arsenal Route). Assuming a trip in the morning peak hour that originates from the Downtown GTC in Davenport, the total trip time is approximately one hour and 15 minutes. This travel time assumes that timely connections at the District and Centre Stations in Rock Island and Moline, respectively, are made. Morning service between Centre Station and the Arsenal is only from 5:45 AM to 8:00 AM. Afternoon service is from 2:45 PM to 4:45 PM. The total distance between the Davenport GTC and the Arsenal is approximately three miles from the west end of the island and six miles from the east of the island. Undoubtedly, this would be an easy trip to make by private vehicle, but onerous by bus. Given the number of persons employed by the Rock Island Arsenal, there could be a significant potential in additional transit patrons that are currently untapped because of existing limitations in transit service.

The Belmont Campus of Scott Community College (current enrollment of 4,000 students) in Bettendorf is another popular destination in the Quad Cities. Depending on the trip origin within Davenport, travel time to Scott Community College can take between 30 minutes and one hour. The boarding and alighting counts performed for this study along with focus group and driver and staff interviews identified this long travel time as a characteristic of the existing transit system that should be improved.

- Efficient Land Use Development Patterns

Transportation opportunities to cross the Mississippi River continue to be limited, as indicated in the *QC 2025 Long Range Transportation Plan* and *Quad Cities Metropolitan Area Mississippi River Crossing Study*. In the peak hour, traffic volumes on both the Arsenal and I-74 bridges exceeded their capacities. This condition is anticipated to continue in 2025 assuming no additional river crossing is constructed, and would continue to limit movement of employees and products between the two sides of the Quad Cities and beyond.

As the population in the area ages and employers see the need to draw human resources from the outlying areas of the Quad Cities, transit improvements such as park-and-ride lots and expanded bus service may be a way to transport employees from these areas.

Socioeconomic projections currently available from the Bi-State Regional Commission indicate that population and employment will continue to be concentrated in the existing core of Bettendorf and Davenport. While much of the growth is expected to occur in outlying areas of the two cities – generally northwards, including the Kimberly Road and 53rd Street corridors – the downtown cores will continue to have the highest densities of population and employment.

C. Communities and Environment

The Communities and Environment goal would address the following community and environmental needs in the Iowa Quad Cities:

- Preserve Neighborhood Character

Neighborhood preservation and continuity are key elements for sustaining community life. Transportation investments need to be planned, designed and ultimately operated to enhance the community they serve. Within the study area and within the corridors themselves, many natural and cultural assets can be found. For example, within the Brady Street



and Harrison Street corridor in Davenport, one can find the Davenport City Hall, Palmer College, St. Ambrose University, Vander Veer Park and Junge Park/Duck Creek Park. These neighborhood assets should be protected and preserved from transportation projects and their impacts.

- Provide A Healthier Environment

A reliable and efficient transit system in the Iowa Quad Cities could stem the ever-increasing demand for additional roadways, parking facilities and fuel. Right-of-way and funds required for roadway construction could be limited to preserve and enhance neighborhoods in the Quad Cities. Demand for fuel could be decreased, reducing emissions and resulting in cleaner air and water and a healthier environment overall. Transit vehicles that use clean fuels such as clean diesel and electricity can further reduce air pollution and noise to enhance livability within the Iowa Quad cities.

III. TRANSPORTATION PROJECT INVENTORY

A. Study Area

The Quad Cities metropolitan area is located along the Mississippi River in eastern Iowa and western Illinois. The Quad Cities are located approximately 165 miles west of Chicago and midway between Minneapolis to the north and St. Louis to the south. The Quad Cities' year 2000 population within 300 miles is 37.4 million, the largest west of Chicago. This figure is comparable to that of St. Louis (34.9 million), Kansas City (16.9 million), and the Minneapolis/St. Paul area (15.2 million). These three mid-size cities have a complement of transit services that include fixed route bus, Bus Rapid Transit (BRT) and Light Rail Transit (LRT).

The Quad Cities include the Cities of Bettendorf and Davenport in Iowa, and Moline and Rock Island in Illinois. They also include Scott and Muscatine Counties in Iowa and Rock Island, Henry and Mercer Counties in Illinois. The total land area is 2,708 square miles. According to the United States Census Bureau, the total population of the Quad Cities in year 2000 was 376,019. The most rapid growth in population appears to have occurred between 1960 and 1980, when population increased from 119,067 to 160,022.

The Quad Cities transportation system is made up of four interstate highways, five U.S. highways, 10 state highways, five railroads, one commercial airport and one general aviation airport. The Mississippi River carries significant commercial and recreational traffic. From Bettendorf and Davenport to Rock Island and Moline, there are three ways to cross the River: through I-74, the Government Bridge and the Centennial Bridge. The Government Bridge is the only direct connection between the Iowa Quad Cities (via Davenport) and the Rock Island Arsenal.

City of Bettendorf

The City of Bettendorf has an area of 21.4 square miles. Its year 2000 population is 31,275. Its population started to grow rapidly in the 1950s and 1960s, particularly with the opening of the Alcoa plant in the area in 1948. Between 1960 and 1980, Bettendorf's population grew two-fold. Its growth slowed between 1980 and 1990, but then increased again between 1990 and 2000. The median age of its population is relatively young – 38.7 years. The average household income for Bettendorf is \$66,620, significantly higher than the average for Scott County, Iowa and the nation.

City of Davenport

The City of Davenport has an area of 66 square miles and has a population of 98,359 (2000 Census), or 62 percent of the Scott County population. Davenport's population increased markedly early in the 20th century, when population exceeded 35,000 and the city's area increased to nearly eight square miles. The median age of Davenport's population is 33.6 years. The average household income for Davenport is \$45,944, lower than the average for Scott County, Iowa and the nation.

B. Transit Operations

Technical Memorandum #2: Existing Transit Conditions presented key information used in assessing the current Bettendorf and Davenport fixed route systems, including a discussion of operating and financial trends, demographic data and other information to evaluate system performance.

Transit service within the Quad Cities is provided by three separate entities. The fixed routes operated by Bettendorf Transit and CitiBus are illustrated in Figure 1.

- Bettendorf Transit
- CitiBus for the City of Davenport
- MetroLINK for the Illinois Quad Cities.

Figure 1
Transit Route Map



Bettendorf

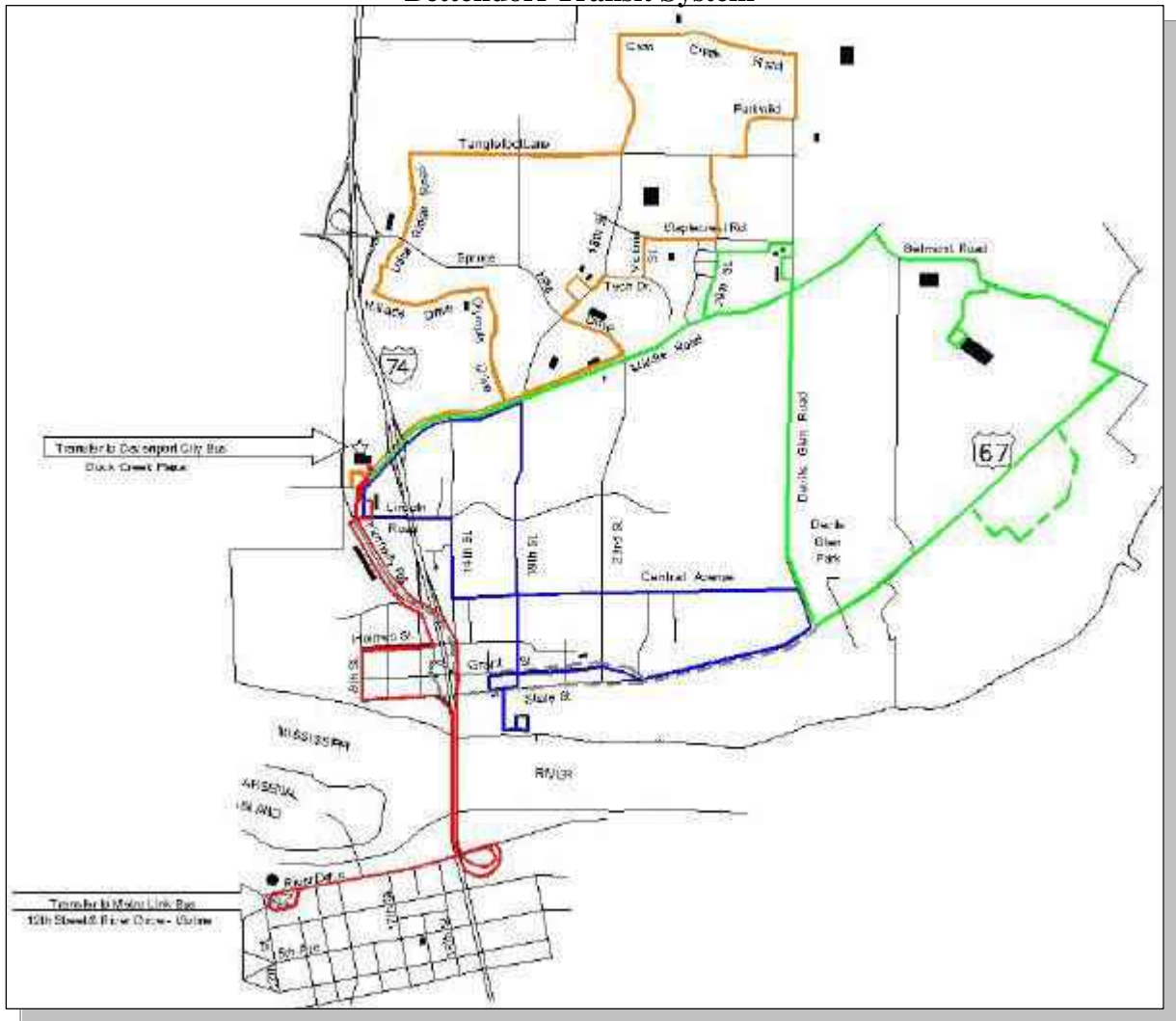
Figure 2 presents the Bettendorf transit map. Five routes operate in Bettendorf. Service is available every one-half hour from Monday through Friday from 6:00 AM to 6:30 PM, and every hour on Saturday from 8:30 AM to 5:30 PM, except on major holidays. River Bend Transit, under contract with the City of Bettendorf, provides Saturday service.

All Bettendorf routes meet at Duck Creek Mall in a “pulse” scheduling operation. (A “pulse” operation has all routes “meeting” at a common point at the same time.) In addition, the routes operate in a “loop” pattern, with vehicles traversing a route in either a clockwise or counterclockwise direction.

Table 1 presents key operating statistics for Bettendorf Transit based on fiscal year 2003-2004, which covers the period from July 1, 2003 to June 30, 2004:

- Bettendorf Transit served 470 riders per day using five buses.
- Route 4, which serves Scott Community College, had the highest number of riders per day (127) and number of riders per revenue hour (10.1).
- The system average number of riders per revenue hour was 8.6.
- Route 5 (53rd Street/Northeast) is a new route, which might explain its low ridership.

Figure 2
Bettendorf Transit System²



² Source: Bettendorf Department of Public Works.

Table 1
Bettendorf Transit Operating Statistics – FY 2003-2004

Route	Frequency (minutes)	Daily One- Way Trips	Daily Revenue Hours ¹	Vehicles in Operation	Daily Riders ¹	Riders Per Revenue Hour ¹
Route 1 (Bridge/Red)	30	49	12.6	1	101	8.0
Route 2 (North/Gold)	30	49	12.6	1	94	7.5
Route 3 (Riverfront/Blue)	30	49	12.7	1	111	8.8
Route 4 (Scott C.C./Green)	30	48	12.6	1	127	10.1
Route 5 (53rd St/Northeast/Purple) ²	30	48	12.1	1	36	3.0
Totals	N/A	243	62.7	5	470	8.6

Source: Bettendorf Transit data as compiled by TranSystems.

¹ Data represents daily average from July 2003 to June 2004

² Data for 53rd Street Route is from July to November 2004

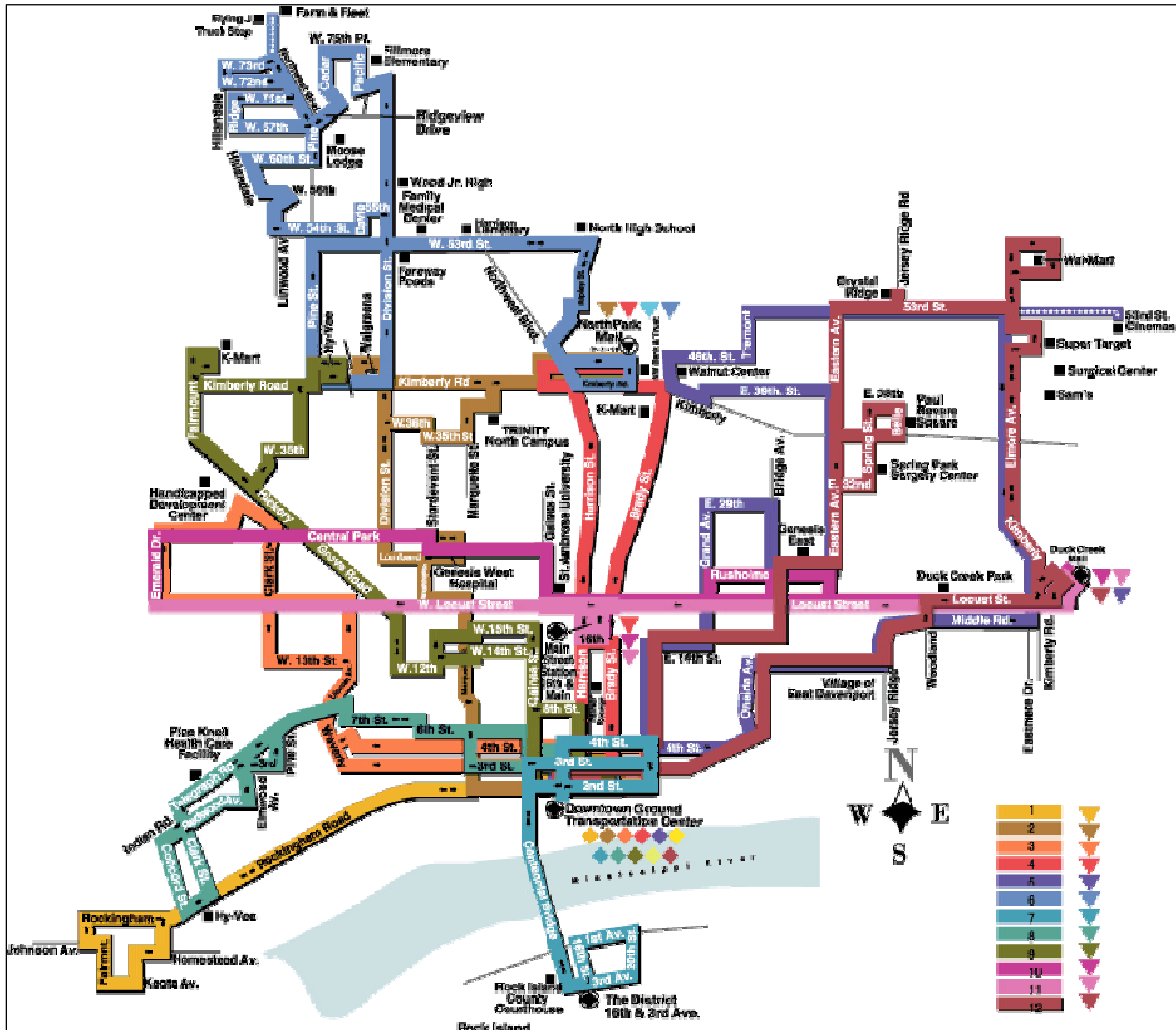
Davenport

Figure 3 shows the CitiBus transit map. Fifteen routes operate in Davenport including the tripper routes and variations of Routes 5 and 10. Service is available Monday through Friday from 5:30 AM to 6:00 PM, and on Saturday from 9:00 AM to 6:00 PM, except on major holidays. Service on Saturdays is provided for a shorter period of time, and three routes do not operate on Saturdays. Although most Davenport routes go through the downtown Ground Transportation Center (GTC), they do not operate on a “pulse” system. CitiBus is owned and operated by the City of Davenport.

Table 2 presents key operating statistics for CitiBus based on fiscal year 2003-2004, which covers the period from July 1, 2003 to June 30, 2004:

- CitiBus served 2,550 riders per day using 17 buses.
- Route 4, which operates on Brady and Harrison Streets, had the highest number of riders per day (530) and one of the highest number of riders per revenue hour (20.9).
- Route 7 (Bridgeline) had the highest number of riders per revenue hour at 21.0.
- The system average number of riders per revenue hour was 15.0.
- Similarly, Route 53 (East 53rd Street) was a new route, which could explain its low ridership.

Figure 3
CitiBus Transit System³



³ Source: City of Davenport.

Table 2
CitiBus Operating Statistics – FY 2003-2004

Route/Name	Frequency (minutes)	Daily One- Way Trips	Daily Revenue Hours ¹	Vehicles in Operation	Daily Riders ¹	Riders Per Revenue Hour ¹
Route 1 - Rockingham	40	36	11.8	1	157	13.3
Route 2 - Marquette	30	39	19.1	2	139	7.3
Route 3 - Fairgrounds	60	26	12.5	1	115	9.2
Route 4 - Brady St/Harrison St	30	52	25.4	2	530	20.9
Route 5			18.8	2	213	11.3
5A - NorthPark	60	25				
5B - Kimberly Downs	60	12				
Route 6 - Ridgeview	60	24	12.3	1	106	8.7
Route 7 - Bridgeline	30	54	13.4	1	281	21.0
Route 8 - Telegraph	40	36	11.9	1	168	14.1
Route 9 - Hickory Grove	60	24	11.7	1	137	11.7
Route 10			24.7	2	396	16.1
10 - Central Park	60	25				
10 - Locust	60	25				
Route 11 - Route 61	30-60	22	6.0	1	78	12.9
Route 12 - East Davenport	60	25	12.1	1	156	12.9
Route 53 ² - East 53rd St	60	25	12.2	1	75	6.1
Totals	N/A	450	191.9	17	2,550	15.0

Source: Davenport CitiBus data as compiled by TranSystems.

¹ Data represents daily average from July 2003 to June 2004

² Data for Route 53 is from July to September 2004

Transit Connections

Currently, transit connections between the Iowa and Illinois Quad Cities are provided by each of the three providers, summarized as follows:

- Bettendorf Transit Route 1 (Red Route) provides service at Center Station in Moline, Illinois. At Center Station, Bettendorf Transit passengers can transfer to the following MetroLink routes: 10, 20, 30, 57 and 80. Routes 10, 20, 30 and 57 generally operate from 5:30 AM to 9:00 PM on weekdays and from 7:30 AM to 5:30 PM on Saturdays. Route 80 to and from the Rock Island Arsenal only operates on weekdays during the morning and afternoon peak hours. Transfers from Bettendorf Transit to MetroLink are free and \$0.30 per passenger from MetroLink to Bettendorf Transit.

- Davenport CitiBus Route 7 (Bridgeline) connects to MetroLink service at The District station in Rock Island. At The District, CitiBus passengers can transfer to MetroLink routes 10, 30, 40, 53 and 60. These routes generally operate on weekdays from 5:30 AM to 9:00 PM and on Saturdays from 7:30 AM to 5:30 PM.
- MetroLink serves the Iowa Quad Cities on Sundays only via its Bridge Line route. Bettendorf Transit and CitiBus do not operate on Sundays. Transfers from CitiBus to MetroLink are \$0.05 per person and \$0.10 per person from MetroLink to CitiBus.

Transfer Survey

Transfer data was compiled for the Bettendorf and Davenport systems. Transfer data were collected in Davenport on December 16, 2004 and in Bettendorf on December 17, 2004. The most significant transfers in Davenport occurred to and from Routes 4 and 10, with transfers also occurring on Routes 2, 5, 7 and 12. The highest number of transfers between routes occurred from Route 4 to Route 10 and from Route 10 to Route 4 with 100 or more transfers in each case. All transfers from MetroLink occurred to Route 7 and most transfers from Bettendorf were to Route 10.

Bettendorf had most transfers issued from Davenport's Route 10. Within Bettendorf, the Riverfront route issued and received the most transfers. Transfers from MetroLink occurred to the Bridge Route and most transfers from Davenport were from Route 10.

Operating and Financial Trends

A key component in evaluating current service is to determine which routes are productive and efficient and those that require refinement. Several data are used to assess the relative success of a service: Ridership, productivity (riders per revenue hour), and operating cost per rider.

Ridership

From July 2001 to November 2004, monthly ridership for all three fare categories for the Bettendorf system was steady at about 10,000 boardings. This translated into approximately 120,000 annual riders. For Davenport, the sample day had about 1,800 riders for all five fare categories. The Davenport system carries approximately 750,000 annual riders.

The Scott Community College route had the highest ridership among the Bettendorf routes with nearly 3,000 monthly riders on average. With the exception of the new 53rd Street

route, each Bettendorf route had ridership over 2,000 monthly riders. Saturday ridership on the Bettendorf routes showed a downward trend. Davenport Routes 4 and 10 had the highest ridership, with nearly 13,000 monthly riders and 9,000 monthly riders, respectively. Weekday ridership for Routes 4 and 10 was approximately 500 and 400, respectively. Saturday ridership for Routes 4 and 10 was approximately 300 and 200, respectively.

Ridership per Revenue Hour

Another measure of efficiency is “ridership per revenue hour.” While ridership is a good indicator of how well a route is being used, dividing the number by hours of service provided on the route weighs the service quantity put on the street versus its use. Typically, routes with high ridership per hour are well-used and have the least cost per rider. Conversely, routes with low ridership per hour are poorly used and have the highest costs per rider.

Operating Cost

Table 3 shows the Bettendorf operating cost, revenue and cost per rider information for July 2001 through June 2004. Table 4 shows Davenport operating cost, revenue, and cost per rider information for October 2002 through September 2004. Operating cost per rider is important because it shows the relative financial commitment being made and can dictate where resources are directed. As can be seen, as a system, Bettendorf bus service cost about \$6.00 per rider and Davenport bus services is about \$5.00 per rider.

Table 3
Bettendorf Cost per Rider

Fiscal Year¹	Operating Cost	Passenger Revenue	Revenue Hours	Cost per Hour	Riders	Cost per Rider	Subsidy per Rider
FY02	\$638,497	\$34,923	12,862.56	\$49.64	127,396	\$5.01	\$4.74
FY03	\$683,466	\$31,214	12,913.20	\$52.93	120,640	\$5.67	\$5.41
FY04	\$789,881	\$30,366	12,949.84	\$61.00	110,930	\$7.12	\$6.85

¹ Fiscal year is from July 1 through June 30.

Source: Bettendorf Transit data as compiled by TranSystems.

Table 4
Davenport Cost per Rider

Fiscal Year ¹	Quarter	Operating Cost	Passenger Revenue	Revenue Hours	Cost per Hour	Riders	Cost per Rider	Subsidy per Rider
FY03 ²	1	\$913,848	\$58,499	12,829.85	\$71.23			
	2	\$857,909	\$70,658	13,007.29	\$65.96	131,380	\$6.53	\$5.99
	3	\$849,671	\$73,695	12,829.85	\$66.23	190,426	\$4.46	\$4.07
	4	\$939,832	\$73,279	13,007.29	\$72.25	184,776	\$5.09	\$4.69
		\$3,561,260	\$276,131	51,674	\$68.92	506,582	\$5.36	\$4.92
FY04	1	\$904,830	\$71,851	13,007.29	\$69.56	176,367	\$5.13	\$4.72
	2	\$857,505	\$83,440	13,007.29	\$65.92	190,693	\$4.50	\$4.06
	3	\$801,164	\$78,491	13,007.29	\$61.59	201,903	\$3.97	\$3.58
	4	\$799,947	\$80,881	13,184.73	\$60.67	197,027	\$4.06	\$3.65
		\$3,363,446	\$314,663	52,207	\$64.43	765,990	\$4.39	\$3.98
FY05	1	\$1,021,855	\$90,727	13,859.28	\$73.73	187,901	\$5.44	\$4.96

¹Fiscal year is from July 1 through June 30.

²FY03 Riders, Cost per Rider and Subsidy per Rider is based on Quarters 2-4 only.

Source: Davenport CitiBus data as compiled by TranSystems.

On/Off Counts

One of the most important considerations in assessing system productivity was to conduct a bus stop boarding and alighting count to determine where activity occurs along each transit route. An on/off count was conducted on December 14, 15, and 16 and on Saturday December 11, 2004. The December counts were supplemented by additional counts during the week of March 1 to March 5, 2005. Appendix B, Technical Memorandum #2: Existing Transit Conditions, presents details of the on/off counts, including charts.

In general, major stops along the routes were at major activity centers such as Northpark Mall, Joewan, Isle of Capri, and Scott Community College. Transfer locations such as the Davenport Ground Transportation Center, also recorded relatively high boardings and alightings.

Table 5
Bettendorf Summary of On/Off Counts

Route	Description
Route 1/Bridge (Red) Route	Major stops: Joevan, Metro Center station in Moline.
Route 2/North (Gold) Route	Major stops: Joevan, 18th Street/Tanglefoot Ln. No activity along Crow Creek.
Route 3/Riverfront (Blue) Route	Major stops: Joevan, Isle of Capri.
Route 4/Scott Community College (Green) Route	Major stops: Joevan, Scott Community College, 29th/Dundee Ln.
Route 5/53rd Street/Northeast (Purple) Route	Major stops: 53rd Street Cinemas and Joevan. Saturday – No activity along the entire route

Table 6
Davenport Summary of On/Off Counts

Route	Description
Route 1/Rockingham	Activity along the entire route. Major stops: Rockingham/Concord, Rockingham/Fairmont, the GTC.
Route 2/Marquette	Activity along most of the route. Major stops: NorthPark Mall, Genesis West Hospital, the GTC.
Route 3/Fairgrounds	Major stops: 18th/Clark, Locust/Emerald, Locust/Michigan, the GTC. Saturday showed little ridership along the entire route.
Route 4/Brady Street/Harrison Street	Very high activity along the route. Major stops: Main/17th, Main /Locust, NorthPark Mall, Northwest Blvd/Village Mall, Harrison /17th, Harrison/4th, the GTC.
Route 5A/NorthPark	Sparse activity along most of the route. Major stops: NorthPark Mall, Spring/ 38 th , the GTC.
Route 5B/Kimberly Downs	Little ridership. Major stops: 39 th /Davenport, Kimberly/Spring, the GTC.
Route 6/Ridgeview	Major stops: NorthPark Mall, 53 rd /Ripley, North High School, Division/53rd, Division/55th, Hillandale/73rd, Hillandale/72 nd , Division/59th. Saturday showed very limited activity along the entire route.
Route 7/Bridgeline	Activity along the entire route. Major stops: the GTC, 4 th /Harrison, 3 rd /Ripley, Rock Island Terminal.
Route 8/Telegraph	Major stops: 6 th /Vine, Telegraph/Cedar, 3rd/Ripley, Rockingham/Concord, the GTC. Saturday had little ridership.
Route 9/Hickory Grove	Limited activity along the entire route. Major stops: Hickory Grove/Hillandale, K-mart, Hy-

	Vee/Drug Town, the GTC.
Route 10/Central Park	Activity along most of the route. Major stops: 16 th /Main, Main/Locust Street, Jovean.
Route 10/Locust	Major stops: 16 th /Main, 17 th /Main, Main/Locust, Locust/Michigan, Jovean. Activity along most of the route.
Route 61/Route 11 Tripper	Major stops: APAC, Goose Creek Americana Park, NorthPark Mall.
H.D.C. Tripper	Major stops: Hickory Grove/Hillandale, the GTC.
Route 12/53/East Davenport/East 53rd Street	Major stops: NorthPark Mall, Wal-Mart, Target, Jovean, the GTC.

Traffic Operations

Summary of QC 2025 – Long-Range Transportation Plan

At the time of the writing of Technical Memorandum #2: Existing Transit Conditions and Technical Memorandum #3: Purpose and Need, Bi-State was updating its travel demand model from 2025 to 2035 traffic forecasts. Therefore, the following description of existing and future traffic operations was based on Bi-State's 2025 model, which used a base year of 1998.

The following figures present the results of the travel demand model by Bi-State for year 1998 and 2025 (assuming no roadway improvements). Figure 4 presents traffic operations in 1998 on roadways included in Bi-State's travel demand model. Red segments denote roadways that are operating at or above their traffic capacities, including:

- Arsenal and I-74 bridges
- Davenport – Segments of U.S. Highway 6, U.S. Highway 61, Northwest Boulevard, Kimberly Road and Eastern Avenue, among several segments.
- Bettendorf – Segments of U.S. Highway 67 and Middle Road.



53rd Street and Elmore Avenue

Figure 4
1998 Level of Service

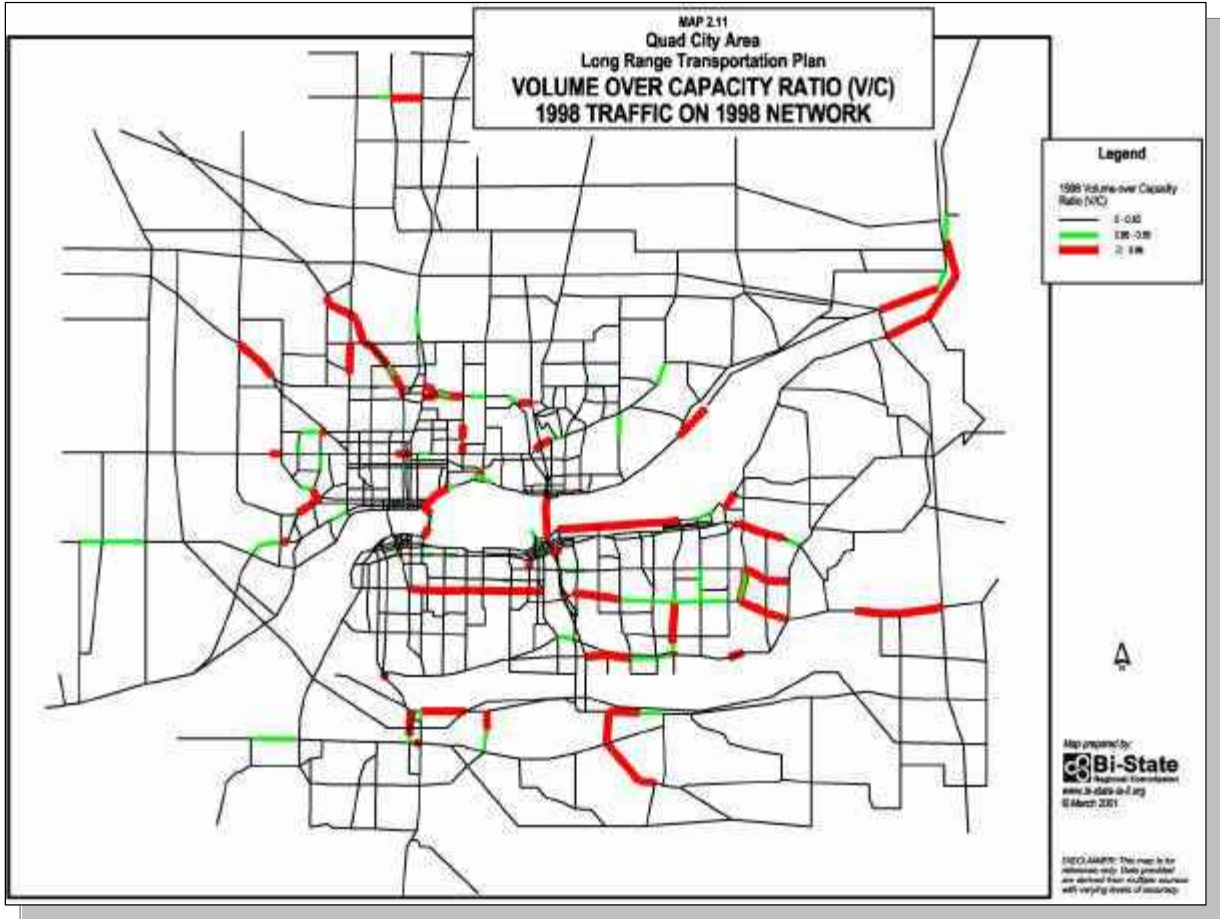
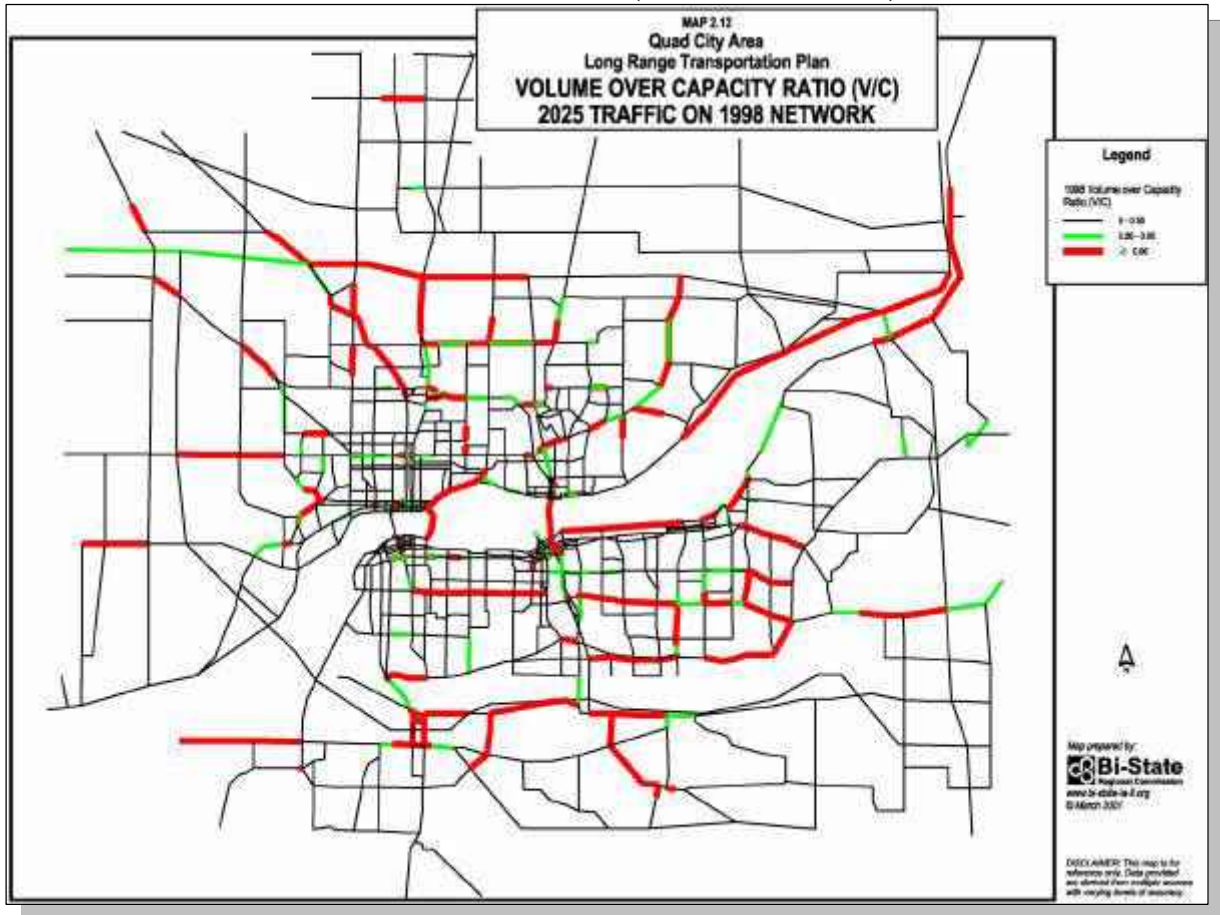


Figure 5 presents the expected traffic operations in 2025 on 1998 roadways as modeled by Bi-State. Similarly, red segments denote roadways that are operating at or above their traffic capacities. In 2025, the mileage of roadway segments operating at or above their traffic capacities is expected to increase:

- State Street/U.S. Highway 67 between Bettendorf and LeClaire will be congested in 2025.
- I-80 and 53rd Street in Davenport will be congested, along with East River Drive between the Arsenal Bridge and Jersey Ridge; West Locust between I-280 and Wisconsin Avenue; and most of Middle Road in Bettendorf, west of I-74 to I-80.

Figure 5
2025 Level of Service (No Build Network)

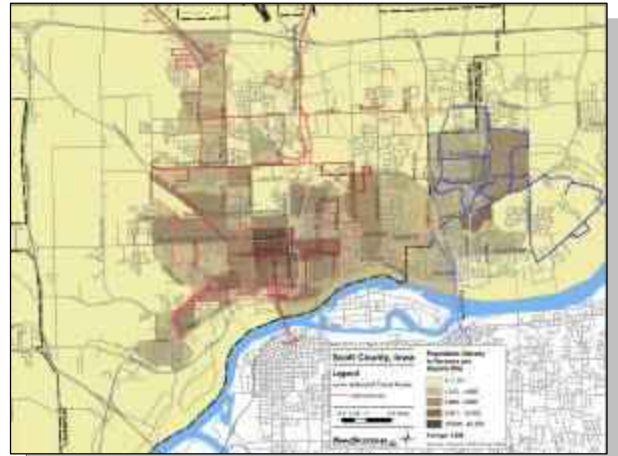


Demographic Analysis

Using Bi-State's GIS database, typical demographic data from the 2000 U.S. Census that indicate a need for transit were illustrated. This information was then overlain on the current route structure to show how well the current system serves traditional transit populations, and to help identify areas that need service. All data was displayed at the block group level.

Population Density

Generally, transit can better serve areas with higher population density. The densest parts of the Bettendorf and Davenport urban areas are at its core. For the most part, current routes serve high density areas. However, some routes serve the lowest density areas of the community.

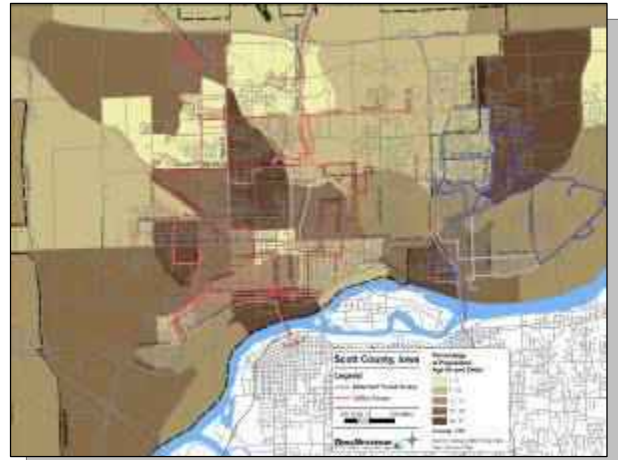


Housing Density

Similarly, higher concentrations of housing are more favorable are the conditions to generating transit ridership. In general, the current system serves such areas sufficiently.

Senior Citizen Population

Typically, senior citizens can be a good market for transit to serve. On average, 12 percent of the population of Scott County is senior citizens. The current route structure serves some areas with high percentage of senior citizens well, while other areas such as north central Bettendorf are not served.

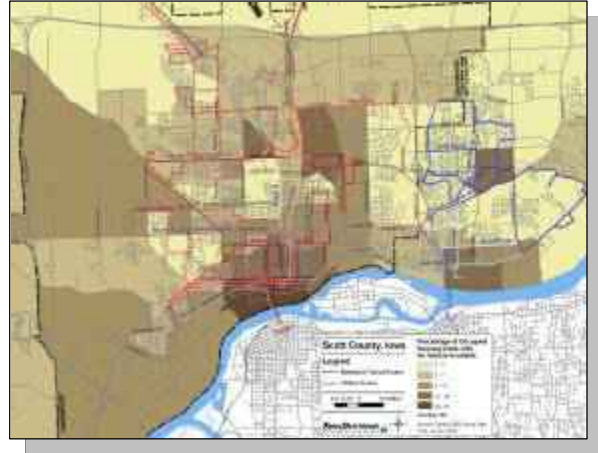


Household Income

Among the most important factors in determining transit need are household income and poverty status. This relationship is supported by the user survey data collected for this study (see Appendix B, Technical Memorandum #2: Existing Transit Conditions). For each community, the most frequently cited reason for using transit is the lack of a private vehicle. Automobile ownership and household income reflect an inverse relationship; automobile ownership is often used as a surrogate measure of income.

Vehicle Availability

“Automobile-less” housing units are good markets for transit because transit serves people with no other means of travel. Overall, 8 percent of the housing units in Scott County have no vehicle available. The areas with the most housing units without vehicles tend to be concentrated in the core of each city. Most of the current routes serve this core area.



Single-Parent Households

Single-parent households are selected because they represent, to some degree, lower income locations. As such, they are potential markets for transit service. The largest percentage of single parent households is in north central Davenport with medium concentrations at the core and along outlying portions of the community. Most of the current transit routes serve the core of the city and many of the routes connect with at least portions of the outlying areas as well.

IV. PUBLIC PERCEPTIONS

Part of making this Study a success was obtaining valuable feedback on transit issues from citizens in the community. The Study gathered feedback from the public, various stakeholders, businesses and institutions within the Quad Cities regarding their perceptions of the quality of transportation, specifically transit service. The methods used to obtain feedback included the following:

- Regular Study Advisory Committee meetings, which included management and staff of Bettendorf Transit, Davenport CitiBus, MetroLink, the Iowa DOT, Bi-State Regional Commission, and Cities of Bettendorf and Davenport
- Interviews with staff and drivers of Bettendorf Transit and Davenport CitiBus
- On-board survey of Bettendorf Transit and CitiBus patrons
- Four open houses, two of which were conducted at the beginning of the Study on January 2005 and another two meetings towards the end of the project on December 2005
- Three focus group meetings with businesses and institutions in the Iowa Quad Cities including Bettendorf Schools, Scott Community College and St. Ambrose University.

The public perceptions obtained from these methods also serve to strengthen the conclusions of the analyses of demographic, operational and ridership information.

This section of the final report presents a summary of the Public Involvement efforts undertaken by the project sponsors and consultants to actively share hear and document community thoughts regarding the Iowa Quad Cities Transit Alternative Analysis.

A. Study Advisory Committee

A questionnaire was distributed to the Study Advisory Committee prior to the December 15, 2004 meeting. The following is a summary of Committee members' responses:

- What do you think are the most significant transportation issues in the Quad Cities?
 - Making transit travel time competitive with auto travel time.

- Transit should serve senior citizens.
- Traffic congestion at river crossings.
- Shopping centers reduce linked trips, which result in increased vehicle miles of travel.
- Downtown employment has not been used to increase transit use.
- Traffic congestion is not a regional problem. There are selected recurring congestion problems, but the locations are limited in scope (e.g. when Alcoa lets out). River crossings are the more significant congestion points.
- Characterize the quality of transit service:
 - Rated 5 on a scale of 0 to 10, with 10 representing “excellent.” Two Committee members further described transit service as “okay.”
 - Transit in the Quad Cities fulfills a social need.
- Most significant problems with existing transit service:
 - Not convenient.
 - Most routes travel to/from the downtown, which is not as significant of a destination.
 - Lack of connectivity.
 - Too many transfers required.
 - Transit has not been marketed as a potential economic development tool.
 - Transit is not incorporated into the planning process.
- Most promising solutions:
 - Use existing rail corridors as transit connectors for development areas.
 - Reintroduce trolleys as an enhancement for economic development.
 - Improve the flexibility of service.

- Get more private entities and businesses involved in transit promotions.
- Increase system funding (the current system is woefully underfunded).
- Complete a comprehensive analysis of the system, which has not been completed in 20 years.
- Increase system advertising.
- Incorporate/promote transit as a development tool by providing incentives for developing along a transit line (disincentives for developing away from a line).
- Cross-market services. Social service agencies do not seem to think about transit as a part of their service portfolio.
- Revise routes to increase the 53rd Street connectivity.
- There needs to be seamless travel between the three systems (from the user side) – Bettendorf Transit, CitiBus and MetroLink.

B. Staff and Driver Interviews

As part of the review of existing conditions, the drivers and staffs of the Bettendorf and Davenport systems were interviewed. The purpose of the interviews was to determine the service issues facing the systems. As the drivers and staff interact with the riding customers and operations on a daily basis, their perspective was vital to providing a pragmatic dimension to the foregoing statistical analysis.

Bettendorf

The Bettendorf staff and drivers were interviewed on January 26, 2005 at the Bettendorf Public Works building located on Devil's Glen Road. Drivers representing morning and afternoon shifts were each interviewed in two separate groups. Two members of the Bettendorf staff joined one of the meetings and presented their views as well.

Key issues raised during the interviews for Bettendorf Transit were:

- Need to improve transfers/connections to Davenport buses at Duck Creek Mall for Routes 12/53 and in Moline for the Bridge Street route
- Move the focal point of the routes to 18th Street and Spruce Hills Drive when Duck Creek Mall reconstruction is completed.
- Running time problems for Route 4 (Green/Scott Community College),
- Areas of low ridership on Route 2 (Gold/North) near Crow Creek Road, 29th Street and Tanglefoot Lane and 29th Street and Victoria Street.
- Consider a half-fare version of the passport
- Extend bus service to the Dollar Store at 13th Street near Grant Street.

Davenport

Two separate interviews were conducted for the Davenport system, first with key staff of CitiBus, including the general manager, then with drivers who volunteered to make comments. Both sessions were held on January 27, 2005.

Key issues raised by drivers included the lack of riders in the downtown loop, the need for better east-west connections on Kimberly Road, and the need for better transfer connections between Route 12 and Bettendorf Route 5. Running time issues raised included the need for at least 5 minutes of recovery time in the schedules, tight running time issues for Routes 2 and 10, excess time for Route 7, and running time problems for routes crossing Kimberly Road.

Staff raised issues including:

- Need for a “school in” and a “school out” schedule (which changes service levels depending on whether public schools are in session)
- Need for better east-west connections on Kimberly Road
- Provision of service to the Jersey Ridge area, possibly with demand response

- Unproductivity of the downtown loop
- Running time issues with Route 10
- Possibly moving the second bus on Saturdays from Route 2 to somewhere else such as Route 11.

C. On-Board Survey

A transit user survey was conducted in December 2004 to gather input about transit issues in the community. The survey was designed with input from Bi-State, Bettendorf Transit and CitiBus, to address the following subjects:

- Demographic characteristics of fixed-route riders
- Origins and destinations of individuals using the service
- Reasons individuals use the service
- Interest in various transit improvements.

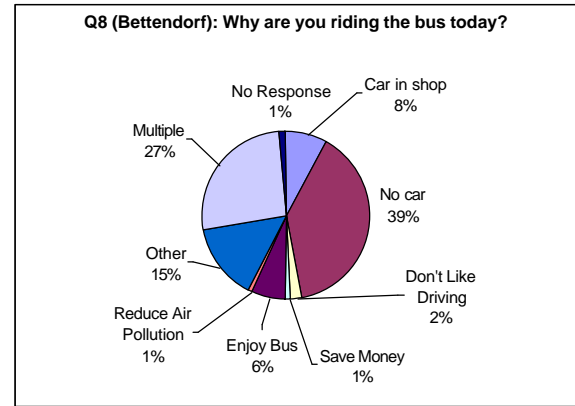
Technical Memorandum #2: Existing Transit Conditions (Appendix B) presents details of the on-board survey.

The survey instrument was distributed to passengers of Bettendorf Transit and CitiBus, who were also asked to only complete one survey. Major findings of the survey for each system are as follows:

- Bettendorf Transit
 - The survey responses came from all of Bettendorf routes, representing a good cross-section of riders.
 - Respondents generally rode the system from about 6:00 AM to 2:00 PM. Responses tended to be proportionally lower during traditional afternoon peak period of 3:00 PM to 6:00 PM.

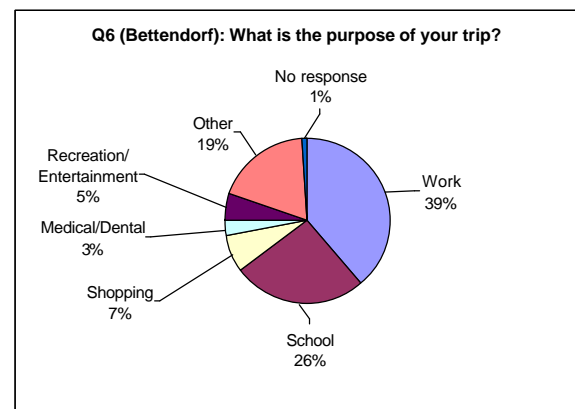
- Most riders (54 percent) walked to the bus. Forty percent transferred from another bus.

- The main trip purposes of riders were going to or from work (39 percent) and to or from school (26 percent). About 19 percent rode the bus for a variety of “other” trip purposes. These were typically multiple purposes most involving going to the library, with some for work and social reasons.



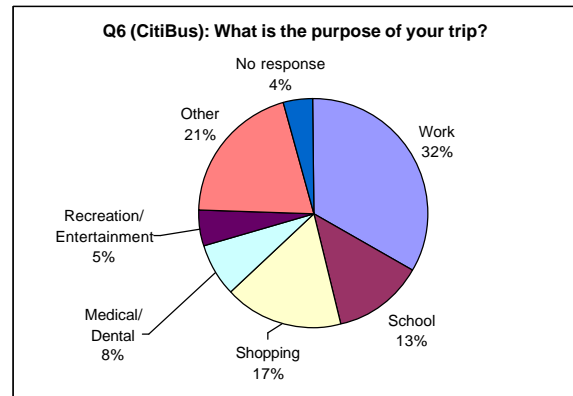
- Thirty-nine percent of respondents rode the bus because they did not have cars. Twenty-seven percent said they ride for multiple reasons which generally included “not having a car.” “to save money,” or “don’t like to drive.”
- Survey respondents (57 percent) indicated that they rode the bus more than five days per week. Another 13 percent ride 4 or 5 days per week.
- Eighty-two percent of the respondents said they know about the PassPORT monthly pass.
- Almost half (42 percent) of bus riders said they paid cash. Eighteen percent of riders used a monthly pass with only 8 percent said they used a transfer. The use of transfers is lower than what is indicated earlier about how people got to the bus. This contradiction suggests that it is likely that respondents do not see transfers as a fare payment mechanism for multiple-seat trips.

- Users were asked to rate nine different aspects of the transit system on a scale of 1 (very poor) to 5 (excellent). Eight of the items were rated 4 or higher. Users were particularly pleased with the helpfulness of the bus drivers, punctuality of the buses, and feeling secure on the buses. The lowest rated category, “availability of



benches, shelters and sign posts,” received 3.7 out of 5.

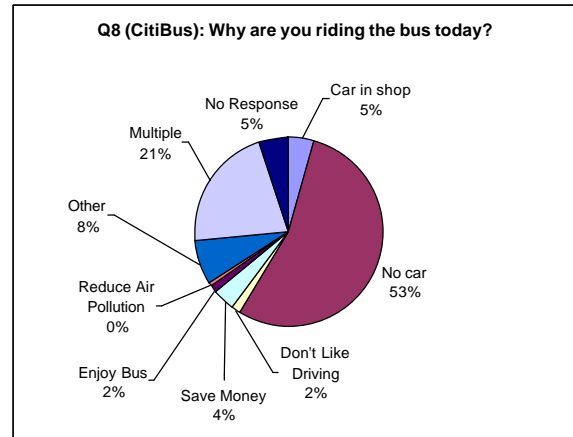
- 35 percent of the respondents thought that air pollution in the Iowa Quad Cities was either a serious or somewhat serious problem. The same proportion, 35 percent, either had no opinion, no response, or do not see air pollution as a problem.
- Respondents were slightly more male (51 percent) than female (46 percent).
- The mean age of the survey respondents was 38.1 years. The median age was 40.
- The annual household income of half (50 percent) of the respondents was under \$20,000.



▪ Davenport

- The survey responses came from all of CitiBus routes, representing a cross-section of riders.
- Respondents generally rode the system from about 9:00 AM to 4:00 PM. Responses tended to be proportionally lower during traditional peak periods of 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM.
- Most riders (57 percent) walked to the bus. Thirty-one percent transferred from another bus.
- The primary trip purposes of riders were going to or from work (32 percent) and going shopping (17 percent). About 21 percent rode the bus for a variety of “other” trip purposes. These were typically multiple purposes most involving work, school and or shopping reasons for riding.
- Fifty-three percent of respondents rode the bus because they did not have cars. Twenty-one percent said they ride for multiple reasons which generally included “not having a car” as well as “saving money” or “car in shop.”
- Survey respondents (46 percent) indicated that they rode the bus 4 to 5 days per week. Another 17 percent ride 2 or 3 days per week.

- Seventy-five percent of the respondents said they know about the PassPORT monthly pass.
- Over half (54 percent) of bus riders said they paid cash. 23 percent of riders used a monthly pass with only 3 percent who said they used a transfer. The use of transfers is lower than what is indicated earlier about how people got to the bus. This contradiction means it is likely that respondents don't see transfers as a fare payment mechanism.
- Users were asked to rate nine different aspects of the transit system on a scale of 1 (very poor) to 5 (excellent). Eight of the items were rated higher than 3. Users were particularly pleased with the helpfulness of the bus drivers, punctuality of the buses, and feeling secure on the buses. The lowest rated category, "availability of benches, shelters and sign posts," received a "2.3" out of 5.
- Thirty-four percent of the respondents thought that air pollution in the Iowa Quad Cities was either a serious or somewhat serious problem. 40 percent either had no opinion, no response, or do not see air pollution as a problem.
- Respondents were almost evenly male (45 percent) or female (49 percent).
- The mean age of the survey respondents was 36.4 years. The median age was 35.
- The annual household income of most respondents (62 percent) was under \$20,000.



D. Open Houses

Four public open houses were held during 2005, two in January and two in December, to gather input and promote dialogue with affected communities, residents and business interests. The ultimate outcome of these discussions was to identify a direction brought about by input from area residents that both individual citizens and leaders can use to establish a preferred alternative and consequently result in achieving the study's goals and objectives. These open houses have been documented in full in Appendix A, Technical Memorandum #1: Summary of Public Meetings.

The meetings were publicized using various methods:

- Newspaper – A paid advertisement announcing the open houses appeared in the *Quad City Times* for one week for both January and December meetings. The open houses also received media coverage from the *Quad City Times*. A press release was also submitted to the newspaper and an article appeared shortly after on its website.
- Newsletter – In addition to newspaper advertisements, news flyers were printed and distributed to Bi-State Regional Commission and the Cities of Bettendorf and Davenport. These newsletters were mailed to individuals throughout the Quad Cities. Groups who received the mailing included:
 - Regional Transportation Advisory Group
 - Job Access Reverse Commute
 - Study Advisory Committee
 - Quad Cities Air Quality Task Force
 - Disabled Transportation Advisory Group
 - Drug and Alcohol Testing Consortium.

The newsletters were also distributed on buses and made available at:

- Davenport Transit Center
- City Hall
- Libraries.

The newsletters were also distributed by electronic mail to members of the Chambers of Commerce. Extra copies of the newsletters were also made available at the open houses.

- Television – Upon completion of the meetings, the formal presentation given at the open houses was recorded in the Council Chambers at the Bettendorf City Hall for airing on public access channel. A tape of the presentation was mailed to the public information officer in Davenport as well for public broadcast.

The open house format provided citizens with an opportunity to view display boards, discuss issues with project staff one-on-one, and fill out a questionnaire and evaluation form. A two-page document detailing the information on the boards was provided to all attendees. A 20-minute formal slide show was also given that provided similar information to what was available on the display boards.

The following is a summary of the comments received at the public meetings:

January 2005 Meeting

Attendees of the meetings were asked to complete and return questionnaires to the project staff. The questionnaires requested both general and specific concerns related to transit problems in the Iowa Quad Cities, e.g. locations of these problems and potential solutions. Appendix A presents the complete listing of comments received at the meetings. Following is a summary of the most frequently cited responses:

- Most significant transportation problems in the Davenport-Bettendorf area:
 - Lack of transit service on weekday evenings and no service on Sundays
 - Duration of time it takes to get to one's final destination due to the number of transfers
 - Frequency of certain routes.
- Suggested potential solutions for the transit problems:
 - Altering the times of operation
 - Seeing a more collaborative effort between existing transit providers, which would in turn be more accommodating to riders by creating smoother transfer points

- The bus fair being universal
- Possibly revamping major routes to better encompass area businesses, colleges and universities.

Remarks varied when it was asked on how individuals felt about the potential transit alternatives discussed in the open houses. Five alternatives were presented to the public, but the options of Bus Rapid Transit (BRT) and/or a trolley or streetcar system seemed favorable amongst citizens. Individuals felt these options were realistic, economically feasible to the point where half of the respondents supported a potential new or increased tax to fund expansion of the current bus service or other transit modes.

December 2005 Meeting

Similarly, attendees were asked to comment on the transit concepts presented at the January 2006 meetings. Comments were received only from attendees of the Davenport open house, summarized as follows:

- The best transit option for the Iowa Quad Cities:
 - Baseline (TSM) (4)
 - Build: Bus Rapid Transit (4).
- Of the Build alternatives, what route would you use the most?
 - Brady Street/Harrison Street (5)
 - Riverfront Connector (3).
- What route would you build first?
 - Brady Street/Harrison Street (5)
 - Riverfront Connector (4).

- When choosing this route, what was the most important factor?
 - Service area (6)
 - Transfer opportunities (3)
 - Frequency of service (3).

E. Focus Groups

In addition to the open houses, three focus group meetings were conducted with businesses, schools and other large trip generators in the Quad Cities. Technical Memorandum #3: Purpose and Need documented the comments received at these small meetings.

Focus group meetings were conducted to obtain additional input from the community given the relatively low attendance at the public meetings conducted on January 26 and 27, 2005. In total, three focus groups were conducted to document existing conditions. Two focus groups were completed on Wednesday, March 9, 2005, at the Davenport Public Works Building at 1200 East 46th Street. The first meeting at 9:00 AM drew five attendees while the second meeting at 1:00 PM drew four attendees. The Bi-State Regional Commission (Bi-State) invited a total of 55 stakeholders from the Quad Cities. Bi-State developed the guest list with the assistance of the Cities of Bettendorf and Davenport and Chambers of Commerce. Bi-State staff followed up the invitation with a telephone call to garner participation at the meetings. The third focus group was attended by six St. Ambrose University students, who were all involved in student government, and was conducted on April 27, 2005 at the Rogalski Center.

At each meeting, URS introduced the project to the group using the materials from the public meetings that were conducted last January. The project overview included the purpose of the Alternatives Analysis, process to be followed, schedule and potential options to be studied.

The following tables summarize the comments received from focus group participants. They have been selected based on the frequency that they were cited and their potential impact on the Study. A list of individuals invited to the meetings and participants are included in Appendix B.

Table 7
March 9, 2005 Focus Group Comments

Vision of future growth in the Iowa Quad Cities:

- Retirement of John Deere employees.
- St. Ambrose University will increase enrollment from 3,500 to 4,000 within the decade.
- Future revitalization projects in southern Bettendorf might affect enrolment in Bettendorf schools.

Identify roadway deficiencies and/or bottlenecks and their impacts:

- Kimberly Road, 53rd Street, Elmore Avenue and I-80.
- Congested arterials result in slow transit travel times for buses.

Potential solutions to transportation problems in the Quad Cities:

- Park-and-ride facilities in the outskirts of town.
- Improve passenger amenities at bus stops.
- Provide passenger information system with real-time data.
- Provide a downtown circulator route, just like in Iowa City during football games.
- Promote transit use, e.g. offer free bus rides through employers.
- Bike racks on buses.
- Improve other alternative modes (add bike lanes).
- Install bus pullouts.
- Expand service to end of day. Coordinate bus schedules.

Effects of development and redevelopment on transportation in the Quad Cities:

- Davenport Planning and Zoning Commission is very careful about allowing development outside of municipal service area.

Deficiencies in bus transit service:

- Long travel times.
- Frequency and hours of service – Lack of evening and late night service.
- Glut of structured parking in downtown Davenport discourages use of other modes such as transit.

Rank importance of transportation, redevelopment activities, environmental protection and preserving the character of the community within the Iowa Quad Cities:

- Transportation is a major issue for people with limited income. This population contributes to the labor force and need to be able to travel to and from work.

Specific attractions or activity centers in the Iowa Quad Cities that should be served by transit?

- Tyson, John Deere, uses identified in the River Vision Project.
- The Mark, major employers, health systems, educational institutions.

Opinions on implementing a fixed guideway transit system in the Iowa Quad Cities:

- River Vision – Streetcar is part of River Vision that would attract convention patrons.
- LRT or other rail loop between downtown Davenport and Van der Veer Park.

Perceived benefits of a fixed guideway system in the Iowa Quad Cities:

- If the need and cost can be justified, it would be one economic development tool.

Perceived detriments of a fixed guideway system in the Iowa Quad Cities:

- Cost, lack of riders if it isn't the appropriate mode.

Opinion on increasing taxes to fund additional transit projects:

- Transit service needs to be provided efficiently.
- Depends on size of increase.
- Need to subsidize persons who have no other means of transportation.

How to make transit more attractive:

- Increase in fuel cost, educate students, provide park-and-ride facilities.
- Increase service frequency.
- Distribute transit information (schedule, route, fare).
- Have local businesses sponsor bus service between various attractions, e.g. restaurants and performance venues (The Mark).

Other groups in the community who should be contacted as part of this Study:

- Residential realtor, new welfare recipients, St. Ambrose students.

Table 8
April 27, 2005 Focus Group Comments
St. Ambrose University Students

- | |
|--|
| <ul style="list-style-type: none">▪ Difficult to find bus schedule information.▪ Bus stop near campus is not nice or welcoming (security, lighting at shelter near Walgreens). Safety is a concern – quality of people who ride the bus.▪ Serve Wal-Mart on 53rd; also movie theatre, and Hy-Vee; health club facilities such as the Y, Curves, Gold's Gym.▪ Bus service ends too early in the evenings (6:00 PM on weekends and 6:30 PM on weekdays). Students who work at the mall have shifts that end after that time.▪ Sidewalks around campus are in poor condition, discontinuous, especially on Locust.▪ Difficult to cross the Mississippi River to reach destinations such as The Mark, the District, Augustana, Moline Mall, Comedy Sports.▪ Willing to allot a portion of student activity fee for a bus pass. |
|--|

V. DEFINITION OF ALTERNATIVES

Based on transportation needs identified in Section I using existing and projected socioeconomic and transportation data, supplemented with public feedback, this study identified a range of alternative transit improvements for consideration. This Alternatives Analysis initially identified a general set of alternatives for inclusion in the Study, followed by a detailed definition of transit options for a more detailed evaluation.

A. Initial Set of Alternatives

The initial set of alternatives included the following transit options:

- No Build Alternative
- Baseline Alternative
- Build Alternatives (e.g. commuter rail, light rail transit, bus rapid transit and personal rapid transit)

The transit alternatives analysis process, as defined by the FTA, requires that a wide array of transit options be considered in this study.

No Build Alternative

The No Build Alternative is defined as the transit system that currently exists in the Iowa Quad Cities. The No Build Alternative assumes that the exact same transit service and accompanying amenities that exist today would also exist in 2035.

Baseline Alternatives

The Baseline Alternatives contemplate the continuation of the current level of services provided in the Iowa Quad Cities, except some basic structural changes are made. The basic service components include fixed route and paratransit services provided by Bettendorf Transit and Davenport CitiBus. Paratransit service is provided separately under contract with River Bend Transit. Services provided by Rock Island County Metropolitan Mass Transit District (MetroLink) in Illinois are not included in this analysis, which focuses on the Iowa Quad Cities. The intent of the Baseline Alternatives is to increase ridership by providing low-cost service and facility improvements to the existing transit network.

Elements

There are two groups of service changes that can be considered under this category. One group is Cost-Neutral options. Another group is Service Expansion options. In many cases, these actions are general. Specific actions are developed based on feedback from Bettendorf Transit, CitiBus and the general public.

COST-NEUTRAL ACTIONS

Cost-neutral actions would save or reduce the cost of service. They also represent possible actions to add service, which would result in an increase in operating cost and result in a zero sum change in operating cost. In other words, a new service (increase in operating cost) would only be implemented with a corresponding, relatively equal reduction in service in the system (decrease in operating cost). These actions can be mixed and matched. For example, creating a “school out” schedule could reduce operating costs and the associated savings could fund a transit center at 18th Street/Spruce Hills Drive in Bettendorf. Additionally, some actions can be classified as both a cost-saving measure and an addition, depending on how they are implemented. For example, improving running times can reduce operating cost if headways are lengthened. The same action can result in an increase in operating cost if headways are shortened by providing additional buses, for example.

SERVICE EXPANSION ACTIONS

Service expansion actions are further grouped into low, medium and high levels of increases in annual operating costs, relative to existing cost, for consideration. Each level of expansion can be cumulative; i.e. the medium level assumes that the low level of has been implemented. Table 9 defines these actions:

The existing estimated total annual operating cost for Bettendorf Transit and CitiBus is \$4.04 million, approximately \$644,000 for Bettendorf Transit and \$3.4 million for CitiBus. The City of Davenport has approximately an additional \$140,000 available in transit funding per year, based on its local source, i.e. real estate taxes.

Table 9
Baseline: Elements of Expansion Options⁴

Option	Possible Actions
Low Operations/Capital Limited to a 5 percent increase in current budget. Approximately \$200,000 in gross operating costs, or about 3,000 additional annual revenue hours at \$65 per hour.	Cost-neutral actions Add Sunday and holiday service (mix of fixed route and demand-response) Minor service extensions (time or route length) Improve signage at bus stops Add benches and shelters Implement special fares (e.g. discounted fare to college students) Install minor transit center
Medium Operations/Capital Limited to a 10 percent increase in current budget. Approximately \$400,000 in gross operating costs, or about 6,000 additional annual revenue hours at \$65 per hour.	Implement Low Operations/Capital Options Extend existing routes Extend hours of operation (evenings and/or weekends) Implement selective frequency improvements
High Operations/Capital Limited to a 15 percent increase in current budget. Approximately \$600,000 in gross operating costs, or about 9,000 additional annual revenue hours at \$65 per hour.	Implement Medium Operations/ Capital Options Implement higher frequencies on selected routes Add new routes

⁴ At this time, the estimated total annual operating cost for Bettendorf Transit and CitiBus is \$4.04 million, approximately \$644,000 for Bettendorf Transit and \$3.4 million for CitiBus. The City of Davenport has approximately an additional \$140,000 available in transit funding per year, based on its local source, i.e. real estate taxes.

Build Alternatives

In addition to low-cost improvements to the existing transit service in the Iowa Quad Cities, transit enhancements with relatively higher capacities and capital and operating and maintenance costs are considered in this Alternatives Analysis. These Build Alternatives include: Bus Rapid Transit, Light Rail Transit, Commuter Rail, Trolley/Streetcar, Personal Rapid Transit, Automated Guideway Transit, and Monorail. Transportation corridors within the Iowa Quad Cities that could accommodate these modes are also identified. Table 10 presents a summary of the characteristics of each of these modes, as well as its applicability to the Iowa Quad Cities.

Summary

The following alternatives were refined and analyzed in the next phase of this study:

- No Build Alternative
- Baseline Alternatives
 - Cost-neutral actions
 - Service additions with increases in operating/capital costs (low, medium and high)
- BRT
- Streetcar/Trolley

Table 10
Evaluation of Initial Set of Transit Alternatives

Transit Technology	Streetcar/Trolley	BRT	LRT	Commuter Rail	PRT	AGT	Monorail
Application	Short distance, local trips	Line haul, medium distance trips	Line haul, medium distance trips (15 to 20 miles)	Line haul, long distance (20 to 100 miles)	Short distance, local trips	Short distance, local trips	Short distance trips
Capital cost per mile	\$10-\$30 million	\$10-40 million	\$20-40 million	\$3-15 million	Not available	\$40-\$60 million	\$40-80 million
Operating cost per passenger trip ⁵	Kenosha, WI: \$4.56	Boston: \$11 million/year ⁶	St. Louis: \$2.47	Dallas: \$12.58	No system in operation	Detroit: \$3.50 ⁷	Las Vegas: \$2.21 ⁸
Operating Speed Maximum Average	30 MPH 15 MPH	50 MPH 30 MPH	55 MPH 40 MPH	79 MPH 50 MPH	30 MPH 18 MPH	62 MPH 40 MPH	55 MPH 35 MPH
Station spacing	¹ / ₈ to ¹ / ₄ mile	¹ / ₂ to 1 mile	¹ / ₄ to 1 mile	2 to 5 miles	Less than ¹ / ₂ mile	¹ / ₄ to 1 mile in activity centers 1 to 2 miles in other areas	Comparable to LRT
Typical vehicle capacity	60 passengers	81 passengers	166 passengers	120 passengers	1-2 passengers	Comparable to streetcar/trolley	Comparable to LRT
Ridership	Kenosha: 67,600/year	Boston: 110,500/day ¹⁹	St. Louis: 14.8 million/year	Dallas: 1.4 million/year	Not available	Detroit: 5,000/day	Las Vegas: 25,800/day
Running surface	On-street, shared lane	Separate right-of-way is preferred	Exclusive fixed guideway	Exclusive fixed guideway	Exclusive fixed guideway	Exclusive fixed guideway	Exclusive fixed guideway
Environmental impacts	Right-of-way, noise	Right-of-way, noise, emissions	Right-of-way, noise	Noise, emissions	Aesthetic impacts of elevated structures	Aesthetic impacts of elevated structures, required grade-separation	Aesthetic impacts of elevated structures, required grade-separation
Potential corridors in the Iowa Quad Cities	Brady/Harrison 53 rd Street River Drive 18 th Street (Bettendorf) Locust Street/Middle Road	Brady/Harrison	Brady/Harrison 53 rd Street	I&M Rail Link Iowa Interstate Railroad I&M Railroad	Not applicable	Not applicable	Not applicable
Recommended Action	Need further study	Need further study	No further study needed	No further study needed	No further study needed	No further study needed	No further study needed

⁵ Source: Trinity Railway Express, 2003 National Transit Database, Federal Transit Administration.
⁶ Source: Federal Transit Administration, 2003 Annual Report on New Starts. For year 2010 of Silver Line Phase III, Massachusetts Bay Transportation Authority.
⁷ Source: <http://en.wikipedia.org>.
⁸ Source: *Las Vegas Review-Journal*, December 14, 2005.

B. Refined Definition of Alternatives

Based on the preceding findings, the following alternatives were included in this Alternatives Analysis, described and summarized as follows.

No Build Alternative

The No Build Alternative would maintain the current transit service provided by Bettendorf Transit and Davenport CitiBus.

Baseline Alternatives

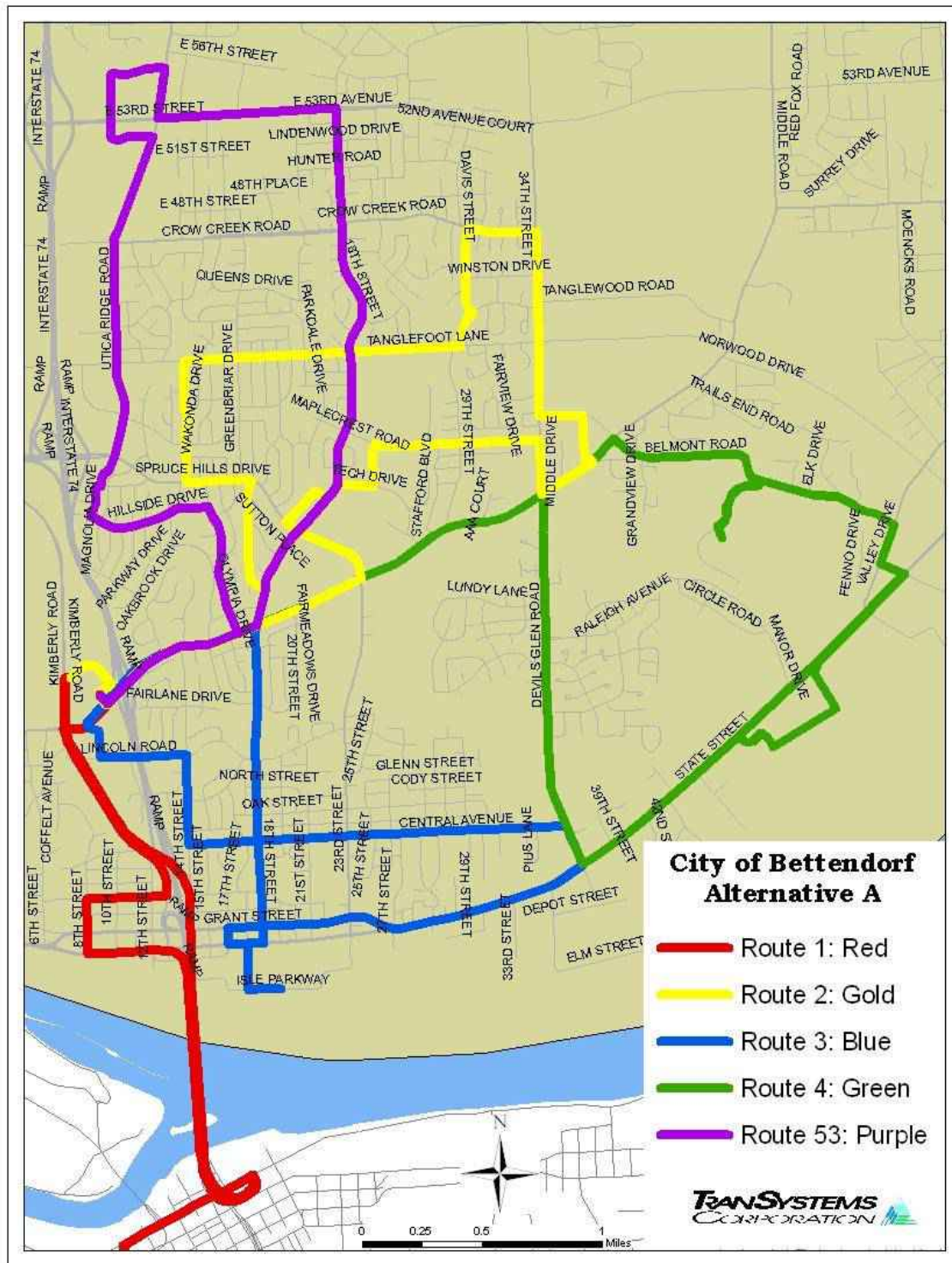
The Baseline Alternatives are made up of cost-neutral and service expansion options for both Bettendorf and Davenport. Alternative A is intended for ready implementation, while Alternative B would require additional operating and capital investment, e.g. a new transit center at St. Ambrose University and 18th Street/Middle Road. Figures 6 through 9 present the Baseline Alternatives. Davenport Alternative B underwent a few modifications as requested by staff to account for additional investment required by the proposed new transit center at St. Ambrose University and purchase of additional buses.

Baseline A

BETTENDORF

- Route 2 (Gold) – Add segment serving the Hy-Vee from the restructured Route 4 (Green). Add south segment of Route 5 (Purple).
- Route 4 (Green) to/from Scott Community College – Eliminate segment serving the Hy-Vee along Devil's Glen Road and Middle Road. Provide this service by restructuring Route 2 (Gold).
- Route 5 (Purple) – Restructure Route 5 to pick up portions of Gold Route.

Figure 6
Bettendorf Alternative A



DAVENPORT

- Route 2 (Marquette) – Operate weekday off-peak trips via Kimberly Road and peak trips via 35th Street. Modify routing through downtown Davenport and the GTC. Maintain one hour headways on Saturdays and eliminate the second bus.
- Route 3 (Fairgrounds) – Modify routing through downtown and the GTC.
- Route 4 (Brady/Harrison) – Modify outbound routing to include service to St. Ambrose University. Combine with Route 7.
- Route 5A (North Park) – Eliminate Grand-Central Park-Bridge loop. Move Eastern Avenue segment between 32nd Street and Kimberly Road to Jersey Ridge Road.
- Route 6 (Ridgeview) – Convert to deviated fixed route service.
- Route 7 (Bridgeline) – Combine with Route 4 (Brady/Harrison).
- Route 8 (Telegraph) – Modify routing through the GTC.
- Route 9 (Hickory Grove) – Modify routing through the GTC.

Baseline B

BETTENDORF

- Implement changes specified under Alternative A.
- Reduce service to Kimberly Road/Middle Road by having all routes meet at 18th Street and Spruce Hills Drive.
- Extend Purple Route to Wal-Mart at Elmore Avenue and 53rd Street, contingent upon extension of CitiBus Route 10 East to 18th Street at Spruce Hills Drive.

Figure 7
Davenport Alternative A

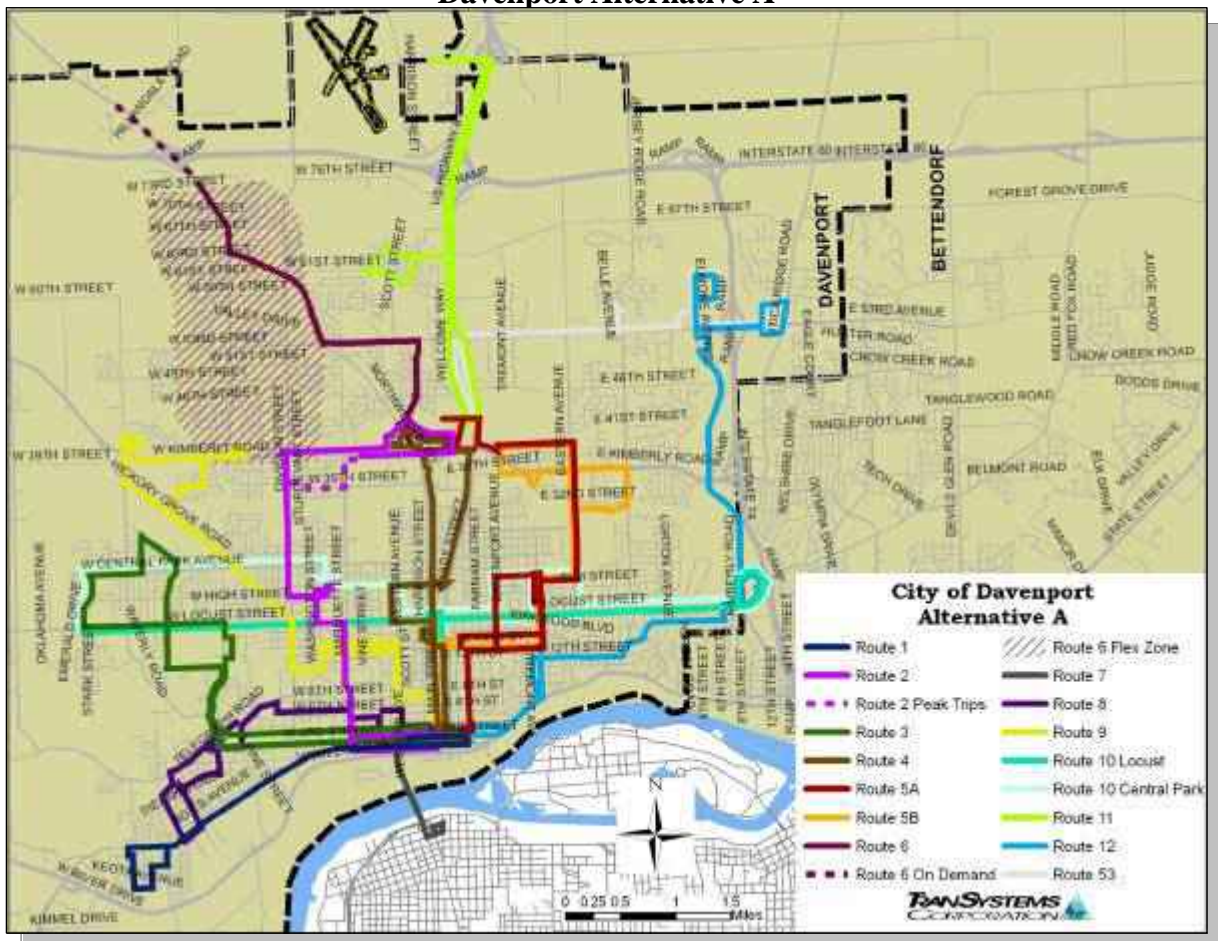
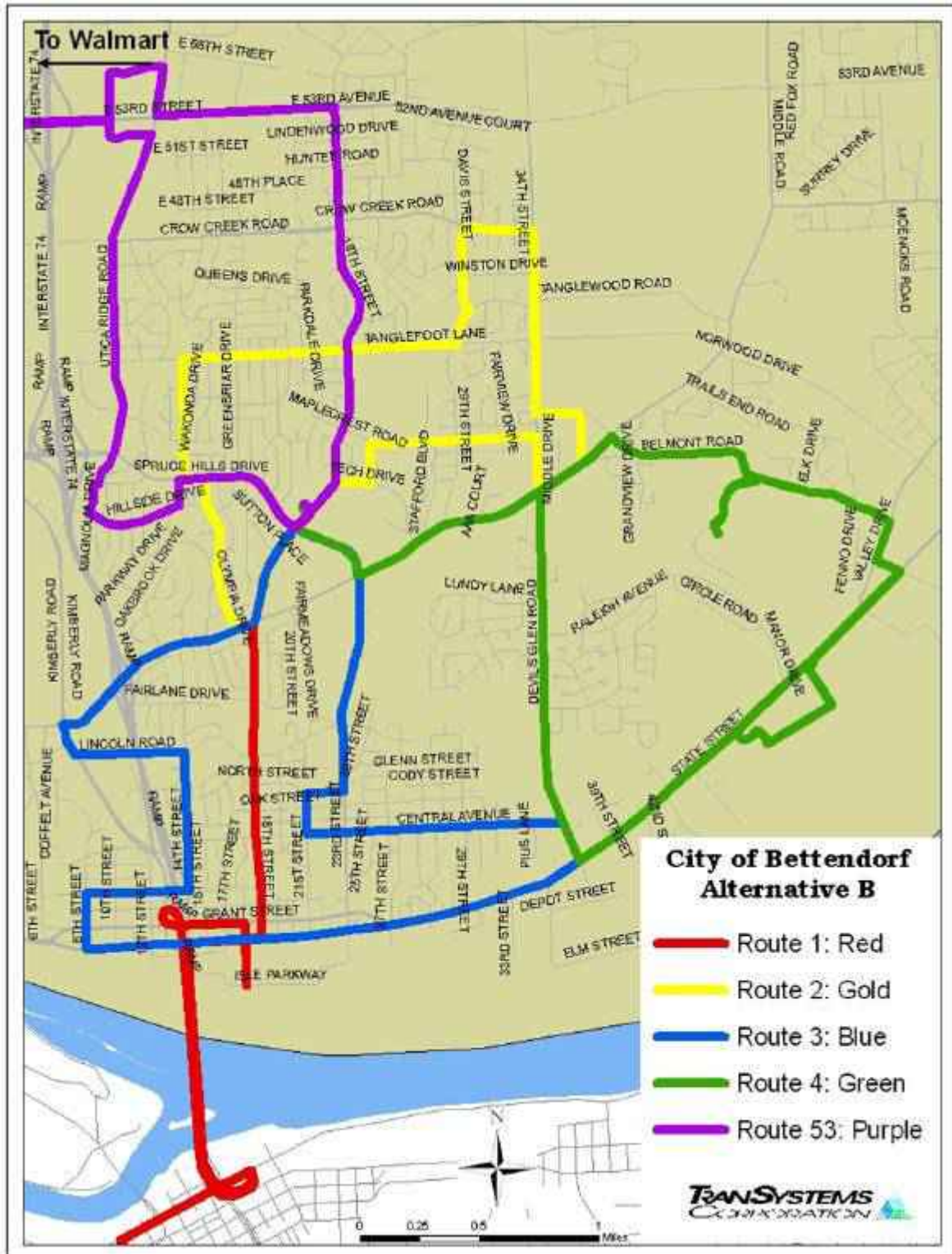


Figure 8
Bettendorf Alternative B

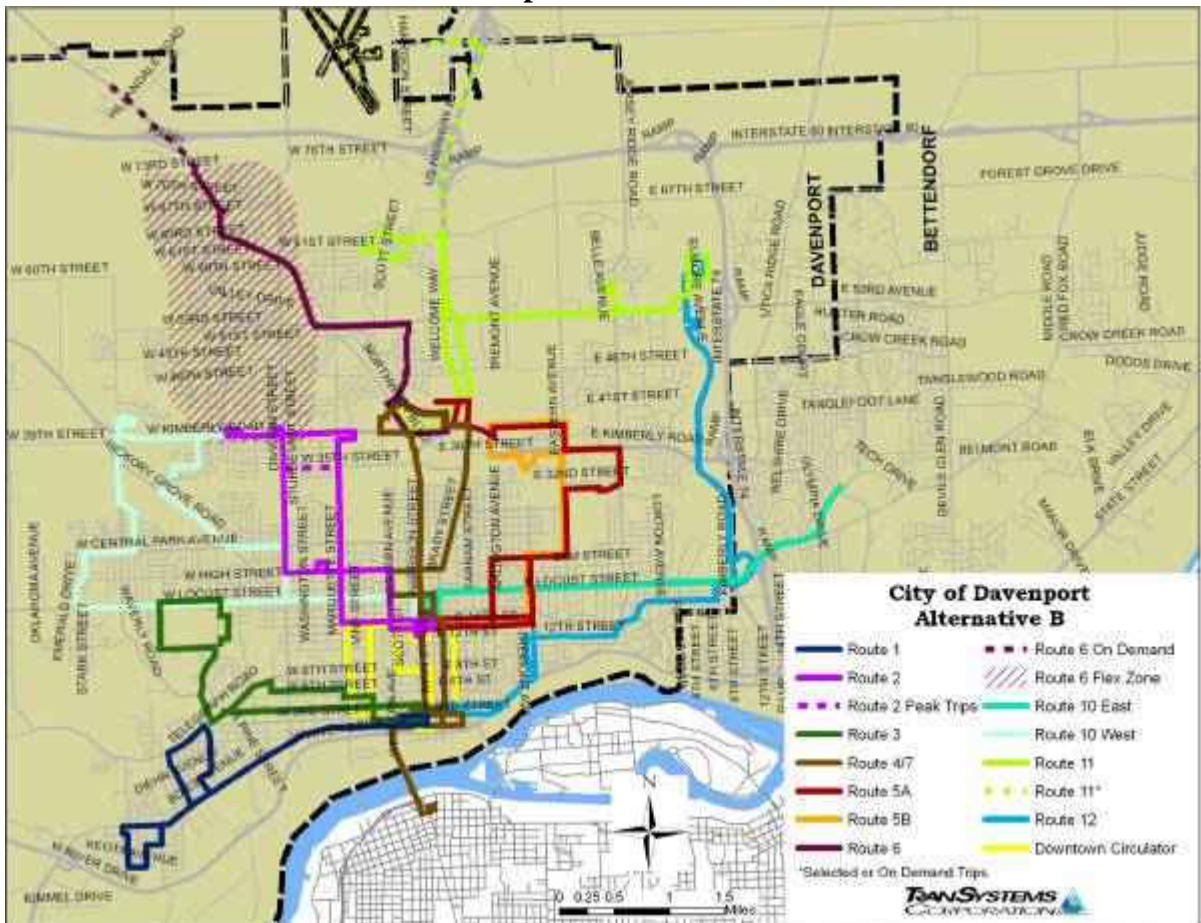


DAVENPORT

- Route 1 (Rockingham) – Combine with Route 8.
- Route 2 (Marquette) – Operate weekday off-peak trips via Kimberly Road and peak trips via 35th Street. Modify routing through downtown Davenport and the GTC. Maintain one hour headways on Saturdays and eliminate the second bus. Extend route to Hy-Vee on Kimberly Road to increase service within the corridor.
- Route 3 (Fairgrounds) – Shorten route length. Modify downtown/GTC routing. Terminate route at West Central Park Avenue to achieve 30-minute headway.
- Route 4 (Brady/Harrison) – Redirect to a new proposed transit center located at or near St. Ambrose University. Combine with Route 7 to minimize transfers and improve running time.
- Route 5A (North Park) – Redirect to a new proposed transit center located at or near St. Ambrose University. Increase frequency. Patrons destined to downtown Davenport would transfer at the new transit center.
- Route 5B (Kimberly Downs) – Redirect to a new proposed transit center located at or near St. Ambrose University. Patrons destined to downtown Davenport would transfer at the new transit center. Increase frequency. Move to Jersey Ridge.
- Route 6 (Ridgeview) – Convert to deviated fixed route.
- Route 8 (Telegraph) – Combine with Route 1.
- Route 9 (Hickory Grove) – Combine with Route 10 West (see below).
- Route 10 (Central Park West) – Split into west and east segments and serve existing Route 9 service area.
- Route 10 (Locust East) – Extend to 18th Street and Spruce Hills Drive in Bettendorf.
- Route 11 (Tripper) – Convert to deviated fixed route service. This change would improve service frequency, from irregular to hourly, all day (6:00 AM to 6:00 PM) and on Saturdays. Requires Bettendorf Transit to extend its Purple Route to the west and for Davenport to extend Route 10 East easterly to 18th Street and Spruce Hills Drive in Bettendorf, the new transfer hub.

- Route 12 (East Davenport) – No service east of Elmore Avenue. Bettendorf Purple Route would pick up the service and provide transfer opportunity at Wal-Mart.
- Route 53 (53rd Street) – Combine with Route 11.

Figure 9
Davenport Alternative B



Baseline Plus

“Baseline Plus” is comprised of either a five, ten or 15 percent increase in annual operating cost, as a result of service additions. The actions associated with each of these three Baseline alternatives are presented in Tables 9 through 11. Baseline Plus 10 and Baseline Plus 15 both include new all-week service to the Jersey Ridge corridor, as illustrated in Figure 10.

Table 12 presents the capital investment associated with both the Baseline and Baseline Plus alternatives.

Table 11
Elements of Baseline Plus 5⁹

Possible Expansion Level/Services	Change in Operating Cost
Implement Davenport Alternative A	(\$8,000)
Implement Bettendorf Alternative A	\$0
Add Saturday service to all Davenport routes	\$107,250
Add Saturday service to all Bettendorf routes	\$35,750
Add service to Davenport Route 11 (weekday)	\$44,625
Marketing Budget	\$25,000
TOTAL	\$204,625

Table 12
Elements of Baseline Plus 10¹⁰

Possible Expansion Level/Services	Change in Operating Cost	Comments
Implement Davenport Alternative A	(\$8,000)	
Implement Bettendorf Alternative A	\$0	
Add Saturday service to all Davenport routes	\$53,625	
Add Saturday service to all Bettendorf routes	\$17,875	
Operate Sunday service in Davenport and Bettendorf	\$118,300	Combination of fixed route and demand response
Add weekday service to Jersey Ridge Corridor	\$140,250	Would require capital cost of acquiring bus.
Add Saturday service to Jersey Ridge Corridor	\$22,000	
Marketing Budget	\$50,000	
TOTAL	\$394,050	

⁹ Additional \$200,000 in operating cost, in year 2005 dollars.

¹⁰ Additional \$400,000 in operating cost, in year 2005 dollars.

Table 13
Service Expansion Options¹¹

Possible Expansion Level/Services	Change in Operating Cost	Comments
Implement Davenport Alternative B	(\$300,000)	
Implement Bettendorf Alternative B	\$0	
Operate Sunday service in Davenport and Bettendorf	\$118,300	Combination of fixed route and demand response
Additional 5 demand response buses on Sunday	\$118,300	
Add Saturday service to all Davenport routes	\$107,250	
Add Saturday service to all Bettendorf routes	\$35,750	
Add service to Davenport Routes 12 and 53	\$309,825	
Add service to Davenport Route 11 (weekday)	\$58,013	
Add weekday service to Jersey Ridge Corridor	\$140,250	Would require capital cost of acquiring bus.
Add Saturday service to Jersey Ridge Corridor	\$22,000	
Marketing Budget	\$50,000	
TOTAL	\$659,689	

¹¹ Additional \$600,000 in operating cost per year, in year 2005 dollars.

Figure 10
Proposed Jersey Ridge Route

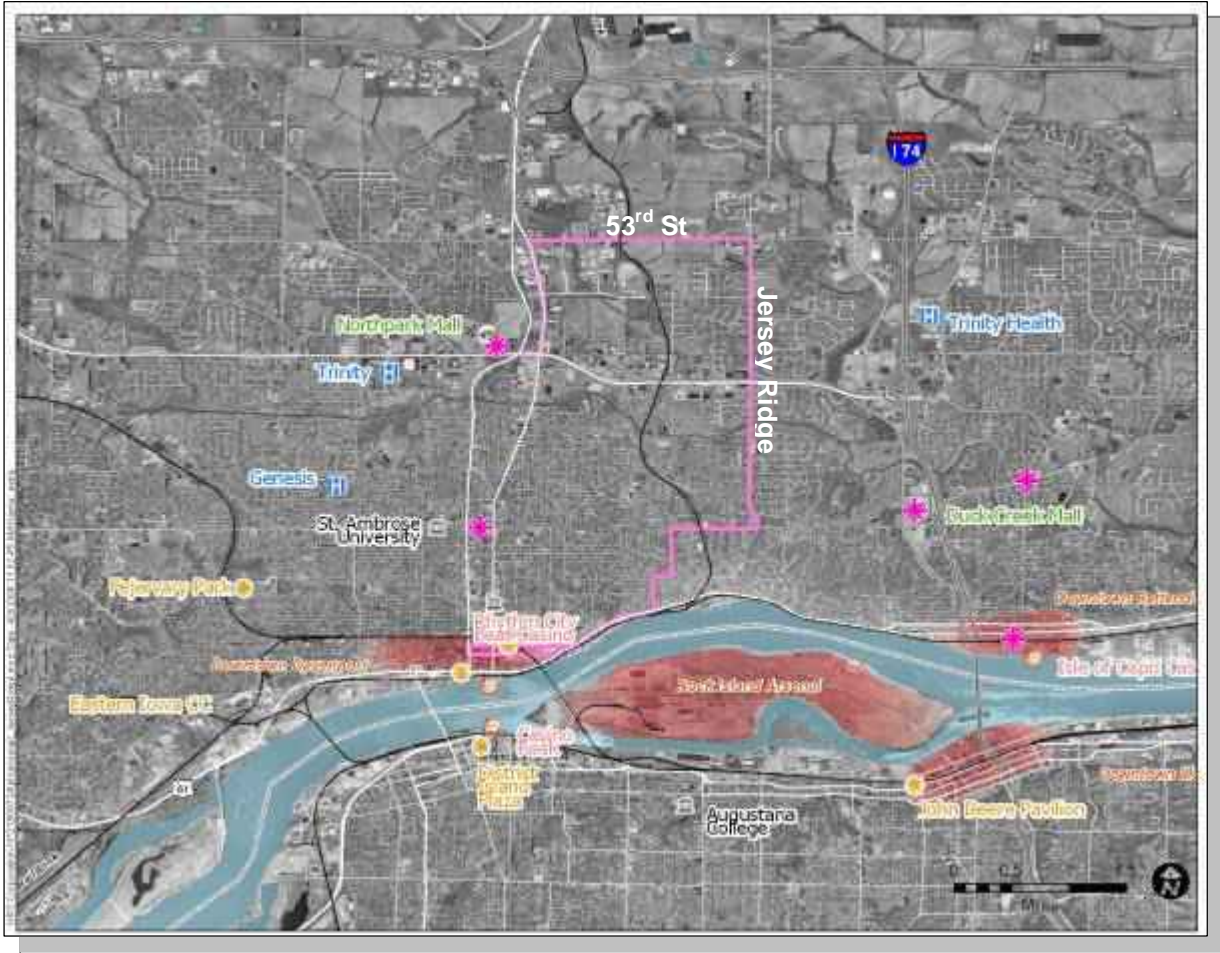


Table 14
Service Expansion Capital Costs^{12,13}

Element	Description	Annual Cost
Additional Shelters	Add 20 shelters throughout Davenport and Bettendorf at a cost of \$5,000/each (maintenance costs not included).	\$100,000
Additional Bus Stop Signage/ Amenities	Add improved signage, benches, newspaper stands, etc. to 50 locations throughout the system at a cost of \$1,000 each.	\$50,000
Improved On-Street Transfer Center in Davenport	Improve existing location at 16th/Main with additional amenities, small weather protected area, operator restrooms.	\$250,000
Jersey Ridge Equipment	Additional bus needed to operate service on both Weekdays and Saturdays.	\$250,000
Marketing	Additional marketing for Davenport and Bettendorf transit systems	\$50,000
New Transfer Center in Davenport	Cost is a general estimate. Ultimately dependent on land acquisition, type and amount of passenger amenities and the design of the structure.	\$1,000,000
New Transfer Center in Bettendorf	Cost is a general estimate. Ultimately dependent on land acquisition, type and amount of passenger amenities and the design of the structure.	\$1,000,000

¹² In year 2005 dollars.

¹³ These capital costs are not included in Table 15.

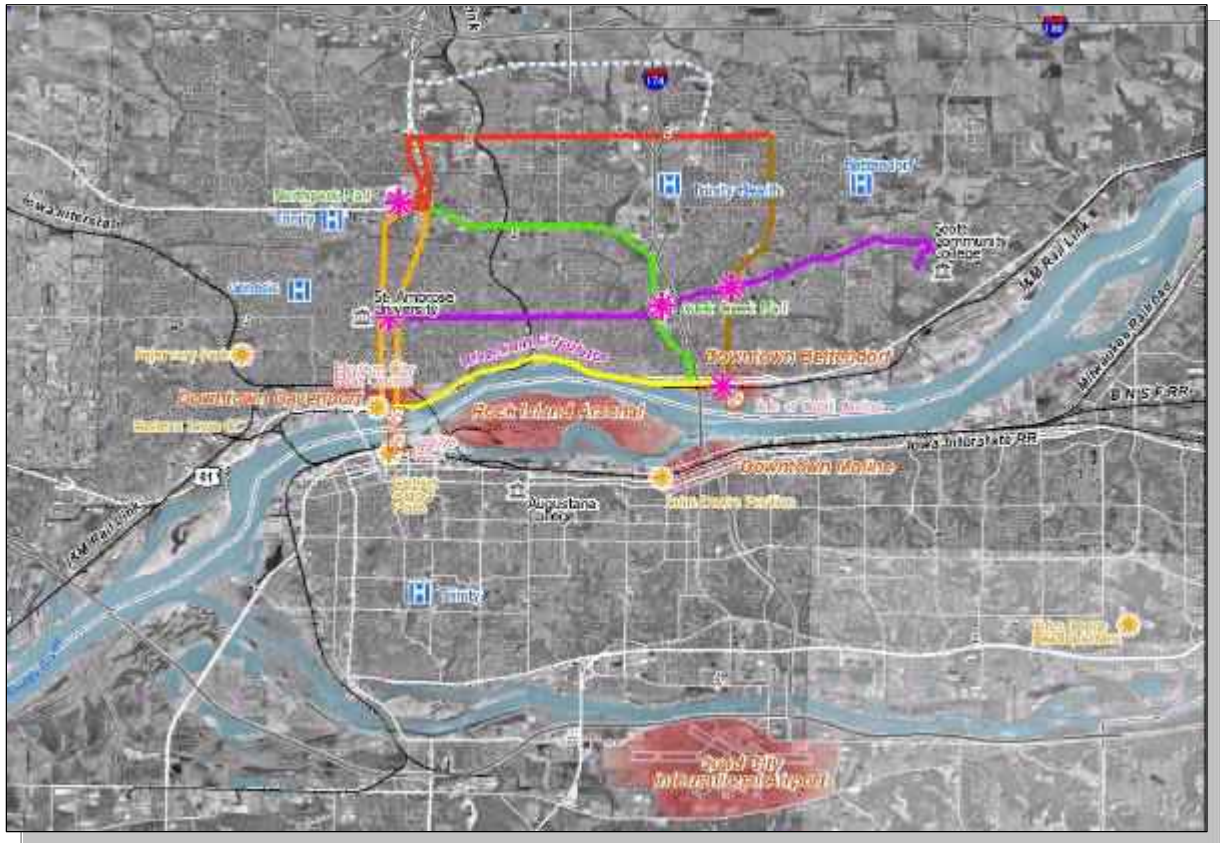
Build Alternatives

These alternatives include BRT, commuter service or express service on seven corridors within the Iowa Quad Cities. These corridors are illustrated in Figure 11 and are as follows:

- Brady/Harrison Streets
- 18th Street
- Locust Street/Middle Road
- Kimberly Road
- 53rd Street
- River Road (Riverfront Connector)
- Future 67th Street

Table 15 presents a summary of the characteristics of these seven Build alternatives.

Figure 11
Build Alternatives



Legend
Potential Transit Corridors
for Development:

-  Locust St. / Middle Rd.
-  53rd Street
-  18th St.
-  Riverfront Connector
-  Kimberly Road
-  Brady St. / Harrison St.
-  67th St. (Future)

Table 15
Build Alternatives¹⁴

Corridor	Limits	Length (one-way)	Type of Service	Stops/Areas Served ¹⁵
Brady/Harrison	GTC – Northpark Mall	3.1 miles	Commuter/ BRT	GTC+ City Hall (4th Street) Palmer College (10 th Street) St. Ambrose University+ Northpark Mall*+
18 th Street	Isle of Capri Casino – 53 rd Street	4.0 miles	Commuter/ BRT	Isle of Capri Casino Bettendorf City Hall+ Middle Road+ Spruce Hills Drive Tanglefoot Lane 53 rd Street*+
Locust Street/ Middle Road	St. Ambrose University – Scott Community College	6.6 miles	Limited Stop/ Express	St. Ambrose University+ Kimberly Road+ 18 th Street+ Scott Community College
Kimberly Road	Northpark Mall – Bettendorf City Hall	5.4 miles	Limited Stop	Northpark Mall*+ Jersey Ridge Elmore Avenue Middle Road+ Grant Street/State Street+ Bettendorf City Hall
53 rd Street ¹⁶	Brady/Harrison – 18 th Street	5.2 miles	Limited Stop	Brady/Harrison*+ Jersey Ridge* 18 th Street*+
Riverfront Connector	GTC – Isle of Capri Casino	4.3 miles	Circulator	GTC+ Rhythm City Casino Village of East Davenport Bettendorf City Hall+ Isle of Capri Casino
67 th Street/ Utica Ridge ¹⁷	Highway 61 – Utica Ridge 67 th Street – 53 rd Street	4.9 miles	Limited Stop	Highway 61+ Jersey Ridge* Utica Ridge 53 rd Street+

¹⁴ All new service would operate on weekdays and have 15-minute headways. Hours of operation are from 8:00 AM to 8:00 PM, except for the Brady/Harrison and 18th Street Commuter/BRT service, which would operate on peak hours – in the morning between 6:00 AM and 9:00 AM; and in the afternoon from 3:00 PM to 6:00 PM.

¹⁵ A “*” denotes that the bus stop is also a park-and-ride facility while a “+” denotes that the stop is also a transfer location.

¹⁶ Would require the extension of the Brady/Harrison service from Northpark Mall to 53rd Street.

¹⁷ Would require the extension of the Brady/Harrison Commuter/BRT service from 53rd Street to 67th Street. Assumes that the 53rd Street Limited Stop service would already be in place.

VI. EVALUATION OF ALTERNATIVES

The Study Advisory Committee identified three primary study goals. Each study goal has well-defined objectives that have been established to assist the study team in achieving the study goals. The study goals used in this analysis are presented in Chapter I.C. of this report. The following is a definition of the evaluation criteria used in this study. Appendix E, Technical Memorandum #5: Evaluation of Alternatives, presents the detailed methodology and results of the evaluation.

A. Evaluation Criteria

Transportation and Mobility

Create transportation improvements that add people-carrying capacity as necessary, minimize operating costs and improve operating efficiency.

Criteria

- Number of Residents, Employment and School Enrollment in 2000 and 2035 Within One-Quarter Mile of Corridor – Using Bi-State’s 2006 updated regional travel demand model.
- 2035 Weekday Riders – Using Bi-State’s 2006 updated regional travel demand model.
- Number of Transfer Opportunities Within Corridor – Based on identifying bus stops where transfers could occur, e.g. St. Ambrose University, Northpark Mall and 18th Street/Middle Road.
- 2035 Increase in Annual Operating Cost – Based on 307 days of service per year and \$65 per hour. Information provided by Bettendorf Transit and CitiBus.
- 2035 Increase in Annual Operating Cost per Passenger – This criterion uses the results of the estimated 2035 average weekday ridership and 2035 increase in annual operating cost.
- 2005 Increase in Capital Cost – This criterion is based on the capital cost presented for the Baseline Alternatives. For the Build alternatives, this criterion includes the cost of new buses; enhanced shelters, lighting and signage; concrete bus pads; and right-of-way allowance at park-and-ride sites. The cost estimates presented are in year 2005 dollars.

Economic Opportunity and Investment

Support investments in infrastructure, business and community that sustain the heart of the Quad Cities.

Criteria

- Priority Areas Served – This criterion includes downtown Davenport, Northpark Mall, St. Ambrose University, the 53rd Street and Kimberly Road retail corridors, and Scott Community College.
- Number of Employees Working During Proposed Service Hours – This criterion is a qualitative assessment of impact of proposed service on employment with hours outside of current transit service hours, e.g. retail and other shift work.

Communities and Environment

Facilitate the preservation and enhancement of neighborhoods in the Quad Cities.

Criteria

- Number of Historical Structures Adjacent to the Corridor – This criterion is based on a reconnaissance-level architectural survey. The following references were also used: National Register of Historic Places online database; Iowa site inventory database (Iowa State Historic Preservation Office); and Buildings of Iowa (Gebhard).
- Number of Cultural Structures Adjacent to the Corridor – This criterion is based on a reconnaissance-level architectural survey. The following references were also used: National Register of Historic Places online database; Iowa site inventory database (Iowa State Historic Preservation Office); and Buildings of Iowa (David Gebhard).
- Water Bodies Within One-Quarter Mile of Corridor – This criterion is based on Bi-State Regional Commission's Geographic Information System (GIS).
- Trails and greenways within one-quarter mile of corridor – Based on Bi-State Regional Commission's GIS.

B. Summary of Ridership Methodology

To determine the average weekday ridership impacts associated with the various alternatives evaluated in this Study, the following methodologies were employed.

Technical Memorandum #5: Evaluation of Alternatives (Appendix E) includes the complete methodologies used in the patronage forecasting process.

Baseline A and B

Estimating the current and future average weekday ridership for the various Baseline alternatives employed a three-step process, as follows:

Step One

Using population and employment data, the Bi-State Regional Commission's travel demand model calculates an estimated number of daily person trips for each Transportation Analysis Zone (TAZ). Forecast year person trips are also estimated using population and employment forecasts, which are assigned to TAZs according to land use plans. The forecasted increase in TAZ person trips was used to estimate the increase in transit use for individual routes.

By examining the increase in TAZ person trips, it is possible to differentiate between routes serving areas that are projected to experience significant changes in population and/or employment with those areas that are not. This methodology would also apply to areas that are served by multiple routes. For example, if Route A and Route B serve the same TAZs, each route currently captures a certain number (or percentage) of trips, and it is reasonable to assume that each route will continue to capture a similar percentage of trips in the plan horizon year.

Therefore, the following salient assumptions are used:

- Transit ridership will increase proportionately with increases in total person trips. For example, if the TAZs served by Route A increase from 10,000 person trips per day to 11,000 person trips per day, an increase of 10 percent, transit trips will also grow by 10 percent.
- The person trip rate for transit will remain constant. This is a reasonable assumption if the amount of transit service provided does not change dramatically or if there is not a dramatic shift in land use (e.g. dramatic increases in population and/or employment density). Others factors, such as dramatic increases fuel costs, could potentially impact the proportion of trips using transit; however, these factors are not easily quantified or forecasted.

Step 2

TAZs with any area within one-quarter mile of a route were selected. The percentage increase in person trips between the base year and 2035 was calculated for the selected TAZs and was applied to existing route ridership to derive the 2035 transit route ridership baseline figures.

Step 3

To determine the ridership impacts of Alternative A and Alternative B on 2035 ridership, the impacts on existing ridership were reviewed, and where applicable, the proportional impact change was applied to 2035 ridership.

Results

- Average weekday ridership on Bettendorf Transit and CitiBus fixed routes would increase by approximately 20 percent between years 2000 and 2035 (existing vs. No Build).
- There is no significant difference in average weekday ridership between the 2035 No Build and Baseline A and B alternatives.

Baseline Plus

The Baseline Plus alternatives include a five, ten or 15 percent increase in annual operating cost in addition to the implementation of Baseline A and B alternatives. Baseline Plus 5 entails increasing weekend service, while Baseline Plus 10 and 15 also include new weekday service to the Jersey Ridge corridor in Davenport. This section of the final report presents the methodology used to estimate the additional average weekday ridership associated with the proposed Jersey Ridge service.

Step One: Determine established route for comparison

Ridership data are reviewed along Route 12, since it serves a similar part of Davenport and similar uses. The level of retail attractors should be similar; Route 12 serves more of 53rd Street, including the Elmore corridor, but does not serve Northpark Mall (which the proposed Jersey Ridge Route would). The ridership data for Route 12 indicate that current weekday ridership is 150 (185 on Saturday).

Step 2: Compare trip generation levels to comparable route

One-quarter mile buffers were created around the proposed Jersey Ridge route and Route 12 to approximate the bus-access zones. In this step, the level of person trip generation within the bus access zone was estimated. Two different comparisons within each route's accessibility zone were completed:

- a. Trip generation at the TAZ level
- b. Number of households at the census block level (more detailed/precise geography) – This comparison allowed the estimate number of potential riders of the Jersey Ridge route compared to Route 12.

Step 3: Compare the transit ridership mode share to comparable route

The transit ridership share for the Jersey Ridge route's accessibility zone was compared to that of Route 12.

Step 4: Estimate the Jersey Ridge route's existing daily ridership

The relative differences in person trip generation levels and transit mode share were combined. The product of the trip generation-transit mode share adjustment was then applied to the existing (2005) ridership data for Route 12.

Step 5: Forecast the Jersey Ridge Route's Future (2035) Daily Ridership

The forecasted growth in trip generation within the Jersey Ridge route access zone was used as the forecasted growth in transit usage. Similar to the ridership forecast methodology employed for Baseline alternatives A and B, transit's relative share of trips would remain unchanged.

Results

The estimate average weekday ridership on the proposed Jersey Ridge route is 150 passengers in 2005 and 190 in 2035. These estimates would be added to the Baseline A, B, and Baseline Plus 5 ridership. In 2035, the Jersey Ridge patronage would be equivalent to approximately a five percent increase in ridership over the No Build or Baseline A, B and Baseline Plus 5 alternatives.

Build Alternatives

The approach and general results of forecasts for the Build condition express/BRT route concepts are presented in this section. The identified express route concepts, including potential stop locations and park and ride lots, that were evaluated are documented in Figure 11.

The primary source for trip information incorporated into the ridership forecasting was the Bi State Regional Commission's travel demand model, recently updated and revalidated by Bi State staff. The travel model did not include a separate transit component. Thus, URS adapted the available travel model datasets and incorporated mode split and boarding/alighting information from available sources to complete the express route bus forecasts.

The forecasting process was executed through the following five steps:

Step 1: Convert vehicle trips to person trips

The current model structure for the travel model is based on generation, distribution and assignment of vehicle trips, and for this analysis person trip information is required. The vehicle trip table was converted to person trip tables by applying auto-occupancy factors, which were estimated from study area census data and from travel survey data from similar-sized metropolitan areas.

Step 2: Extract person trip origin/destination information for candidate express route riders

This step involved identifying the trip interchanges, combinations of origins and destinations that would be logical candidates to use the identified express service by route. The determination of candidate riders is based on the proximity of the express service to riders' trip origins and destinations. Candidate riders were evaluated for two different ridership components:

- Walk access bus trips: These rides were assumed to walk to the bus stop to board the bus and ride to their destination. It was assumed that riders would be candidates for using the express bus service if their trip origin and destination were within one-quarter mile of designated express route stops.

- Park-and-ride bus trips: These riders were assumed to drive to a park and ride lot to board the bus and ride to their destination. Park and ride lots were reviewed at five potential suburban locations to tie into potential express routes. The five park-and-ride lots that were evaluated were located at:
 - 53rd Street/Brady Street
 - Northpark Mall
 - 67th Street/Jersey Ridge Road
 - 53rd Street/Jersey Ridge Road
 - 53rd Avenue/18th Street.

Step 3: Estimate the express bus mode share from the candidate trips

This step reviewed percentage of potential riders that would use the express route bus service instead of another travel mode. Available census data and on-board survey data from the Bettendorf and Davenport transit riders were used to estimate express service mode share between each express route origin and destination.

Step 4: Incorporate transfer riders from existing bus routes

This step reviewed the number of riders on existing routes in Davenport and Bettendorf that would transfer onto one of the potential express bus routes. Through this review, it was determined that only Routes 4 and 10 in Davenport had a significant level of transfers between them and had connections to potential express routes. It was estimated 120 daily riders would transfer onto a Brady Street express route.

Step 5: Combine the results from Steps 1 through 4 to estimate express bus ridership

Step 5 combines the results of Steps 1 through 4 in order to derive ridership estimates by route. Origin-destination tables for express route ridership were completed by combining the estimates of walk access trips, park and ride trips and transfer trips.

Results

Table 16 presents the estimated 2000 and 2035 average weekday ridership for the seven Build alternatives.

Table 16
Build Alternatives: Estimated Average Weekday Ridership

Build Alternative	2000	2035
Brady/Harrison Commuter/BRT Northpark Mall – Downtown Davenport	290	325
18th St Commuter/BRT 53 rd St – Downtown Bettendorf	35	40
Locust Street/Middle Road Limited Stop Brady/Harrison – Scott Community College	55	80
Kimberly Road Limited Stop Brady/Harrison – Downtown Bettendorf	135	190
53 rd Street Limited Stop Brady/Harrison – 18 th Street	40	60
Riverfront Connector Downtown Davenport – Downtown Bettendorf	35	45
67 th Street Limited Stop Highway 61 – 53 rd Street/18 th Street	10	25

C. Summary of Evaluation

The summarized evaluation is shown on the following page as Table 15.

Table 17
Summary of Evaluation

Alternative		No-Build 2035	Baseline A	Baseline B	Baseline +5%	Baseline +10%	Baseline +15%	Brady/ Harrison	18th St	Locust St/ Middle Rd	Kimberly Rd	53rd St	Riverfront	67th St
Evaluation Measure (vs. No Build)														
Transportation and Mobility														
+	2000 # of residents within 1/4 mile of corridor	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.	Transit service exists in parts or all of these corridors today. While the number of residents remains relatively the same, the expanded hours of service and improved frequency would enhance the overall transit service in these corridors.						+1,300
+	2035 # of residents within 1/4 mile of corridor	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.							+1,400
+	2000 # of employment within 1/4 mile of corridor	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.	Transit service exists in parts or all of these corridors today. While the number of employees remains relatively the same, the expanded hours of service and improved frequency would enhance the overall transit service in these corridors.						+1,200
+	2035 # of employment within 1/4 mile of corridor	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.							+3,000
+	2000 school enrollment within 1/4 miles of corridor	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.	Transit service exists in parts or all of these corridors today. While school enrollment remains relatively the same, the expanded hours of service and improved frequency would enhance the overall transit service in these corridors.						No change.
+	2035 school enrollment within 1/4 miles of corridor	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.							No change.
+	2035 daily riders	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.	325	40	80	190	60	45	25
+	Number of transfer opportunities within corridor	Duck Creek Mall GTC 16th/Main	No change.	Move from Duck Creek Mall to 18th St/Spruce Hills Dr New transit center at St. Ambrose University	No change.	No change.	Move from Duck Creek Mall to 18th St/Spruce Hills Dr New transit center at St. Ambrose University	New transit centers at 18th St/Spruce Hills Dr, St. Ambrose University and Brady/Harrison at Locust.	City Hall and 18th St/Spruce Hills Dr	New transit center at St. Ambrose University, Kimberly Rd, and 18th St/Spruce Hills Dr	Northpark Mall and 18th St/Spruce Hills Dr	Brady/Harrison and 18th Street park-and-ride facilities	Bettendorf City Hall	67th St/Hwy 61 and 53rd St/18th St
+	Increase in annual operating cost (Year 2035 Dollars)	Not applicable	No change.	No change.	\$ 410,000	\$ 820,000	\$ 1,235,000	\$ 460,000	\$ 915,000	\$ 1,880,000	\$ 915,000	\$ 2,270,000	\$ 985,000	\$ 2,290,000
+	Increase in annual operating cost per passenger	Not applicable	\$ -	\$ -	\$ 0.29	\$ 0.57	\$ 0.85	\$ (0.22)	\$ 0.72	\$ 1.47	\$ 0.41	\$ 1.04	\$ 0.78	\$ 1.13
+	Increase in capital cost	Not applicable	No change.	\$3.1 - 3.6 million	\$700,000 - 810,000	\$1.5 - 1.7 million	\$4.6 - 5.3 million	\$4.5 - 5.2 million	\$4.6 - 5.4 million	\$5.2 - 6.1 million	\$4.6 - 5.3 million	\$13.6 - 15.8 million	\$1.4 - 1.6 million	\$13.7 - 15.9 million
Economic Opportunity and Investment														
+	Priority areas served	Not applicable	No change.	Add: Walmart @ Elmore; improved service to St. Ambrose University	No change.	No change.	Add: Walmart @ Elmore; improved service to St. Ambrose University	Improved frequency within downtown Davenport and St. Ambrose University	Improved frequency within downtown Bettendorf, library and museum	Improved travel time between Davenport and Scott Community College; no transfer required	Improved service/frequency to retail and commercial along corridor and Elmore Avenue	No transfer required; improved frequency	Seamless service between downtowns and East Davenport.	Service to new development/ corridor
+	Number of employees working during proposed service hours (retail employment)	Not applicable	No significant change.	No significant change.	No significant change.	No significant change.	No significant change.	Expanded service hours, improved frequency (15 minutes) and other enhancements could improve transit service for employees working outside of the traditional 8 AM to 5 PM shift.						
Communities and Environment														
+	Number of historical structures adjacent to the corridor	Not applicable	No change.	New transit center at St. Ambrose proximate to Madison School	No change.	No change.	New transit center at St. Ambrose proximate to Madison School	New transit center at St. Ambrose proximate to Madison School	No change.	New transit center at St. Ambrose proximate to Madison School	No change.	New transit center at St. Ambrose proximate to Madison School	Proximity to E. River Drive residential districts, Village of East Davenport and railroad bridge across E. River Drive and Mississippi River	New transit center at St. Ambrose proximate to Madison School
+	Number of cultural structures adjacent to the corridor	Not applicable	No change.	None. No new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.	Proximate to Duck Creek and Middle Parks, but no new right-of-way acquisition is anticipated.	Proximate to Duck Creek Park, but no new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.	Proximate to Lindsay Park, but no new right-of-way acquisition is anticipated.	None. No new right-of-way acquisition is anticipated.
+	Water bodies within 1/4 mile of corridor	Duck Creek Goose Creek Mississippi River Crow Creek Tributaries	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.
+	Trails and greenways within 1/4 mile of corridor	Various such as Kimberly Rd, Welcome Way, Main St, Riverfront, 18th St, Middle Rd, Mississippi River Crossing, Elmore Ave, Grand Ave	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	No change.	New continuous service between the two downtowns proximate to Lindsay Park.	New service proximate to trails such as 67th St, Welcome Way, 53rd St, 59th St, Tremont Ave, Jersey Ridge, Utica Ridge.

VII. FUNDING ALTERNATIVES

Technical Memorandum #6: Funding Alternatives reviewed existing funding sources for transit and presented innovative tools to increase the Iowa Quad Cities' revenue stream for transit improvements, both for operating and capital investments. To this end, the methods and techniques documented in Technical Memorandum #6 not only focused on increased transit funding, but in some cases, could create better operating efficiencies for the transit system. For example, by requiring developers to accommodate transit facilities and operations within their initial proposals, the cost of providing transit services may be reduced in the future. This could be accomplished by requiring development projects, both residential and commercial, to meet transit sustainability design standards. Still, other innovations may provide improved transit service to customers by increasing service frequencies on a more productive route and decreasing service on a poorly used route.

The following is a summary of the innovative transit funding mechanisms for consideration by the Iowa Quad Cities:

A. Maximize Existing Funding Sources

Federal

In 2003, Iowa contributed \$321.8 million to the federal highway account and \$60.9 million to the mass transit account. In return, Iowa received \$32.4 million through FTA's programs in the same year. This gap in federal funding is further emphasized with the decline of Iowa's portion of federal transit funding. In FY2002, Iowa ranked 34th in total FTA funding contrasted to FY2005's ranking of 38th.

To prevent Iowa's ranking slipping even further and to equalize the national transit funding playing field, a minimum transit funding guarantee is needed. A transit investment guarantee would be similar to the highway guarantee investment program where 95 percent of federal tax revenues generated from each state would be returned. If implemented, a transit fund guarantee program will benefit Iowa and could increase federal transit funding by approximately \$25 million.

State

Constitutionally Dedicated Transit Funding

Under Iowa law, gas tax revenues are constitutionally dedicated to funding roadway planning, design, construction and maintenance activities. Currently, only 1/20 of the first \$0.04 of the use tax on the sale of motor vehicles is dedicated to transit. To increase statewide transit funding, many states have lifted the road-only restriction on the use of gas taxes and dedicate a percentage of the revenues to fund transit activities. Iowa's State Transportation Plan (1997) calls for raising the transit funding portion to 1/10 of the first \$0.04 for mass transit purposes. Using 2003 transit revenues as an example under this new formula, an additional \$9.5 million would be generated for transit purposes.

Flexible Funding

A Brookings Institute Study (2000) found only 1.62 percent of Iowa's total STP and CMAQ funds were transferred for transit purposes. These funds are available to support transit capital projects, including vehicles and facilities that are used to provide intercity bus service. In addition, these funds can be utilized for transit safety improvements, transit research and technology transfer. Specific to CMAQ funding, these funds can defray operating costs for new or expanded transportation services for up to three years.

From FY1992 to FY1999, approximately \$459.4 million in flexible funding was available to support multimodal transportation projects in Iowa. Of the \$459.4 million, only \$5.3 million was transferred to support transit activities. For comparative purposes, the national average of STP and CMAQ funds allocated to support statewide transit projects during the same timeframe was 8.95 percent. Even a modest increase of 2 percent in STP and CMAQ transfers, would have generated an additional \$11.3 million in transit project funding from FY1992 to FY 1999.

Local

Transit Mill Levy

The City of Bettendorf does not levy taxes against property to support Bettendorf Transit. Currently, transit funding is allocated through general fund revenues. Should the City of Bettendorf implement the full transit levy in the future an additional \$1.2 million could be raised to support existing service. The City of Davenport supports CitiBus with a mill levy of \$0.91 per \$1,000 of assessed value, which raised \$2,769,893 in FY 2004. Should the City of Davenport impose the maximum mill levy, approximately \$121,700 in additional transit funding could be raised.

Vehicle Registration Fees

Iowa law permits counties to raise transit revenues through vehicle registration fees. Scott County uses this revenue stream to support the county's general fund. Using 2003 budget performance data, a \$1.00 increase in vehicle renewals alone would raise \$170,300 for transit services. More revenues could be realized if fees were also applied to title and security transactions.

Regional Transit Districts

Recent changes in Iowa law (Chapters 28E and 28M) allow for counties to establish regional transit districts (RTDs). Regional transit districts may levy taxes, capped to \$0.95 per \$1,000 assessed value, and issue general obligation and revenue bonds to support transit services. Under a Polk County plan, communities will assess residents with the new levy in lieu of paying a yearly allocation based on miles of service. The Iowa Quad Cities' transit systems could create a transit authority under the new law and can raise additional revenues for operations and capital. Currently, the legislation requires that Scott County, in this case, have a population over 175,000 in order to establish an RTD. The law states which cities and counties may enter into agreement to establish an RTD, as follows:

- "A county with a population in excess of 175,000 and participating cities.
- Two or more contiguous counties and participating cities may create, by Chapter 28E agreement if one of the counties has a population in excess of 175,000. A district shall consist of the unincorporated area of any participating county and the incorporated area of any city in the county that does not have an urban transit system. However, a city without an urban transit system may decline, by resolution forwarded to the board of supervisors, to participate in a regional transit district.
- A city with an urban transit system may participate in an RTD if the city council, by resolution forwarded to the board of supervisors, notifies the county that the city wishes to participate.
- A city that is located in a nonparticipating county that is contiguous to a county with a population in excess of 175,000 that is creating a regional transit district may notify that county, by resolution to the board of supervisors of that county, that the city wishes to participate."

Details of the legislation are presented in Appendix G of this report.

Quad-Cities Interstate Metropolitan Authority Compact

Provisions within the Quad-Cities Interstate Metropolitan Authority Compact, gives the Counties of Scott and Rock Island to impose a sales tax to support regional projects. Transit facilities and services qualify for funding under the compact. In FY 2005, Scott County's taxable sales were \$2.2 billion. With a signed compact in place, Scott County could have generated approximately \$5.5 million in revenues for transit investments in FY 2005.

Compact language required a referendum to approve the creation of the authority to be held before January 1, 2003 in order for the Compact to be valid. As this did not happen, the States of Iowa and Illinois would need to pass identical legislation to reinstate the Compact. As a long-term solution, Scott and Rock Island Counties should work to reenact the Compact when future regional transit needs between the two counties exceed existing funding sources. A single purpose metropolitan compact, such as for bridge and roadway improvements, is an idea supported by local officials and a local opinion survey.

B. Innovative Funding Methods

State

Rather than waiting for increases at the federal level to materialize, many states have created innovative programs to increase transit funding. For example, the State of Florida has recently created a local version of the Federal Transit Administration's New Starts Program. Florida's New Starts Program, which is linked to progressive growth management policies, allows transit agencies to apply and compete for up to 50 percent of the costs for the non-federal share of federal New Starts projects.

The purpose of Florida's New Starts Program is to provide a steady source of local funding to communities participating in the federal New Starts Program. This reliable local funding stream will create a sound financial foundation for Florida transit projects. With this advantage, Florida's transit agencies will become formidable competition for national transit funding programs.

Other states have raised revenue from other non-traditional and innovative sources. For example, the State of Arizona participates in the multi-state Powerball lottery. Lottery revenues are distributed to Arizona cities and towns based on population. For those communities over 60,000, one-third of the revenues must be used for transit.

Local

There are a variety of ways to generate transit revenues at the local level. Many communities around the country employ a combination of sources to fund local transit operations and/or capital needs. Transit revenues have been raised through a combination of fuel, vehicle, property, sales, payroll and lodging taxes across the country.

Most local option transportation taxes that support transit operations tend to be unrestricted in duration. However, local option taxes raised for capital purchases tend to include a sunset clause. Some states, such as Washington, limit the use of local option taxes only to those projects or programs that have met certain land use or transportation planning requirements and are developed through an open and public process. Table 18 describes typical rates, per capita revenues and applicability to transit for each local option tax.

Table 18
Local Option Taxes for Transit¹⁸

Tax	Average Tax Rate	Typical Revenues Per Capita	Application to Transit
Property	5 Mills	\$30 - \$300	Strong
Sales	0.5 percent	\$40 - \$70	Strong
Fuel	\$0.05 per gallon	\$20 - \$35	Moderate
Vehicle	\$10 per vehicle	\$7 - \$8.50	Moderate
Payroll	0.25 percent	\$30 - 60	Weak

Communities within the State of Florida have taken advantage of their local authority to raise local option fuel taxes. Florida communities have the option of imposing \$0.12 in additional gas taxes to raise revenue for transportation projects. Also available to Florida communities is the authority to fund transportation investments through the Local Government Infrastructure Surtax, Toll Revenues, Bond Issues, Impact Fees, and Municipal Services Taxing Units. These options have been made available due to explosive population growth in the State of Florida and the inability of state and local governments to keep pace with growing capital improvement demands using only federal and state tax allocations.

Specifically for transit purposes, Florida's Broward, Duval, Miami-Dade, Sarasota, and Volusia Counties, a Transit System Sales Tax may be imposed at a rate of up to 1 percent. Revenues may be used to develop rail transit systems and support new or existing adjacent bus services.

As a another example, in 1979, the State of Illinois established the Regional Transportation Authority sales tax which allows Cook, DuPage, Kane, Lake, McHenry and Will counties to support transit services with sales tax revenues. All of the revenues go toward operations of the region's three major transit systems, Metra, Pace, and the Chicago Transit Authority. In 2000, \$471 million was collected (\$60 per district capita) for transit purposes.

¹⁸ Source: Local Option Transportation Taxes in the United States, University o California Berkeley, 2001.

Table 19
Selected Transit Tax Sources in the State of Illinois¹⁹

Tax Type	Tax Name	Allowable Rates	Area	Approval Procedure
Fuel	Public Transportation Tax	Maximum of 5 percent gross receipts	Metropolitan Chicago	Transit Agency Vote
Vehicle	Parking Tax	Varies	Metropolitan Chicago	Transit Agency Vote
Property	Mass Transit Levy	One-fourth percent property tax	Mass Transit Districts	Transit Agency Vote
Sales	Use and Occupation Tax	Three-fourths percent	Metropolitan Chicago	Transit Agency Vote

In 1981, the Metro East Transit District sales tax was established in St Louis, Missouri, to fund public transit operations. An additional one-half percent sales tax, approved by St. Clair county voters in 1993, provided the funding for a MetroLink light rail system extension through East St. Louis and into its suburbs. In all, the Metro East sales taxes raise \$20.6 million annually, or about \$40 per resident of the district.

The State of Minnesota allows for the creation of regional railroad authorities for the purpose of providing secure funding for regional transit projects. Currently, seven counties comprise the membership of the metropolitan regional railroad authority. Regional railroad authorities are allowed to levy a property tax in the same manner as other special taxing districts of up to 2 mills for transit purposes. Metropolitan regional railroad authorities raised revenues of approximately \$50 million between 2003 and 2006 to support regional transit activities.

Transit Supportive Land Use Planning Techniques

Transit agencies are becoming actively involved in the development and implementation of new land use policies and programs that promote transit services as a tool to manage growth, conserve resources and promote transit use. So much so, that Congress mandates supportive transit land use to be in place as a major New Start project selection criterion for transit agencies when competing for capital investment funds. In many cities, progressive transit station zoning coupled with joint development partnerships have led to increased ridership, revitalized communities, and have created a needed income stream for transit agencies.

Transit agencies and city planners are working together to develop transit supportive land use and encourage development that provides benefits to the community and supports each organization's mission. At its core, transit oriented development (TOD - sometimes referred

¹⁹ Source: Local Option Transportation Taxes in the United States, University of California Berkeley, 2001.

to as transit villages) often incorporates mixed-use development, which may include higher density residential space and shops; commercial buildings; entertainment facilities; offices; and public open spaces. These development elements are supportive of traditional downtowns like Bettendorf and Davenport's riverfront development vision. Generally speaking, the main characteristics of a TOD include:

- Buildings are close to the street and front ample pedestrians pathways;
- Ground floor activities are vibrant and include personal services, retail or commercial businesses;
- Transit users' needs in terms of comfort and safety are fully accommodated; and
- Auto use is minimal or highly discourage through the use of traffic calming design and/or congestion pricing.

To promote the development of TODs, sometimes a density bonus is granted to developers for increasing the density of their projects. The typical arrangement calls for the developer to contribute to a transit-related improvement in return for additional development rights or considerations, for example, additional building height. In return, the transit agency gains a specific transit facility or cost item, like bus shelters, which reduce the overall transit agency cost outlay.

Joint Development

The term "joint development" can cover a wide range of agreements between a public transit agency and a private individual or company. Joint development can be defined as any formal arrangement between a public transit agency and a private party. These arrangements involve either private sector payments to the public agency, or the private sector sharing transit project capital costs in recognition of the enhanced real estate development or market potential generated by proximity to a transit facility.

There are generally two kinds of joint development: 1) revenue sharing, and 2) cost sharing. Revenue sharing usually involves leasing or selling air rights over a transit station or yard. A private developer agrees to construct a building in exchange for the right to lease the building, and pays the transit agency an annual fixed rental or rental based on a fixed percentage of the gross lease income. Cost-sharing usually involves joint public/private financing of a development project or contribution of right of way by the developer.

Developers and property owners wishing to have transit stations integrated with their commercial facilities are sometimes willing to share operating expenses and/or contribute to capital costs. Cost-sharing can substantially reduce the costs to the public of constructing selected elements of transit facilities. Typical cost-sharing arrangements include private

developer funding of discrete elements of a transit stations/shelters, or the donation of right-of-way.

For example, in Cedar Rapids, Iowa, Five Seasons Transportation shares space with other tenants in their downtown ground transfer center. Five Seasons Transportation utilizes the facility as a transfer stop and houses their bus dispatching activities. The facility also houses intercity transportation carriers, a Montessori School and other private development.

In the Orlando area, the Seminole Town Center approached the City of Sanford about serving the site with transit. The developer annually contributes \$10,000 to the transit agency, LYNX, for the cost of the service.

Tax Increment Financing Districts

Tax Increment Districts obtain funds from increases in ad valorem tax revenues that arise from a new infrastructure and/or development investment. Tax increment districts differ from benefit assessment districts in that they use the diversion of regular tax revenues rather than additional fees. Tax Increment Financing (TIF) is based on regularly recurring taxes, participation of all district taxpayers, and assessments based on property values. The incremental increase in tax revenues over a designated base year is diverted into a special fund, which can be used for debt service, revolving loan funds, or for reimbursing municipalities or private financial institutions.

Under Iowa Code § 403.19, TIF is a capital funding mechanism for municipalities to use to finance public improvement projects or to fund development incentives. TIF is based on the theory that making such improvements or attracting development will result in an increased property tax base for the municipality, and that incremental increase can then be used to finance the cost of the improvement or incentive. Before using tax increment financing to fund urban renewal projects a plan must be developed, the geographic boundaries identified, and assurances established that the project qualifies as an urban renewal project as defined by the Iowa Code.

The City of Dallas established a Tax Increment Financing Zone (TIRZ) to help fund infrastructure improvements needed for future redevelopment around the Dallas Area Rapid Transit's (DART) LRT stations. The TIRZ captures and reinvests the increase in property values within one-quarter to one-half mile radius of the LRT station. These funds are used to improve street, water and sewer infrastructure and can be used for street lighting, parking structures, sidewalks and landscaping.

Public/Private Partnerships

Transit systems can leverage their limited resources by forging new partnerships that can bring non-traditional sources of support (including cash, facilities and equipment, and in-kind services) that pay partially, or fully, for new services or facilities where it would not otherwise be feasible. Local governments and transit agencies are expanding their list of partners to include developers and property managers, employers, downtown businesses, colleges, public school systems, utilities, convention and visitor bureaus, sporting and special events managers, and various other entities.

For example, in the Quad Cities, downtown businesses could provide funds for supplemental lunch time service that would increase bus service and promote transit usage for lunch, shopping, and errands. Also, partnerships with riverfront attractions and downtown hotels and restaurants could provide funding for extended evening hours and Sunday service. Such a partnership with the transit agency and downtown business exists today in Tampa, Florida.

In Ames, Iowa, a unique partnership exists with a local university and the transit system. Ames' transit system, CyRide, partners with Iowa State University (ISU) to provide transportation to students. ISU students pay a mandatory "activity, services and building" fee that supports a variety of activities and services for all students. This fee provides several benefits such as student admission rates to concerts and athletic events and, unlimited use of CyRide. All students are charged a maximum of \$177 each fall and spring semester, and \$88.50 per summer semester.

Another example of public/private partnerships is Escambia County Area Transit in Pensacola, Florida. The transit agency entered into an agreement with two malls to underwrite the cost of transportation from the Pensacola Naval Air Station to the malls during the weekend and on nights when normal bus service was unavailable. Each mall splits all costs not covered by farebox revenues on a 50/50 basis. This premium service is provided at no cost to taxpayers and is available to the general public.

Capital Equipment

To reduce equipment capital costs and the associated operating expenses, transit properties are learning to reduce their large bus fleet by replacing them with smaller vehicles. Atlanta's transit system, MARTA, is using smaller, "minibuses" to serve routes with declining ridership and areas consisting of new developments where ridership has the potential to grow. By moving to minibuses, MARTA saves money by running smaller vehicles, at peak times, which are more fuel efficient and are easier to maintain within their existing system.

In addition, MARTA is able to pay small bus drivers less because small bus drivers do not need to have a commercial driver's license to operate the 13-seat vehicle. Small bus operators earn \$12.96 an hour, compared with \$18.51 for a large bus driver, who must have a commercial driver's license. On one route alone, the annual operating cost decreased from \$513,000 to \$260,000 after employing the new buses and modifying service hours.

Fare Increases

As a last resort, transit agencies many have to raise existing fares to help off-set rising transit costs. As this is the least popular method of raising revenues, transit patrons may be more willing to support a fare increase if they perceive a value by doing so. This is accomplished when transit patrons are afforded the opportunity to participate in the decision-making. By inviting transit patrons to sit at the decision making table, they are better able to understand the direct relationship of increased costs to transit service benefits.

For example, when the Twin Cities' Metro Transit system was planning to raise fares and modify existing services, transit riders were encourage to actively participate in town hall meetings to assist in the decision-making. In the end, patrons decided to modify lower performing routes to be more efficient and supported a fare increase which provides more frequent service on highly performing routes.

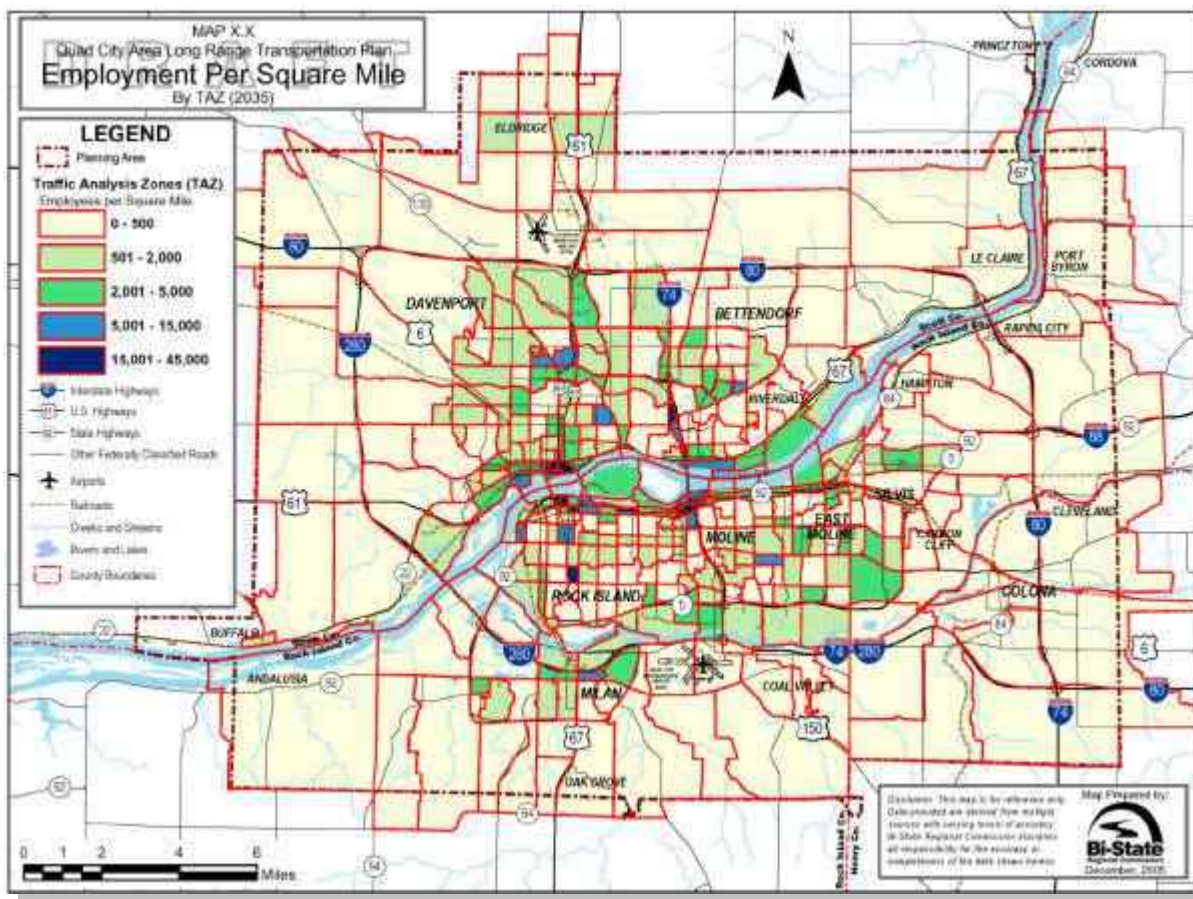
Any fare increase, however, will have a direct impact to ridership. Historically, transit systems imposing a ten percent increase of bus fares will see a 3 to 4 percent decrease in ridership.

VIII. CONCLUSION

A. Summary of Findings

1. Existing riders are generally satisfied with bus service provided by Bettendorf Transit and CitiBus
2. Bi-State's travel demand model indicates that in year 2035, the highest employment density in the Iowa Quad Cities would continue to be located at the Kimberly Road and Brady/Harrison Street intersection; downtown Davenport; I-74 in Bettendorf; the intersection of Middle Road and Elmore Avenue; and 18th Street/Middle Road.

Figure 12
2035 Employment Density



Similarly, housing density would continue to be concentrated in areas where they are high now: in Davenport, south of Kimberly Road generally between Division Street and east of Brady/Harrison Streets; and in Bettendorf, the southwest quadrant of Kimberly Road and Elmore Avenue, and 18th Street/Middle Road. As such, focusing transit service in these areas of the Iowa Quad Cities appears to be a top priority.

3. The various Baseline Alternatives are intended to increase ridership by improving service to transit trip generators while eliminating less productive route segments. Implementation of Baseline A would not result in an increase in operating and capital cost. Baseline B, however, includes new major transit centers at St. Ambrose University and 18th Street/Spruce Hills Drive (to replace the existing Duck Creek Mall transfer facility) and new service on the Jersey Ridge Corridor. These improvements would require additional operating cost and capital cost (purchase of new buses, construction of transit centers).
4. The various Baseline Alternatives also include three levels of operating cost increases (in current year dollars):
 - Baseline Plus 5 – An increase of \$200,000 a year, which includes additional Saturday service on all Bettendorf Transit and CitiBus routes
 - Baseline Plus 10 – An increase of \$400,000 a year, which includes additional Saturday and Sunday service on all routes; and service on the Jersey Ridge corridor
 - Baseline Plus 15 – An increase of \$600,000 a year, which includes additional Saturday and Sunday service on all routes; service on the Jersey Ridge corridor; and additional demand response service.
5. The proposed Jersey Ridge route would serve an average of 150 passengers per day if it were implemented today, and 190 passengers per day in year 2035.
6. Of the seven Build alternatives, commuter/express service on the Brady/Harrison corridor is expected to have the highest number of riders per day: 325 in year 2035. This ridership estimate is in addition to the passengers that currently use the existing Route 4 service today.
7. The range of increase in annual operating cost in year 2035 dollars among the Baseline and Build alternatives is from \$410,000 to \$2.29 million. The lowest

increase is associated with the Baseline Plus 5 service, while the highest increase is with the future 67th Street limited stop service.

8. The expected change in annual operating cost per passenger ranges from a reduction of 22 cents (Brady/Harrison commuter service) to \$1.47 (Locust Street/Middle Road limited stop service).
9. The range of capital costs associated with the Baseline and Build alternatives is from \$700,000 (Baseline Plus 5) to nearly \$16 million (67th Street limited stop service). These capital costs include:
 - Procurement of new buses
 - Installation of new shelters, enhanced lighting and signage, and concrete bus pads at proposed bus stops
 - New transit centers at St. Ambrose University, 16th and Main Streets, and 18th Street/Spruce Hills Drive.
10. The proposed 15-minute headways included in the Build alternatives, and additional hours of service on weekdays and weekends also in the Baseline alternatives, would increase the access to public transit of employees currently working outside the typical 8:00 AM to 5:00 PM shift. These potential patrons would include employees of retail and restaurant establishments in downtown Davenport, Northpark Mall, the 53rd Street corridor, Elmore Avenue, Middle Road and Kimberly Road.
11. The Baseline and Build alternatives entail improving mainly service hours and frequency (except for future 67th Street), there is minimal, if no, impact on existing cultural, historical and environmental resources in the Iowa Quad Cities. These include structures, water bodies, parks and trails.

In order to facilitate the implementation of a rapid transit system in the Iowa Quad Cities using the preceding findings, this Study recommends the following actions.

B. Locally Preferred Strategy

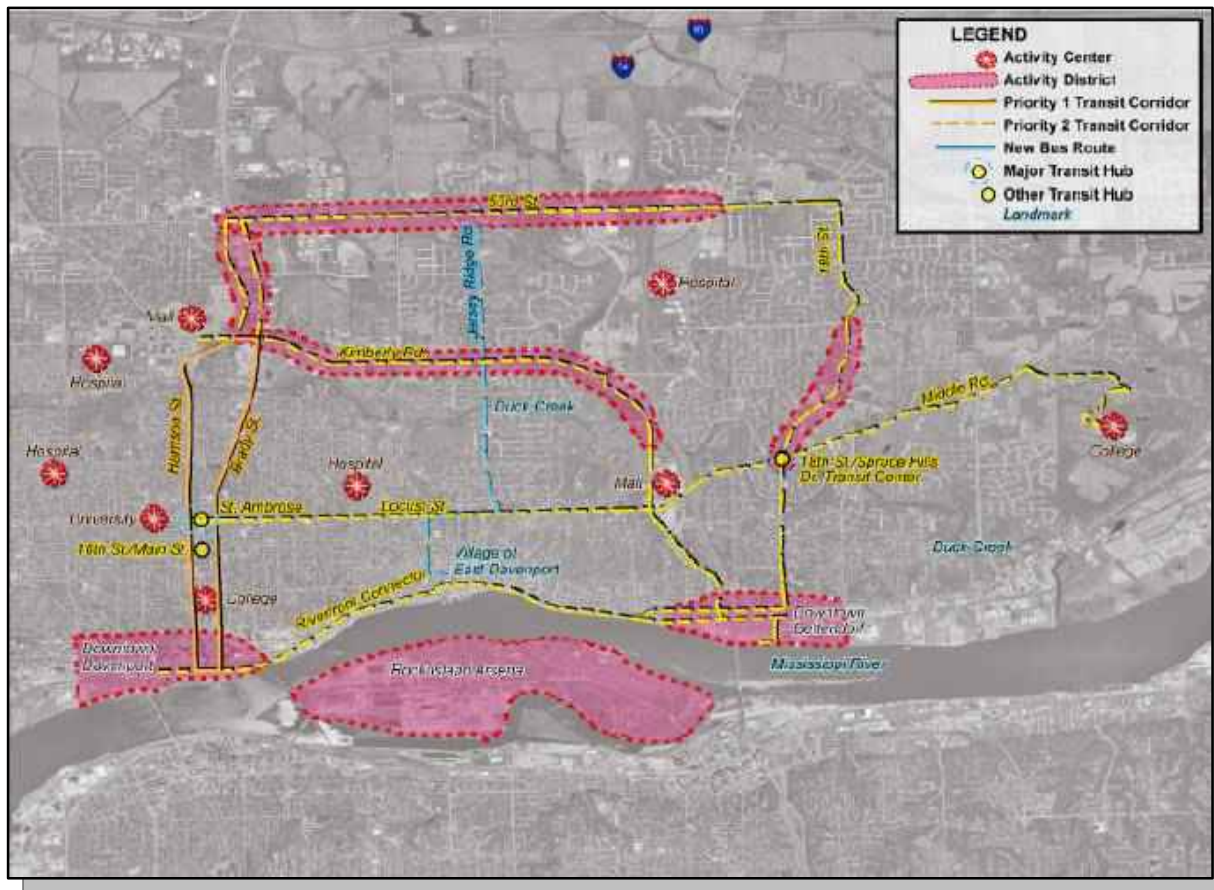
The locally preferred strategy for improving transit service in the Iowa Quad Cities includes the following elements:

Phase I: Platform for Progress

This phase of improvements would strengthen the current transit service through low-cost refinements. The timeline for this phase is between 2006 and 2011, and entails action on the following items, using the Baseline alternatives defined in this Study.

- Improve efficiency of Bettendorf Transit and Davenport CitiBus systems.
- Shorten trip times to St. Ambrose University, Scott Community College and downtown Davenport.
- Improve amenities at existing bus stops.
- Implement a uniform fare structure for Bettendorf Transit and Davenport CitiBus.
- Adopt transit priority corridors. Figure 13 presents these six corridors, which include rapid transit service, commuter service or express service. Designating transit priority corridors will guide future capital improvements for transportation facilities
- Create development standards for transit priority corridors.
- Market transit services to students and government employees.
- Coordinate transit marketing with Visitors Bureau and Chambers of Commerce.

Figure 13
Transit Priority Corridors



Phase II: Building Momentum

This second phase of improvements to transit service in the Iowa Quad Cities builds upon the gains made in Phase I. It requires additional capital and operating funds for implementation. This phase would span approximately 10 years, between 2009 and 2019.

- Construct new transit hubs at St. Ambrose University and 16th/Main Streets in Davenport, and 18th Street/Spruce Hills Drive in Bettendorf.
- Extend hours of service.
- Extend weekend service.
- Serve Jersey Ridge area.

- Continue planning for rapid transit service on Transit Priority Corridors.
- Intensify development density at downtowns and on Transit Priority Corridors.
- Increase sales of PassPORT for employees through expanded employer programs.

Phase III: Get On Board!

This phase would begin approximately in year 2015 and continue forward, depending on how the building blocks identified in the first two phases are laid out.

- Begin rapid transit service in the Brady/Harrison corridor using special vehicles.
- Expand rapid transit service to other priority corridors.
- Build park-and-ride lots.
- Build additional transit centers.
- Establish Scott County Regional Transit District.

Refining these recommendations will continue as the Iowa Quad Cities reach certain milestones. Recommendations for a Locally Preferred Strategy for improving transit service in the Iowa Quad Cities would not preclude implementation of a fixed-guideway system in the future.