

FINAL REPORT

# Comprehensive Transit Analysis

Submitted to:  
Rockford Mass Transit District



Submitted by:  
The Corradino Group, Inc.

In association with:  
Parsons Brinckerhoff

September 2013





## ACKNOWLEDGEMENT

This project was conducted in cooperation with the Illinois Department of Transportation and the U.S. Department of Transportation, Federal Transit Administration.

## DISCLAIMER

The contents of this report reflect the view of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Illinois Department of Transportation or the Federal Transit Administration. This report does not constitute a standard, specification, or regulation.





# TABLE OF CONTENTS

<b>Executive Summary</b>	<b>1</b>
<b>Task 1 – Existing and Potential Conditions</b>	
1. RMTD Service	7
Funding	9
Routes	9
Fares	11
2. Land Use, Roadways, and Demographics	13
Land Use	13
Roadways	14
Demographics	14
3. Related Studies	21
Boone County, Highway 173 Corridor Plan	21
Envision North Main Street Corridor Plan	22
Kishwaukee Street Corridor Revitalization Plan	23
Northern Illinois Transportation Initiative	24
Rockford-Belvidere-Big Timber-Schaumburg	24
Rockford-Belvedere-Harvard	24
Coordinated Public Transit-Human Services Transportation Plan	24
4. Passenger Data Collection	27
Onboard Passenger Survey	27
Boarding and Alighting Counts	32
5. Stakeholder Meetings	37
6. East Side Transfer Center Connection	41
Option 1: East Side Transfer Center – Belvidere – Kmart – Walmart	41
Option 2: East Side Transfer Center – Belvidere – Sheffield/SA Medical – Walmart	44
Option 3: East Side Transfer Center – Belvidere – Julien St – Andres Dr – Belvidere Rd – Walmart	47
Option 4: East Side Transfer Center – State St – Pearl St – Oasis	50
Option 5: East Side Transfer Center – State St – Pearl St – Oasis – Walmart	53
Option 6: East Side Transfer Center – East State Street – Boone County Council on Aging –State St – Swedish American Hospital– Pearl St – Walmart	56
Evaluation of Options	59
<b>Task 2 – Current Service and Potential Conditions Evaluation</b>	
7. Performance Review	65
Service Coverage	65
Route Productivity Comparison	66
RMTD Performance Measures	74





## TABLE OF CONTENTS (CONTINUED)

### Task 2 – Current Service and Potential Conditions Evaluation (continued)

8. RMTD Future Service Demand	81
New Origin Locations	81
New Destination Locations	83
Future Markets	84
Choice Riders from Outer Rockford Neighborhoods and the Suburbs	84
Elderly	85
College Students	85
Expected Riders	85
Comparison to Other Modes	87
9. Fares and Fareboxes	91
Fare Analysis	91
Farebox Hardware Evaluation	92

### Task 3 – Service Alternatives

10. Operating Scenarios	95
Funding Scenario 1 – Reduced Funding	98
Funding Scenario 2 – No Change to Funding	109
Funding Scenario 3 – Increase in Funding	114

### Task 4 – Preferred Alternative

11. Service Recommendations	121
Weekday Daytime Route Network	121
Weeknight Route Network	126
Saturday Route Network	128
Sunday Route Network	129
Revenue Hours and Cost Estimate	129
Shelters	135

### Task 5 – Implementation Plan

12. Implementation	137
Routes and Coverage	137
Route Schedules	141
Capital and Operating Budgets	141
Service Expansion/Improvement Options	142
Sampling Plan	143





## TABLE OF CONTENTS (CONTINUED)

<b>Appendix 1</b>	<b>Passenger Onboard Survey Summary</b>
<b>Appendix 2</b>	<b>Boardings and Alightings by Route</b>
<b>Appendix 3</b>	<b>Service Standards</b>
<b>Appendix 4</b>	<b>Fare Analysis</b>
<b>Appendix 5</b>	<b>Cost Allocation Plan Review</b>
<b>Appendix 6</b>	<b>Transit Service Analysis</b>
<b>Appendix 7</b>	<b>Service Maps</b>
<b>Appendix 8</b>	<b>Consolidated Reports</b>
<b>Appendix 9</b>	<b>Shelter Map</b>
<b>Appendix 10</b>	<b>Detailed Operating Schedules</b>
<b>Appendix 11</b>	<b>Run Cut Paddles</b>
<b>Appendix 12</b>	<b>Sampling Plan</b>

i:\projects\4086\wp\reports\final report\final report text.docx





# LIST OF FIGURES

Figure S-1	Monday-Saturday Daytime Proposed System Route	2
Figure S-2	Weeknight Proposed System Map	4
Figure S-3	Sunday Proposed System Map	5
Figure 1-1	Weekday and Saturday Routes	7
Figure 1-2	Nights and Sunday Routes	8
Figure 4-1	Survey Questionnaire	29
Figure 4-2	Trip Origins	27
Figure 4-3	Trip Destinations	30
Figure 4-4	Ridership by Age	30
Figure 4-5	Licensed Drivers	31
Figure 4-6	Frequency of RMTD Use	31
Figure 4-7	Quality of Service	31
Figure 4-8	On-time Performance	32
Figure 4-9	Boarding Counts by Stop	35
Figure 6-1	Option 1	41
Figure 6-2	Option 1 Population Density	42
Figure 6-3	Option 1 Minority Population Density	43
Figure 6-4	Option 2	44
Figure 6-5	Option 2 Population Density	45
Figure 6-6	Option 2 Minority Population Density	46
Figure 6-7	Option 3	47
Figure 6-8	Option 3 Population Density	48
Figure 6-9	Option 3 Minority Population Density	49
Figure 6-10	Option 4	50
Figure 6-11	Option 4 Population Density	51
Figure 6-12	Option 4 Minority Population Density	52
Figure 6-13	Option 5	53
Figure 6-14	Option 5 Population Density	54
Figure 6-15	Option 5 Minority Population Density	55
Figure 6-16	Option 6	56
Figure 6-17	Option 6 Population Density	57
Figure 6-18	Option 6 Minority Population Density	58
Figure 6-19	Implemented Belvidere Route	63
Figure 7-1	Major Transit Generators	65
Figure 7-2	Weekday Boardings	67
Figure 7-3	Evening Boardings	71
Figure 7-4	Saturday Boardings	72
Figure 7-5	Sunday Boardings	73
Figure 7-6	Cost Per Passenger Trip Peer Comparison	76
Figure 7-7	Passenger Trips per Revenue Hour Peer Comparison	77
Figure 7-8	Passenger Trips per Revenue Mile Peer Comparison	78
Figure 7-9	Farebox Recovery Peer Comparison	79





## LIST OF FIGURES (CONTINUED)

Figure 8-1	2040 Population Density	81
Figure 8-2	2000-2040 Change in Population	82
Figure 8-3	2040 Employment Density	83
Figure 8-4	2000-2040 Change in Employment	84
Figure 8-5	Projected 2040 Origin Trips	86
Figure 8-6	Projected 2040 Destination Trips	87
Figure 8-7	Gasoline Prices 1918 to Current	89
Figure 10-1	Service Scenario Hierarchy	95
Figure 10-2	Proposed Segment Gain/Loss (All Scenarios)	96
Figure 10-3	Proposed Night and Sunday Segment Gain/Loss (All Scenarios)	97
Figure 10-4	Proposed Scenario 1 Monday-Friday System	104
Figure 10-5	Proposed Change Existing to Scenario 1 Monday-Friday Service Span	105
Figure 10-6	Proposed Change Existing to Scenario 1 Monday-Friday Frequency	106
Figure 10-7	Proposed Scenarios 1-3 Night/Sunday System	108
Figure 10-8	Proposed Scenario 2 Monday-Friday System	111
Figure 10-9	Proposed Change Scenario 1 to 2 Monday-Friday Service Span	112
Figure 10-10	Proposed Change Scenario 1 to 2 Monday-Friday Frequency	113
Figure 10-11	Proposed Scenario 3 Monday-Friday System	117
Figure 10-12	Proposed Change Scenario 2 to 3 Monday-Friday Frequency	118
Figure 10-13	Proposed Change Scenario 2 to 3 Monday-Friday Service Span	119
Figure 11-1	Monday-Saturday Daytime Proposed System Map	123
Figure 11-2	Weeknight Proposed System Map	127
Figure 11-3	Sunday Proposed System Map	130
Figure 11-4	Minority Populations	133
Figure 11-5	Hispanic or Latino Population	134
Figure 11-6	Existing and Recommended Shelters	136
Figure 12-1	Monday-Saturday Daytime Proposed System Map	138
Figure 12-2	Weeknight Proposed System Map	139
Figure 12-3	Sunday Proposed System Map	140







## LIST OF TABLES

Table 2-1	Roadway Projects Impacting Transit	15
Table 2-2	Population Growth	16
Table 2-3	Population Age	16
Table 2-4	Population by Gender	16
Table 2-5	Population by Race	17
Table 2-6	Housing Units by Tenure	17
Table 2-7	ACS Means of Transportation to Work	18
Table 2-8	Vehicles Available by Household	18
Table 2-9	Households with Income below Poverty Level	19
Table 2-10	Household Income in Last 12 Months	19
Table 4-1	Weekday Boarding by Route	33
Table 6-1	Trip Length for In Town Route Segment	59
Table 6-2	Trip Length for In Town Segment	59
Table 6-3	Travel Time, Cycle Length, Frequency, Vehicle Requirement	60
Table 6-4	Annual Operating Cost	60
Table 6-5	Weekday Service Operating Cost	61
Table 6-6	Weekday and Saturday Operating Cost	61
Table 6-7	Weekday, Saturday and Sunday Service Cost	62
Table 7-1	Weekday Route Performance	66
Table 7-2	2009 NTD Fixed Route Service Statistics	75
Table 7-3	Individual Route Performance	80
Table 8-1	Mode Share Assumptions for Expected Rider Calculation	85
Table 8-2	Expected Additional 2040 Origin and Destination Trips	86
Table 8-3	Principal Means of Transportation to Work (Thousands)	88
Table 8-4	National Average Costs per Mile	90
Table 9-1	RMTD Fares	91
Table 10-1	Revenue Hours and Total Cost by Scenario	98
Table 10-2	Scenario 1 Service Summary	99
Table 10-3	Scenario 2 Service Summary	110
Table 10-4	Scenario 3 Service Summary	115
Table 11-1	Proposed RMTD Network by Route and Time Period	122
Table 11-2	Annual Revenue Hour Estimate for Proposed Network	131
Table 11-3	Annual Cost Estimate for Proposed Network	131
Table 12-1	Preferred Alternative Five-year Capital and Operating Budget	141







## Executive Summary

RMTD's Comprehensive Transit Analysis provides an in-depth, existing route analysis. The study team has used this analysis to recommend ways RMTD can deal with their steadily increasing ridership, expanding community boundaries, and new ridership generators, including the recently opened East Side Transfer Center.

The study team used all of the data collected in this study to develop and analyze three alternatives (or operating scenarios) based on three potential funding levels. Scenario 1 assumed that RMTD will have approximately \$700,000 less in its FY 2012 budget than currently budgeted. It is the base scenario and includes many recommended efficiency changes, which RMTD can implement regardless of funding level. Scenario 2 assumed that RMTD will have the same operating budget for future fiscal years as the FY2012 budget. It includes many recommended efficiency changes, including eliminating some existing routes and adding some new ones. Scenario 3 assumed that RMTD will have more funding than what is currently available and therefore contains additional hours and bus routes. Ultimately, RMTD and the study team presented Scenario 2 to the public.

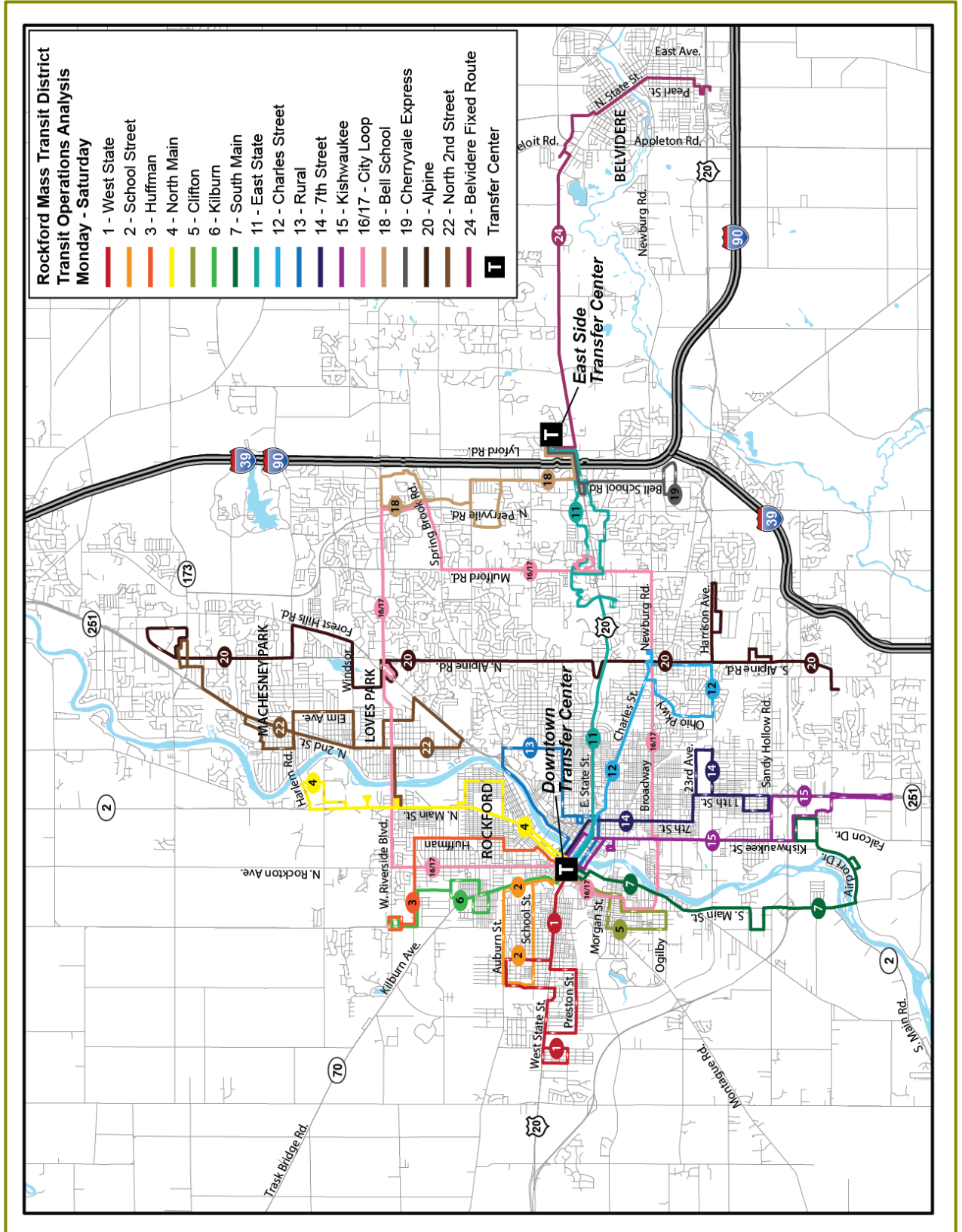
After much consideration, RMTD concluded that their bus routes should remain essentially the same as they are today with some routing modifications, efficiency improvements, and new Routes 18 (Bell School), 19 (CherryVale Express), and 24 (Belvidere). Since RMTD ridership is increasing and existing routes appear to meet riders' needs, RMTD did not see a need for making major routing modifications and efficiency improvements. RMTD therefore went with a modified Scenario 2. This modified scenario has a comparable number of revenue hours to those today.

The proposed weekday routing for the modified scenario is shown in **Figure S-1** and includes the addition of Routes 18 (Bell School), 19 (CherryVale Express), and 24 (Belvidere). Route 18 Bell School would operate from the East Side Transfer Center to Riverside Boulevard and Bell School Road, serving NCO on McFarland Road and the newly constructed cancer center at Spring Brook and Bell School Roads. Route 19 would operate from the East Side Transfer Center to CherryVale Mall and would replace the alignment Route 11 currently serves. RMTD would eliminate Route 23 (Growth Enterprises), given its low ridership resulting from Growth Enterprise's cutbacks. Route 24 (Belvidere) would operate from the East Side Transfer Center to Belvidere primarily via East State Street. The study team recommends making the Saturday network identical to the weekday network, so the alignment changes for weekday service would apply to the Saturday routes as well.





Figure S-1 – Monday-Saturday Daytime Proposed System Map





Under the modified scenario, RMTD would make only minor adjustments to their existing weeknight route network. They would modify Routes 34 (Harrison/Alpine) and 36 (Perryville/Alpine) to better serve their nighttime passengers. **Figure S-2** depicts the weeknight system map.

The Sunday route network will remain the same, with five bus routes. Alignment changes proposed for the Sunday network almost match those proposed for the weeknight network. RMTD would modify Route 44 (Harrison/Alpine) under this modified scenario and add a small section of Route 36 (Perryville/Alpine) primarily serving the CherryVale Mall to Route 42 (East State). The other parts of Route 36 would not have Sunday Service. **Figure S-3** depicts the Sunday system map.

The modified Scenario 2 addresses new destinations and growth in the community and uses the East Side Transfer Center through new routing and route modifications, thus meeting this study's goals.





Figure S-2 – Weeknight Proposed System Map

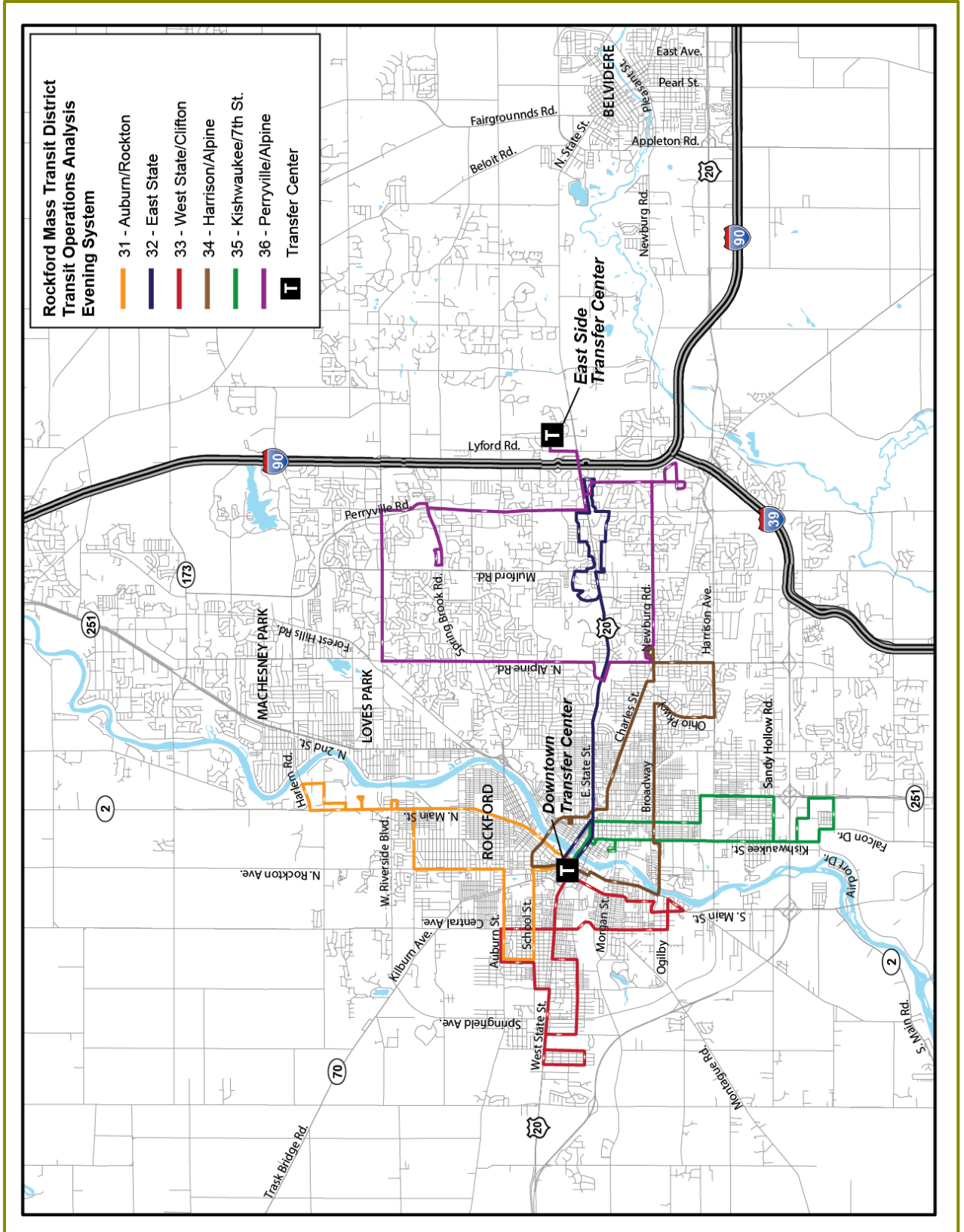
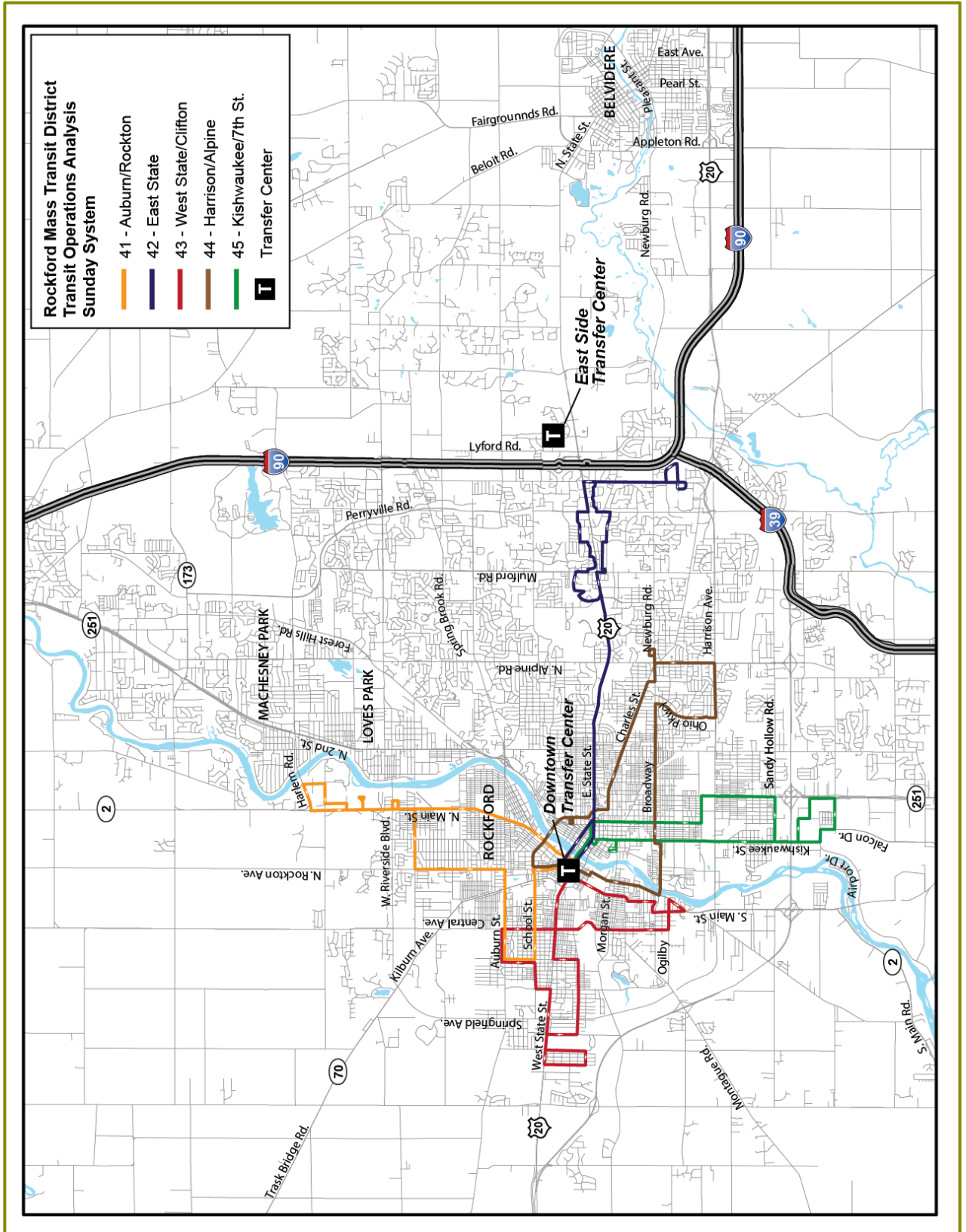




Figure S-3 – Sunday Proposed System Map





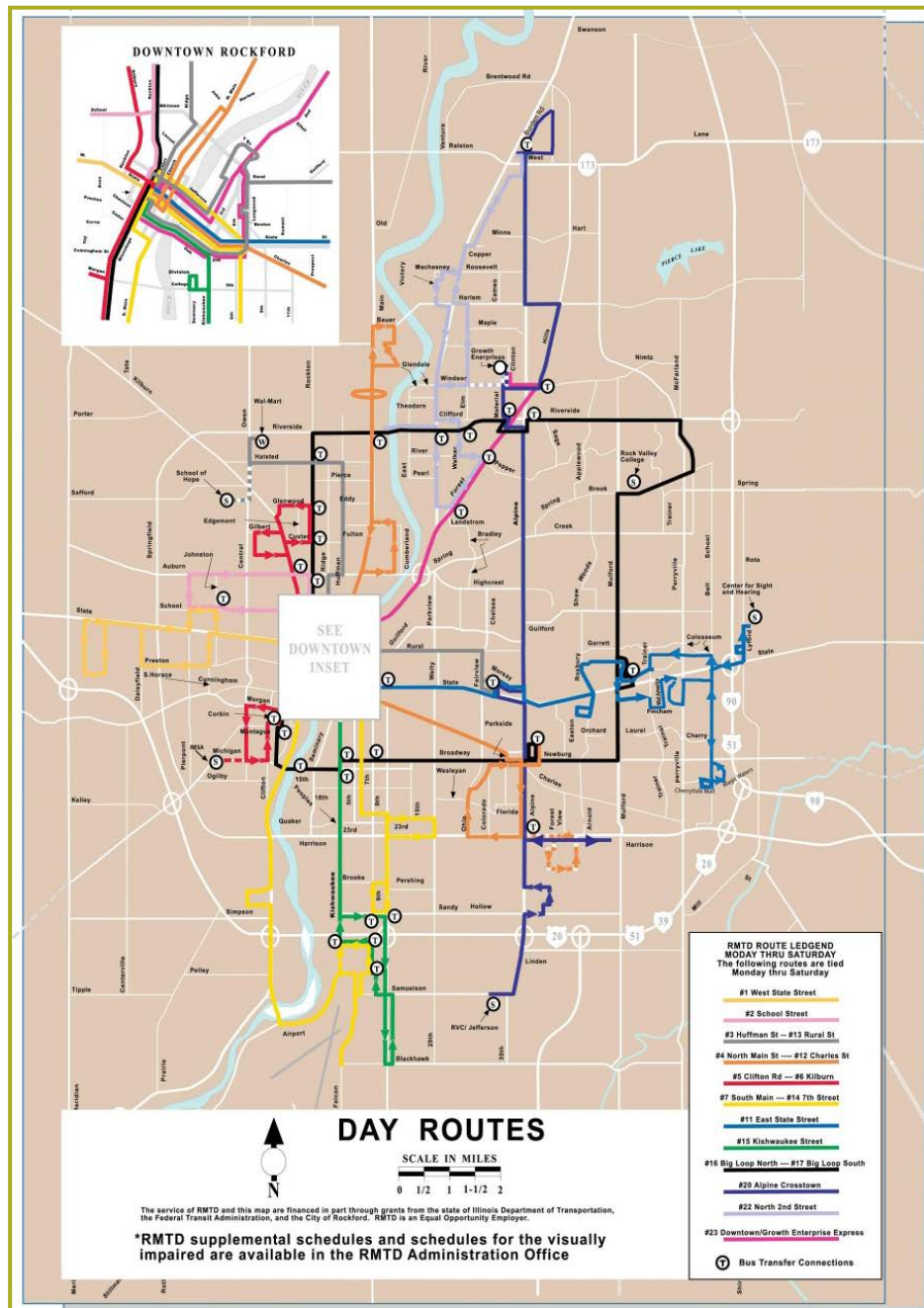




# 1. RMTD SERVICE

The Rockford Mass Transit District (RMTD) provides fixed route and paratransit service to Rockford, Loves Park, and Machesney Park. It currently operates 17 weekday and Saturday routes (Figure 1-1) and six weeknight and Sunday routes (Figure 1-2).

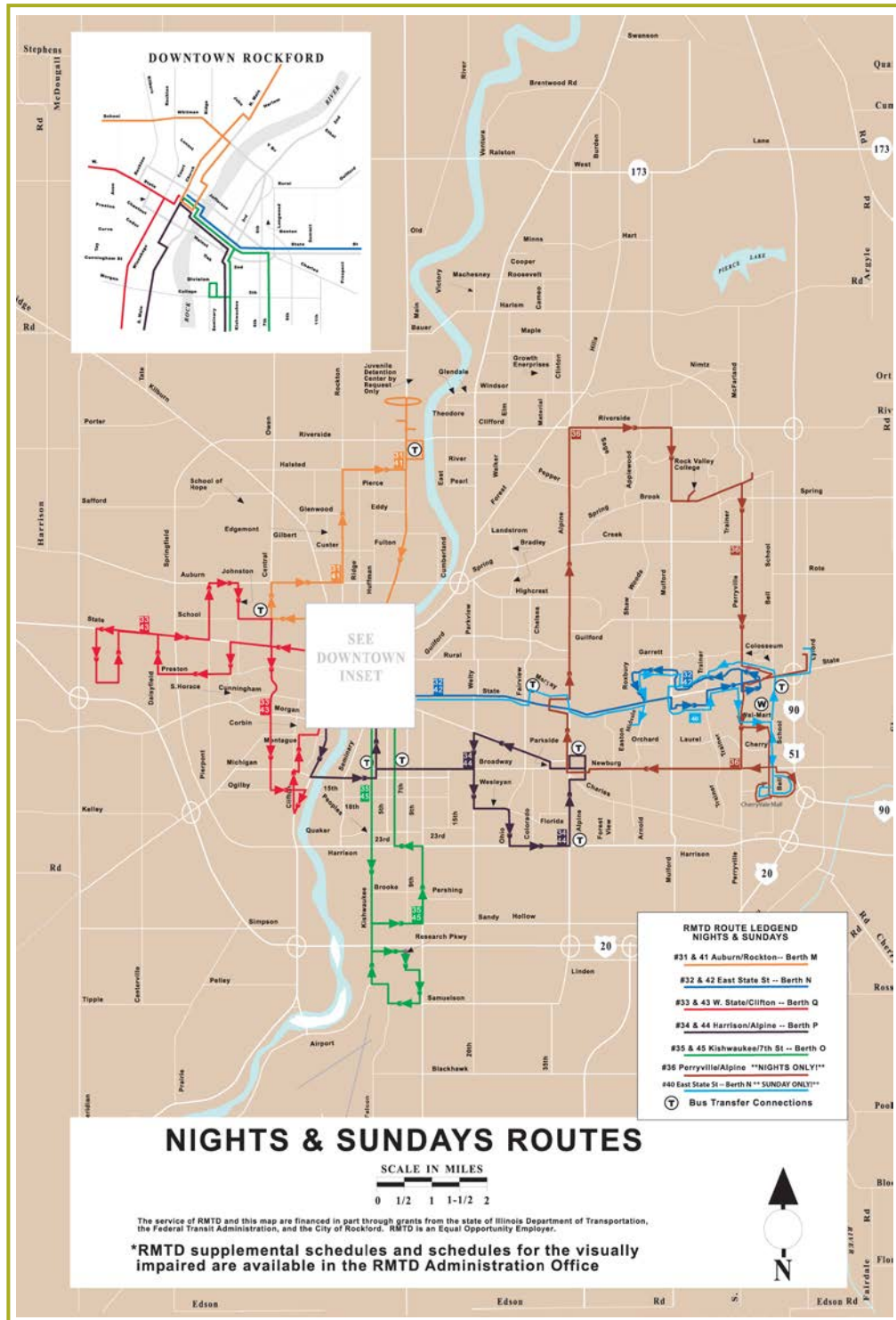
Figure 1-1 – Weekday and Saturday Routes





RMTD operates from 5:15 a.m. until 11:15 p.m. during the week, from 6:00 a.m. until 5:45 p.m. on Saturdays, and from 9:15 a.m. until 5:15 p.m. on Sundays. Route 42 (East State), however, begins at 8:15 a.m. on Sundays. These services run every day, except on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

Figure 1-2 – Nights and Sunday Routes





RMTD also operates complementary ADA demand-response paratransit service for its existing routes. These services also operate every day, except on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

## Funding

RMTD's transit revenues have been increasing. RMTD saw its 2009-2010 budget year revenues top \$1.12 million, approximately 20 percent more than the 2006-2007 budget year revenue totaling just over \$900,000. The District generates approximately \$1.4 million in fares, and nearly \$60,000 in advertising. Non-operating-funds totaled approximately \$11.3 million. Of that amount, \$8 million comes from the State of Illinois; \$1.5 million comes from the City of Rockford; \$1.1 million from the federal government, \$224,000 from the City of Loves Park, \$134,000 from the Village of Machesney Park, and \$86,000 from Boone County.

## Routes

RMTD operates the following 17 routes:

### City Loop North and South

The City Loop route is a bidirectional route sweeping the RMTD service area. As one bus leaves the downtown Transfer Center to head north (City Loop North), another bus heads out south to travel the same route in the opposite direction. The City Loop routes are the system's backbone. All other routes connect at some point along the way to the City Loop, making transferring to a connecting route easier and more efficient.

### Route 1 – West State

Route 1--West State runs every 45 minutes Monday through Saturday, serving Concord Commons, Crusader Clinic and Farm & Fleet.

### Route 2 – School Street

Route 2—School Street runs every 30 minutes, serving Fairgrounds Housing, Auburn High School, Auburn Street IGA, and Public Aid.

### Route 3 – Huffman

Route 3—Huffman mostly runs at 1.5 hour intervals between 5:15 a.m. and 6:40 p.m., serving Court Street, Ridge Street, and Walmart. It also serves tthe Barbara Olsen School of Hope at approximately 7:45 a.m. and 3:20 p.m. Most of the runs operate Monday through Saturday, except the 5:15 a.m. and 6:00 p.m. outbound runs from the RMTD Transfer Center and the 5:45 a.m. and 6:25 p.m. inbound runs from Halsted & Rockton.

### Route 4 – North Main

Route 4—North Main runs hourly with three additional runs at 6:45 a.m., 2:45 p.m., and 3:45 p.m. outbound from the RMTD Transfer Center and at 7:22 a.m., 3:22 p.m., and 3:45 p.m. inbound from Singer. All the runs operate on weekdays and Saturdays, except the 5:15 a.m. outbound run from the





RMTD Transfer Center, the 6:00 a.m. inbound run from Main and Auburn, and the three additional runs in each direction. These runs only operate on weekdays.

Route 4—North Main serves Cumberland Avenue, North Towne Mall, River Bluff Nursing Home, Hilander's, Singer, North Rock Industrial Park, and the Juvenile Detention Center.

### **Route 5 – Clifton**

Route 5—Clifton runs hourly with six additional outbound runs at 7:15 a.m., 8:15 a.m., 9:15 a.m., 2:15 p.m., 3:15 p.m., and 4:15 p.m. from the RMTD Transfer Center and six additional inbound runs at 7:30 a.m., 8:30 a.m., 9:30 a.m., 2:30 p.m., 3:30 p.m., and 4:30 p.m. from Ogilby and Clifton. All runs operate on weekdays except the 5:45 a.m. inbound run from the RMTD Transfer Center, the 6:00 a.m. outbound run from Ogilby and Clifton, and the six additional runs in each direction. These runs only operate on weekdays.

Route 5—Clifton serves the Montague Public Library branch, Klehm Arboretum, and the Booker Washington Center.

### **Route 6 – Kilburn**

Route 6—Kilburn runs hourly with six additional outbound runs from the RMTD Transfer Center at 6:45 a.m., 7:45 a.m., 8:45 a.m., 1:45 p.m., 2:45 p.m., and 3:45 p.m. and six additional inbound runs from Liberty and Kilburn at 5:33 a.m., 7:03 a.m., 8:03 a.m., 9:03 a.m., 2:03 p.m., 3:03 p.m., and 4:03 p.m. All but these additional runs operate Monday through Saturday. The additional runs only operate on weekdays.

Route 6—Kilburn serves Collier Gardens and the Rockford Health System.

### **Route 7 – South Main**

Route 7—South Main runs hourly from Monday to Saturday. It serves South Main IGA, South Rock Industrial Park, UPS, and the Greater Rockford Airport.

### **Route 11 – East State Street**

Route 11—East State Street operates every half hour Monday-Saturday from the RMTD Transfer Center, except for the 5:15 a.m., 5:45 a.m., 6:45 a.m., 3:45 p.m., and 4:45 p.m. runs. These runs do not operate on Saturdays.

Route 11—East State Street serves the Swedish American Hospital, OSF/St. Anthony's Health facilities, Midvale Residences, Forest Plaza, Mulford Village, Clock Tower, Greyhound, the Center for Sight and Hearing, and Target.

### **Route 12 – Charles Street**

Route 12—Charles Street operates almost hourly with additional three additional outbound runs from the RMTD Transfer Center at 7:45 a.m., 8:45 a.m., and 1:55 p.m. and three additional inbound runs from Colonial Village at 8:20 a.m., 9:25 a.m., and 2:20 p.m. These additional runs and the earliest inbound and outbound run do not operate on Saturdays.





Route 12—Charles Street serves Swedish American Hospital, Logli's, Colonial Village, Buckbee Apartments, and Flynn Middle School.

### Route 13 – Rural Street

Route 13—Rural Street operates every 1.5 hours Monday through Saturday. It connects with the Alpine Crosstown route and the East State Street route at Lynmar and Morsay Drive and serves the Park Terrace Apartments, the YMCA, and Hilander.

### Route 14 – 7th Street

Route 14—7<sup>th</sup> Street operates hourly Monday through Saturday. It also has six outbound runs from the RMTD Transfer Center at 8:45 a.m., 9:45 a.m., 10:45 a.m., 1:45 p.m., 2:45 p.m., and 3:45 p.m. and six inbound runs from 11<sup>th</sup> Street and 22<sup>nd</sup> Avenue at 9:20 a.m., 10:20 a.m., 11:20 a.m., 2:20 p.m., 3:20 p.m., and 4:20 p.m. The first weekday run in each direction and these additional runs do not operate on Saturdays.

Route 14—7<sup>th</sup> Street serves Ken Rock, Job Services, Mobility Connection, and Sandy Hollow Kmart.

### Route 15 – Kishwaukee

Route 15—Kishwaukee operates hourly Monday through Saturday. It also has six outbound runs from the RMTD Transfer Center at 5:45 a.m., 6:45 a.m., 7:45 a.m., 1:45 p.m., 2:45 p.m., and 3:45 p.m. and six inbound runs from Blackhawk and 11<sup>th</sup> Avenue at 6:10 a.m., 7:10 a.m., 8:10 a.m., 2:10 p.m., 3:10 p.m., and 4:10 p.m.

Route 15—Kishwaukee serves Brewington Oaks, Sandy Hollow Kmart, and the Research Park Industrial area.

### Routes 16 and 17 – City Loop North and City Loop South

The City Loop route is a bidirectional route which forms a loop in the middle of the RMTD service area. One bus leaves the downtown Transfer Center and heads north (City Loop North) and a second bus heads south (City Loop South) to travel the same route in the opposite direction. The City Loop routes connect to all other routes in the system, allowing transfers at locations other than downtown.

Routes 16 and 17 leave the RMTD Transfer Center every 45 minutes between 5:15 a.m. and 5:15 p.m. weekdays. All but the first and last runs operate on Saturdays.

### Route 20 – Alpine Crosstown and Alpine Crosstown Express

Route 20--Alpine Crosstown operates approximately every hour southbound from the Walmart on Riverside between 6:35 a.m. and 5:35 p.m. and northbound from Rock Valley College/Jefferson High School between 7:10 a.m. and 4:10 p.m. Route 20 does not have a northbound run at 9:10 a.m.

Route 20--Alpine Crosstown originates at the Rock Vally College/Jefferson High School campus on Samuelson Road. It serves Colonial Village, East Rock Industrial Park, the Post Office Main Branch, Brookside Medical, Edgebrook Shopping Center, Luke's Mobile Home, Logli's, and the Route 173 Target





and Home Depot, which is a transfer point to the North 2nd Route. This route also services Growth Enterprises at 8:05 a.m. and 3:30 p.m.

The Alpine Crosstown Express provides open-door express service from the RMTD Transfer Center to Colonial Village at 5:15 a.m. and 5:50 a.m. and from East State Street and Lynmar to Colonial Village at 12:35 p.m. It also provides inbound open-door express service from East State Street and Lynmar to the RMTD Transfer Center at 1:00 p.m., 4:50 p.m., and 5:50 p.m. These runs only operate Monday through Friday.

On Saturdays, the Alpine Crosstown Express operates outbound from the RMTD Transfer Center to Colonial Village at 9:15 a.m. and 10:15 a.m. and inbound from East State Street and Lynmar to the RMTD Transfer Center at 10:40 a.m., 4:50 p.m., and 5:50 p.m.

### **Route 22 – North 2nd Street and North 2<sup>nd</sup> Street Express**

Route 22—North 2<sup>nd</sup> Street has hourly outbound service from North 2<sup>nd</sup> Street and Landstrom between 5:48 a.m. and 5:48 p.m. On Saturdays, this route operates only between 9:48 a.m. and 4:48 p.m. Route 22--North 2<sup>nd</sup> Street has hourly inbound service from the Machesny Mall between 6:22 a.m. and 6:22 p.m. On Saturdays, this route only has hourly outbound service from North 2<sup>nd</sup> and Landstrom between 9:48 a.m. and 4:48 p.m. and inbound service from the Machesny Mall between 10:22 a.m. and 5:22 p.m.

Route 22—North 2<sup>nd</sup> Street serves Loves Park and Machesney Park along the North 2nd Street Corridor to Route 173, connecting with the Alpine Crosstown Route. It also serves Growth Enterprises at 8:05 a.m. and 3:05 p.m. Monday through Friday.

The North 2nd Street Express has three outbound runs between the RMTD Transfer Center and North 2<sup>nd</sup> Street and Landstrom at 5:30 a.m., 10:35 a.m., and 12:45 a.m. An additional run from the RMTD Transfer Center at 5:45 p.m. continues further north to Riverside and Alpine. These runs only operate Monday through Friday.

The North 2<sup>nd</sup> Street Express also has three inbound runs between Landstrom Road and North 2<sup>nd</sup> Street and the RMTD Transfer Center at 10:48 a.m., 1:30 p.m., and 6:37 p.m. An additional run operates further north from the Target on Route 173 to the RMTD Transfer Center at 1:15 p.m. These runs only operate Monday through Friday.

On Saturdays, the North 2<sup>nd</sup> Street Express operates outbound from the RMTD Transfer Center to Landstrom Road and North 2<sup>nd</sup> Street at 9:35 a.m. and inbound from Landstrom Road and North 2<sup>nd</sup> Street to the RMTD Transfer Center at 5:48 p.m.

### **Route 23 – Downtown Growth Enterprises Express**

Route 23—Downtown Growth Enterprises Express operates outbound from the RMTD Transfer Center to Growth Enterprises in Loves Park at 7:45 a.m. and 2:45 p.m. Monday to Saturday. It operates inbound only from Landstrom and North 2<sup>nd</sup> Street to the RMTD Transfer Center at 8:20 a.m. and 3:20 p.m. Monday to Saturday.





## Fares

Adults (12 and older) pay \$1.50 per ride; disabled citizens with a valid RMTD photo ID card who are not enrolled in the Illinois Circuit Breaker Program, students 20 and under with a valid school ID or valid RMTD photo ID card, and children between 5 and 11 pay \$0.75. Senior citizens (65 and older) with a valid RMTD photo ID card, disabled citizens enrolled in the Illinois Circuit Breaker Program, and children under five accompanied by an adult ride free.

Adult Ten-Ride Tickets are \$15.00. Student or Disabled Citizen Ten-Ride Tickets are \$7.50. A 7-Day Unlimited Ride Saver Pass is \$16.00 and a 30-Day Unlimited Ride Saver Pass is \$55.00. These tickets are non-transferable.

Transfers are good for one hour and are free. Passengers should use them on the first bus passing the transfer point. Transfers are issued anywhere two RMTD bus routes meet or cross over.

Any passenger boarding or alighting in the designated Cherry Valley Zone will be asked to pay the additional Zone Fare since bus passes are not accepted in the Zone Fare.









## 2. LAND USE, ROADWAYS, AND DEMOGRAPHICS

Land use changes, new roadways, and changing demographics all impact transit services.

### Land Use

Larger shifts in national economic trends and policies over the last several decades have changed land uses in the Rockford metropolitan area. Like other Midwestern economies, the Rockford metropolitan area's economy has slowly shifted from an industrial-based economy to a service-based one. High-paying industrial jobs have been lost to low-paying service jobs, thus negatively impacting the tax base for such things as new schools, roads, water pipes, and sewers.

Rockford has the highest density of people in the Rockford metropolitan area who are elderly, disabled, or economically disadvantaged. Belvidere, however, has small amounts of people who are in this demographic.

Post-WWII suburban expansion and the late 20th century housing boom encouraged people to leave older, urban neighborhoods for new suburban communities. This migration further eroded the tax base necessary for the older urban areas to generate sufficient tax revenues to maintain their previous quality-of-life. Today, the City of Rockford is working hard to combat this and is focused on upgrading the infrastructure, emphasizing water and sewer system upgrades. As downtown uses have shifted, there is a need to reorganize or better connect resources (e.g. parking with transit). Some of Rockford's newer eastern strip center development is not conducive to transit because the buildings are situated away from the road behind parking lots, making it harder to deliver quality transit services in a timely manner. Clustered and strip commercial activity is concentrated in Winnebago County with minor concentrations along State Street in Belvidere.

Today, "urbanized" areas exist in Boone County, where they didn't a decade ago. In fact, a swath of land between Candlewick Lake, Cherry Valley, and Belvidere is now considered urban. These growth patterns have made east/west connectivity, relative to transit, an issue. The white collar expansion in Boone County has incentivized the need to connect the growing "choice rider" population with locations even further east. It has been suggested that the Rockford metropolitan area pursue light rail or bus rapid transit along the I-90 corridor.

### Roadways

Roadways and land use are connected. An example of this is the completion of the Jane Addams Memorial Tollway in 1958. The Tollway greatly contributed to the metropolitan area's rapid growth to the east that occurred from the 1960s to the late 1990s. Today, there are no large-scale transportation projects currently underway that will drastically change Rockford, but still roadway investment continues.

The Rockford Metropolitan Agency for Planning (RMAP) has developed the Rockford Metropolitan Area's 2040 Long-Range Transportation Plan (LRTP) Update to guide the area's transportation investments over the next thirty years. This Plan's funded "capital improvements" are prioritized and





included in a five-year plan called the Transportation Improvement Program. **Table 2-1** lists the Transportation Improvement Program’s major projects, which could impact RMTD’s bus routes.

**Table 2-1 – Roadway Projects Impacting Transit**

Roadway Projects that will Impact Transit					
Lead Agency	Project	From/To	Improvement	Fiscal Year	Route(s) Impacted
<b>2012 Projects</b>					
IDOT	US 20 BUS / West State St	Sunset Ave to W of Kent Creek in Rockford	Reconstruction, Traffic Signal Modernization, Intersection Improvement, Landscaping, Curb and Gutter, (ITS)	FY 2012	1
IDOT	ILL 2 / S Main St	N of Bellline Rd to 0.4 mi N of Harrison Ave SW of Rockford	Reconstruction, Bi-Directional Turn Lane, Curb and Cuter, Storm Sewer (New)	FY 2012	7
IDOT	ILL 2 / ILL 2 B / S Main St	S of Pond St to Cedar St SW of Rockford	Reconstruction, Bi-Directional Turn Lane, Curb and Cuter, Storm Sewer (New)	FY 2012	7
IDOT	ILL 2 / ILL 2 B / S Main St	S of Pond St to Cedar St SW of Rockford	RR Crossing Improvement, RR Flagger, RR Insurance	FY 2012	7
IDOT	ILL 70	Glenwood Ave to Jefferson St in Rockford	Resurfacing (Smart)	FY 2012	6
Rockford	Kilburn Ave	Jefferson St to Glenwood Ave	Resurfacing	FY 2012	6
Rockford	Kishwaukee St	Brook to Sandy Hollow Rd	Reconstruction	FY 2012	15
Rockford	Lyford Rd	Various	Resurfacing	FY 2012	11
Rockford	Main St / ILL 2	@ Auburn St	Intersection Improvement/Roundabout	FY 2012	4
Rockford	Newburg Rd	Alpine Rd to Perryville Rd	Resurfacing	FY 2012	16, 17
Rockford	Rural St	London Ave to Parkwood Ave	Resurfacing	FY 2012	13
Rockford	W State St / US BUS 20	Kent Creek to Independence Ave	Reconstruction	FY 2012	1
Rockford	Rockton Ave	@ Custer Ave	Intersection Safety Improvements	FY 2012	6, 16, 17
Rockford	East Riverside Boulevard	@ Wanz Park and Creek	Bridge Replacement	FY 2012	16, 17
Rockford	East Riverside Boulevard	@ Garden Plain and Creek	Bridge Replacement	FY 2012	16, 17
<b>2013 Projects</b>					
IDOT	ILL 2	Culverts between Bellline Rd S of Rockford to N of River Rd N of Byron	Culvert Replacement	FY 2013	7
Rockford	Broadway Ave	19th St to 11th St	Resurfacing	FY 2013	16, 17
Rockford	Harrison Ave	20th St to 11th St	Reconstruction, Land Acquisition, Utility Relocation, Lighting	FY 2013	14
Rockford	Main St / ILL 2	@ Auburn St	Intersection Improvement/Roundabout	FY 2013	4
Rockford	W State St / US BUS 20	Kent Creek to Independence Ave	Reconstruction	FY 2015	1
<b>2014 Projects</b>					
Rockford	Auburn Street	N Main to Huffman	Rehabilitation / Construction	FY 2014	3, 4
Rockford	Harrison Ave	20th St to 11th St	Reconstruction, Land Acquisition, Utility Relocation, Lighting	FY 2014	14
Rockford	S Main St / ILL 2	Cedar St to Airport Rd	Reconstruction	FY 2014	7
Rockford	W State St / US BUS 20	Kent Creek to Independence Ave	Reconstruction	FY 2014	1
<b>2015 Projects</b>					
IDOT	W State St / US BUS 20	Day Ave to Independence Ave	Reconstruction, Traffic Signal Modernization, Intersection Improvement, Landscaping, Curb and Gutter, (ITS)	FY 2015	1
IDOT	N Main St / ILL 2	Riverside Blvd to Auburn St in Rockford	Reconstruction	FY 2015	14
IDOT	N Main St / ILL 2	Riverside Blvd to Auburn St in Rockford	RR Crossing Improvement	FY 2015	14
Rockford	Alpine Rd	Morsay Dr to Broadway-Newburg	Resurfacing	FY 2015	20
Rockford	W State St / US BUS 20	Independence Ave to Pierpont St	Reconstruction	FY 2015	1





## Demographics

Population growth was stagnant during the 1980s with a slight decrease in population between 1980 and 1990. This trend reversed as the population had begun to increase after 1990. According to the U.S. Census, the City of Rockford grew 1.8% to 152,871 people between 2000 and 2010 (**Table 2-2**).

**Table 2-2 – Population Growth**

Population Growth						
	1980	1990	2000	2010	Change 200 to 2010	
City of Rockford	139,712	139,426	150,115	152,871	2,756	1.8%

Source: U.S. Census Bureau.

The following is a summary of population characteristics for the City of Rockford, the Rockford Metropolitan Area, and the State of Illinois. This data comes from the 2010 Census and the American Community Survey. The Census Bureau shortened its 2010 Census questionnaire and eliminated its Census long form. It now more frequently collects data through the American Community Survey, which includes income and work commute information it typically collected in the Decennial Census long form. The American Community Survey data is an average for the period 2007 through 2009.

As previously indicated, Rockford’s population is 152,871. The Rockford Metropolitan Area, covering parts of Boone and Winnebago Counties, has a population of 349,431 (**Table 2-3**). The City of Rockford and the Rockford Metropolitan Area have a slightly higher percentage of people over 65 than the State of Illinois (12.5 percent) at 13.9 percent and 13.5 percent respectively. Rockford and the Rockford Metropolitan Area also have slightly higher percentages of people 19 years and younger than the State of Illinois.

**Table 2-3 – Population Age**

Population by Age (2010)						
Age	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
19 years and younger	43,642	28.5	98,515	28.2	3,496,522	27.3
20 to 34 years	31,148	20.4	62,682	17.9	2,654,921	20.7
35 to 49 years	29,616	19.4	73,253	21.0	2,665,984	20.8
50 to 64 years	27,268	17.8	67,902	19.4	2,403,992	18.7
65 to 84 years	17,227	11.3	40,437	11.6	1,374,301	10.7
85 years and over	3,970	2.6	6,642	1.9	234,912	1.8
Total Population	152,871	100.0	349,431	100.0	12,830,632	100.0
Median age (years)	35.8	--	38.1	--	36.6	--

Source: U.S. Census Bureau, 2010 Census.





As shown in **Table 2-4**, Rockford has a slightly lower percentage of men and slightly higher percentage of women than that of the Rockford Metropolitan Area or State of Illinois.

**Table 2-4 – Population by Gender**

Population by Gender (2010)						
Gender	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
Male population	73,867	48.3	171,386	49.0	6,292,276	49.0
Female population	79,004	51.7	178,045	51.0	6,538,356	51.0
Total Population	152,871	100.0	349,431	100.0	12,830,632	100.0

Source: U.S. Census Bureau, 2010 Census.

Rockford also has a greater percentage of minority residents than the Rockford Metropolitan Area or the State of Illinois. Minorities comprise 34.9 percent of Rockford’s population, 21.5 percent of the Rockford Metropolitan Area, and 28.5 percent statewide. (Please see, **Table 2-5**.) Rockford’s Black or African American population is slightly more than one-fifth of the population and significantly higher than its metropolitan area and the statewide average. Its Hispanic or Latino population is also higher than its metropolitan area but comparable to the statewide average.

**Table 2-5 – Population by Race**

Population by Race (2010)						
Race	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
White	99,517	65.1	274,376	78.5	9,177,877	71.5
Black or African American	31,359	20.5	37,172	10.6	1,866,414	14.5
American Indian and Alaska Native	614	0.4	1,163	0.3	43,963	0.3
Asian	4,443	2.9	7,496	2.1	586,934	4.6
Native Hawaiian and Other Pacific Islander	41	0.0	94	0.0	4,050	0.0
Some Other Race	11,413	7.5	19,387	5.5	861,412	6.7
Two or More Races	5,484	3.6	9,743	2.8	289,982	2.3
Total Population	152,871	100.0	349,431	100.0	12,830,632	100.0
Hispanic or Latino (of any race)	24,085	15.8	43,144	12.3	2,027,578	15.8

Source: U.S. Census Bureau, 2010 Census.





Owners occupied less than 60 percent of Rockford’s housing units, compared to 70.3 percent in the Rockford metro area, and 67.5 percent statewide (**Table 2-6**).

**Table 2-6 – Housing Units by Tenure**

Housing Units by Tenure (2010)						
Status	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
Owner-Occupied	34,998	58.4	94,257	70.3	3,263,639	67.5
Renter-Occupied	24,975	41.6	39,749	29.7	1,573,333	32.5
Total Occupied Housing Units	59,973	100.0	134,006	100.0	4,836,972	100.0

Source: U.S. Census Bureau, 2010 Census.

American Community survey data on means of transportation to work is shown in **Table 2-7**. Slightly over 82 percent of Rockford workers sixteen years old and older drove alone to work between 2007 and 2009. This compares to 84.3 percent of metro area workers and 73.2 percent of workers statewide.

A tiny fraction of these workers who lived in Rockford (1.6 percent) or the Rockford metro area (0.8 percent) used public transportation to get to work. This rate is much lower than the statewide average of 9 percent, which the City of Chicago greatly affects.

**Table 2-7 – ACS Means of Transportation to Work**

Survey: American Community Survey Means of Transportation to Work (2007 - 2009) (workers 16 years and over)						
Mode	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
Car, truck, or van - drove alone	53,568	82.3	131,184	84.3	4,404,267	73.2
Car, truck, or van - carpooled	6,473	9.9	14,126	9.1	551,906	9.2
Public transportation (excluding taxicab)	1,038	1.6	1,270	0.8	539,565	9.0
Walked	1,032	1.6	1,989	1.3	190,926	3.2
Taxicab, motorcycle, bicycle, or other means	982	1.5	2,170	1.4	96,942	1.6
Worked at home	2,000	3.1	4,951	3.2	234,854	3.9
Total Workers	65,093	100.0	155,690	100.0	6,018,460	100.0





Source: U.S. Census Bureau, 2007-2009 American Community Survey

Vehicles Available by Household is indicative whether public transit is needed. **Table 2-8** shows 10.6 percent of Rockford’s households are carless. This percentage drops to 7.1 percent in the Rockford metro area, but increases to 10.5 percent statewide.

**Table 2-8 – Vehicles Available by Household**

Vehicles Available by Household (2007 - 2009)						
Vehicles	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
No vehicle available	6,481	10.6	9,266	7.1	499,002	10.5
1 vehicle available	25,206	41.3	43,873	33.8	1,652,434	34.7
2 vehicles available	21,321	34.9	50,857	39.2	1,777,234	37.3
3 vehicles available	5,928	9.7	18,978	14.6	601,323	12.6
4 or more vehicles available	2,162	3.5	6,822	5.3	236,350	5.0
Total Households	61,098	100.0	129,796	100.0	4,766,343	100.0

Source: U.S. Census Bureau, 2007-2009 American Community Survey

People who have lower incomes or incomes below the poverty level typically take public transit. In Rockford, approximately 19.5 percent of households reported an annual income below the poverty level (**Table 2-9**). This is significantly higher than households reporting below the poverty level in the Rockford metro area (13.6 percent) or statewide (12.0 percent). In terms of annual household income, Rockford has a greater percentage of residents making less than \$10,000, than those in the Rockford metro area (11.8 percent) or statewide (7.0 percent). (Please see, **Table 2-10**.)

**Table 2-9 – Households with Income below Poverty Level**

Households with Income Below the Poverty Level in the past 12 months (2007-2009)						
Status	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
Income in the past 12 months below poverty level:	11,922	19.5	17,688	13.6	570,713	12.0
Total Households	61,098	--	129,796	--	4,766,343	--

Source: U.S. Census Bureau, 2007-2009 American Community Survey





Table 2-10 – Household Income in Last 12 Months

Household Income in the Past 12 Months (2009 inflation adjusted dollars) (2007-2009)						
Status	City of Rockford		Rockford Metro Area		State of Illinois	
	Number	Percent	Number	Percent	Number	Percent
Less than \$10,000	7,239	11.8	10,555	8.1	334,550	7.0
\$10,000 to \$14,999	4,391	7.2	6,982	5.4	239,575	5.0
\$15,000 to \$24,999	8,686	14.2	15,047	11.6	484,379	10.2
\$25,000 to \$34,999	8,186	13.4	15,393	11.9	467,817	9.8
\$35,000 to \$49,999	9,564	15.7	18,939	14.6	643,271	13.5
\$50,000 to \$74,999	10,293	16.8	25,621	19.7	903,499	19.0
\$75,000 to \$99,999	5,837	9.6	16,521	12.7	623,417	13.1
\$100,000 to \$149,999	4,359	7.1	13,945	10.7	625,411	13.1
\$150,000 to \$199,999	1,149	1.9	3,181	2.5	222,476	4.7
\$200,000 or more	1,394	2.3	3,612	2.8	221,948	4.7
Total Households	61,098	100.0	129,796	100.0	4,766,343	100.0

Source: U.S. Census Bureau, 2007-2009 American Community Survey









### 3. RELATED STUDIES

The study team collected recently completed plans and studies from Loves Park, Machesney Park, Rockford, Boone County, Winnebago County, and the Rockford Metropolitan Agency for Planning (RMAP). They reviewed the plans and studies' relationship to the comprehensive transit analysis and summarized them below.

#### Boone County, Highway 173 Corridor Plan

The Boone County Highway 173 Corridor Plan examined the long-range future of the 12-mile segment of Highway 173 in Boone County. This Plan sought to identify detailed land use, transportation, and design recommendations for the corridor within Boone County. The Rockford Metropolitan Agency for Planning (RMAP) primarily funded this plan. Boone County provided a match, resulting from construction of a new interchange at Interstate 39/90 and Highway 173 and from developments that will follow.

The planning area included Highway 173 in Boone County through Caledonia, Poplar Grove, and Boone Townships. This Plan provided recommendations for lands approximately ½ mile north and south of Highway 173 and refined land use and transportation recommendations presented in the 1999 Boone County Comprehensive Plan. However, it did not recommend any additional area for future land use and in some cases reduced the amount of land recommended for growth. The following principles should guide all development along Highway 173 to encourage an efficient, aesthetically pleasing corridor meeting residents and travelers' needs.

#### Efficient Design

Efficient design involves maximizing the corridor's future development potential in areas recommended for development and maintaining the rural character of areas not recommended for development as long as possible. Future development potential will be maximized by using multi-story, mixed-use buildings; where practical; planning for future build-out at the time of initial site planning; providing appropriate connections to neighboring properties; minimizing outdoor storage and excessive paved areas; and integrating regional stormwater management.

#### Pedestrian-friendly

New development within the corridor should encourage non-motorized travel. Pedestrian facilities should include sidewalks on all streets, connections from building entries to sidewalks and crosswalks, and bicycle parking. Consistent with Boone County's Comprehensive Plan, the Highway 173 Corridor Plan recommends relatively compact development surrounding the existing villages along Highway 173 and encourages preservation of farmland and open areas.

#### High Quality Development

In many ways, the design of new development within the corridor will be more important than the proposed land uses. Quality building and site design and building materials will lead to an aesthetically pleasing area and encourage higher sales tax generating development. High quality building facades and landscaping will be the dominant visual image from the Highway 173 corridor.





High quality materials should therefore be used for building facades, including architectural detailing, and appropriate site and foundation landscaping should be used to soften these facades. Generally unattractive uses, such as parking, loading, and dumpsters, should be positioned in less visible locations and screened. Future development in this corridor should reflect each village's unique small-town character.

### New Collectors and Local Roads

The Highway 173 Corridor Plan proposes local east-west collector roads north and south of Highway 173 near Poplar Grove and Capron. These collectors should be sensitive to topography and natural features and connect into existing development.

Existing intersection locations should remain where they already are and new intersections should meet the Illinois Department of Transportation's (IDOT's) spacing requirements. While IDOT has not begun a plan for the Boone County segment of Highway 173, it is assumed that intersection spacing requirements would be similar to the Winnebago County segment. IDOT will determine the detailed design and precise locations of these new intersections, however.

The location of future access will be based on a minimum spacing distance of a quarter-mile (1,320 feet) for full access and an eighth-mile (660 feet) for right-in, right-out access. Generally, new access points should be located a minimum of 125 to 150 feet from property lines intersecting Highway 173 to ensure appropriate block spacing and to avoid complications with neighboring parcels.

### Envision North Main Street Corridor Plan

The Envision North Main Street Corridor Plan resulted from a collaborative effort of stakeholders concerned about the area's decline in the decades following World War II when its retail center left and moved eastward and its manufacturing base declined. This Plan's study team analyzed North Main Street Corridor's existing conditions and opportunities, developed alternative improvement strategies, refined the preferred strategies, and established an implementation action plan.

This Plan's key findings and recommendations include the following highlights:

- Organizing the corridor into three distinct "zones of control" that require different levels of municipal focus, resources, and leadership;
- Suggesting a market exists for additional restaurants, a national drug store, small gift/accessory shops, and personal care businesses in the North Main/Auburn business district. (The Plan's preliminary market analysis showed current zoning allows more retail than the corridor can support. The Corridor's limited lot sizes and low traffic volumes will also not appeal to big box retailers.);
- Recommending shared parking facilities because most North Main Street shoppers will drive to the Corridor and then walk around; and
- Recommending a program of continuous infrastructure improvements (fixing gutters and sidewalks, cleaning streets, and improving the existing landscaping) to enhance the North Main Street Corridor's safety, appearance, and overall image.





## Kishwaukee Street Corridor Revitalization Plan

The City of Rockford initiated the Kishwaukee Street Corridor Revitalization Plan to develop a long-term vision for an approximately 4.3 mile long section of Kishwaukee Street between Downtown Rockford and the Chicago/Rockford International Airport. Kishwaukee Street includes large scale and small scale industrial uses, retail and commercial service businesses, and multi-family and single family residential areas.

Like many streets that traverse older neighborhoods in cities such as Rockford, increasing truck traffic and overall traffic volumes have placed a heavier burden on Kishwaukee Street than it was originally meant to accommodate. The age, scale, and condition of structures within this corridor vary widely and incompatibilities between land uses evolved over time are commonplace.

In response to increasing traffic and aging infrastructure conditions, changing patterns of retail development favoring newer sites in outlying areas, and the industrial sector's evolving needs, many properties along Kishwaukee Street are suffering from ongoing disinvestment. While many well maintained properties are present along the corridor, the overall perception of blighted conditions has stifled reinvestment.

The Kishwaukee Street Corridor Revitalization Plan created several planning principles and a vision for the future that recognizes the Corridor's historical role as Rockford's industrial center, while acknowledging its land use mix, the global industrial market's altered nature, and the vulnerability of the Corridor's residential neighborhoods.

## Northern Illinois Transportation Initiative

The Northern Illinois Transportation Initiative examined whether shuttle bus service was feasible between Rockford-Belvidere and one of several Metra commuter rail stations. Metra provides commuter rail service to and from Chicago and Northeastern Illinois.

This project's study team focused on a startup service directed at the biggest single-market, peak-period work trips. They examined the following two alternatives: Rockford-Belvidere-Big Timber-Schaumburg and Rockford-Belvidere-Harvard.

### Rockford-Belvidere-Big Timber-Schaumburg

The Rockford-Belvidere-Big Timber-Schaumburg shuttle bus route would serve Rockford, Belvidere, Elgin's Big Timber Metra Station, and Schaumburg via the I-90 Tollway during peak hours. Rockford is 46 miles away from Elgin's Big Timber Metra Station and 65 miles from Schaumburg.

The shuttle buses would connect with four primary express trains in each peak period at the Big Timber Metra Station, providing approximately 30-minute headways.

### Rockford-Belvedere-Harvard

The Rockford-Belvedere-Harvard shuttle bus route would serve Rockford, Belvidere, and Harvard's Metra Station on the Union Pacific Northwest Line. Metra has three express inbound and four express





outbound weekday trains serving that station. The most loaded train leaves Harvard with 68 riders, with few commuters from Rockford/Belvidere. The Final Report for the Northern Illinois Transportation Initiative recommended against providing shuttle bus service from Rockford and Belvidere to Harvard's Metra station. This service could cost as much as \$900,000 annually to operate.

This alternative looked at coordinating with the Illinois Tollway's Operations Plans. There is currently little bus service on I-90, but proposals have suggested significant services and infrastructure, including shoulder lanes and adding a managed lane. This could be an efficient service with feeder buses used to provide local distribution at intermediate stations.

## Coordinated Public Transit-Human Services Transportation Plan

The Coordinated Public Transit-Human Services Transportation Plan sought to assess the needs and concerns of the area's public transit users, develop strategies to address these concerns, and increase the transit services' overall efficiency. The Plan paid particular attention to public participation, transit-dependent populations, and communication and coordination between public transit and human services providers.

The Coordinated Public Transit-Human Services Transportation Plan examined population densities of the elderly, people with disabilities, and people living below the poverty line within the Rockford Metropolitan Area. These populations are concentrated around the Rockford core with elderly populations usually located at the edge of that core.

Nearly a dozen human services organizations depend on public transit service for their clients. The Coordinated Public Transit-Human Services Transportation Plan mentioned some possible improvements, such as the following:

- Establishing van shuttle services;
- Developing and implementing a strategic communications plan;
- Increasing membership on the Rockford Area Transportation Study (RATS) Mobility Subcommittee;
- Developing a service plan to increase transit service availability to more of the area's elderly;
- Increasing the availability of accessible transportation for individuals with disabilities through coordination efforts and the addition of paratransit vehicles;
- Creating fixed service routes to increase accessibility to employment centers not yet served; and
- Coordinating with rural areas to enhance transit service availability.





## 4. PASSENGER DATA COLLECTION



### On-board Passenger Survey

The on-board passenger survey sought to develop a profile of RMTD's passengers as well as their origins and destinations, trip frequencies, satisfaction, and desire for additional services and service coverage.

#### Methodology

The study team developed opinion surveys with RMTD's help. They conducted these surveys on all

routes between 6 a.m. and 6 p.m., providing a clear and concise opinion of the overall system by those who use it.

The study team collected these surveys using the intercept method. They asked each person who boarded the bus to participate in the survey. The survey questionnaire is shown in **Figure 4-1**.





Figure 4-1 – Survey Questionnaire

### RMTD Onboard Survey Interview Form

Route: \_\_\_\_\_ Time: \_\_\_\_\_ AM/PM (the start time of the trip being surveyed)

1. Where are you coming from and where are you going to?

**Where are you coming from?**

- <sub>1</sub> Work
- <sub>2</sub> Home
- <sub>3</sub> Business Appointment
- <sub>4</sub> Personal or Medical Appointment
- <sub>5</sub> School
- <sub>6</sub> Shopping
- <sub>7</sub> Recreation/Entertainment
- <sub>8</sub> Other

**Where are you going to?**

- <sub>1</sub> Work
- <sub>2</sub> Home
- <sub>3</sub> Business Appointment
- <sub>4</sub> Personal or Medical Appointment
- <sub>5</sub> School
- <sub>6</sub> Shopping
- <sub>7</sub> Recreation/Entertainment
- <sub>8</sub> Other

Addresses, nearest intersection, name of place      Addresses, nearest intersection, name of place

\_\_\_\_\_ (very important)

\_\_\_\_\_ (very important)

2. Where did you get on this bus (intersection, major location)? **Probe, this is very important.**

- <sub>1</sub> Downtown Transit Center
- <sub>2</sub> Eastside Transit Center
- <sub>3</sub> Other \_\_\_\_\_

3. How did you get to where you boarded the bus?

- <sub>1</sub> Walk                      <sub>2</sub> Transferred from a RMTD bus (Route? \_\_\_\_\_)
- <sub>3</sub> Dropped off by auto      <sub>4</sub> Bicycle

4. Where will you get off the bus (intersection, major location)? **Probe, this is very important.**

- <sub>1</sub> Downtown Transit Center      <sub>2</sub> Eastside Transit Center
- <sub>3</sub> Other \_\_\_\_\_

5. How will you get to your final destination?

- <sub>1</sub> Walk                      <sub>2</sub> RMTD bus (Route? \_\_\_\_\_)
- <sub>3</sub> Picked up by auto      <sub>4</sub> Bicycle

6. How often do you ride the bus?

- <sub>1</sub> Daily      <sub>2</sub> Several times a week      <sub>3</sub> Several times per month
- <sub>4</sub> Occasionally

7. Overall, how would you rate RMTD bus service?

- <sub>1</sub> Excellent    <sub>2</sub> Good    <sub>3</sub> Fair    <sub>4</sub> Poor

8. How often do RMTD buses run on time?

- <sub>1</sub> Always    <sub>2</sub> Usually    <sub>3</sub> Seldom    <sub>4</sub> Don't know/no opinion





Figure 4-1 – Survey Questionnaire (continued)

9. Are there locations where you would like to go, but RMTD doesn't serve?  
<sub>1</sub> Yes (please list) \_\_\_\_\_ <sub>2</sub> No

10. How did you pay for this trip?  
<sub>1</sub> Cash/change <sub>2</sub> 7 Day Unlimited Pass <sub>3</sub> Student/Disabled Pass  
<sub>4</sub> 30 Day Unlimited Pass <sub>5</sub> Ten Ride Ticket <sub>6</sub> Transfer

11. Are you a licensed driver and able to drive?  
<sub>1</sub> Yes <sub>2</sub> No

12. How many vehicles are owned or leased by members of your household?  
<sub>1</sub> None <sub>2</sub> One <sub>3</sub> Two <sub>4</sub> Three or more

13. Which of the following would cause you to ride RMTD buses more often?  
<sub>1</sub> More convenient service <sub>2</sub> Service to more destinations <sub>3</sub> Lower fares  
<sub>4</sub> More hours of service <sub>5</sub> Other, \_\_\_\_\_

14. If RMTD did not exist, would you have ...  
<sub>1</sub> Not have made this trip <sub>2</sub> Gotten a ride <sub>3</sub> Used a taxi  
<sub>4</sub> Rode a bike <sub>5</sub> Drove your own car <sub>6</sub> Walked  
<sub>7</sub> Other, \_\_\_\_\_

15. How many people belong to your household?  
<sub>1</sub> One <sub>2</sub> Two <sub>3</sub> Three <sub>4</sub> Four <sub>5</sub> Five or more

16. How many of these household members are employed?  
<sub>1</sub> One <sub>2</sub> Two <sub>3</sub> Three <sub>4</sub> Four or more <sub>5</sub> None

17. Is your approximate household income:  
<sub>1</sub> Less than \$10,000 <sub>3</sub> Between \$10,000 and \$25,000  
<sub>2</sub> Over \$50,000 <sub>4</sub> Do not care to respond  
<sub>5</sub> Between \$25,000 and \$50,000

18. **Surveyor, please note if respondent is:**  
<sub>1</sub> Male <sub>2</sub> Female  
**and**  
<sub>1</sub> Under 18 years of age <sub>2</sub> 18 to 59 years <sub>3</sub> 60 years and older





### Findings

The study team asked riders about their origins and destinations as a way to determine their trip purpose. Most riders began their trips from home (46.8%). Other popular origins were work (13.7%), other (10.8%), shopping (10.5%), and medical appointment (Figure 4-2).

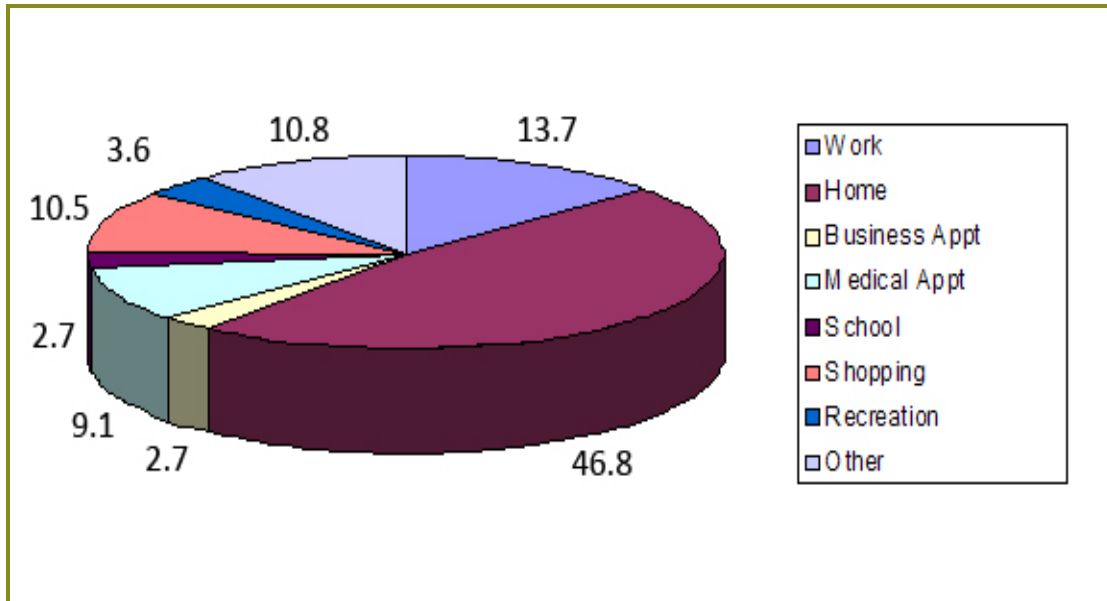


Figure 4-2 – Trip Origins

Most riders ended their trips at home (41.3%). Other popular destinations were work (17.7%), other (10.9%), shopping (9.1%), and medical appointment (8.8%) (Figure 4-3).

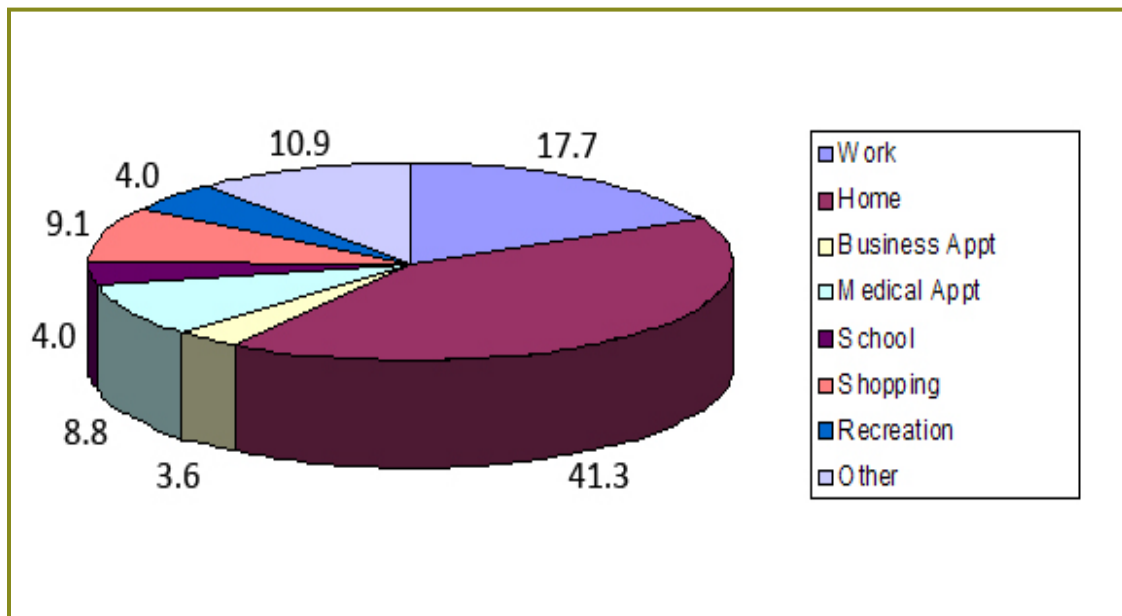


Figure 4-3 – Trip Destinations





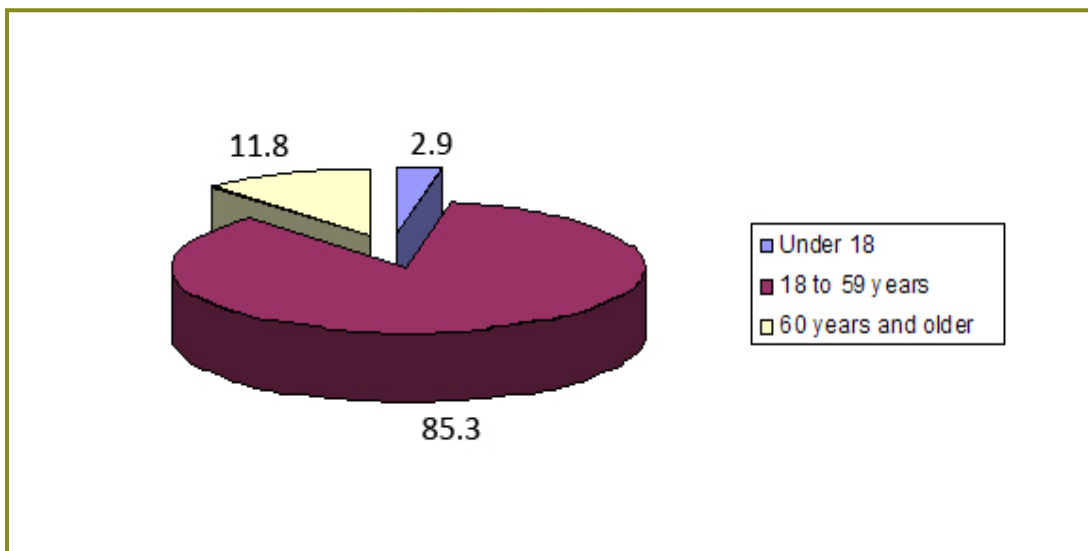


Approximately half of all riders boarded their current trip at the RMTD Transfer Center, indicating that many riders have at least one transfer and are using the RMTD Transfer Center to do it, rather than transfer elsewhere. The East Side Transfer Center showed little transfer activity during the survey period because it was unfinished.

The riders in the RMTD system are evenly split in terms of gender. Roughly 51 percent of the riders are male and 49 percent are female. This closely resembles a reverse of the national average which shows 52 percent being female and 48 percent being male.

Eighteen to fifty-nine year olds comprise 85.3% of RMTD’s ridership. Almost all of the remaining riders are over 60 years old (11.8%). A full breakdown is shown in **Figure 4-4**.

Figure 4-4 – Ridership by Age



Typically, transit dependent riders comprise a large portion of riders on most American transit systems. In RMTD’s case, 56.1% of its riders are not licensed to drive and are thus transit dependent (**Figure 4-5**).

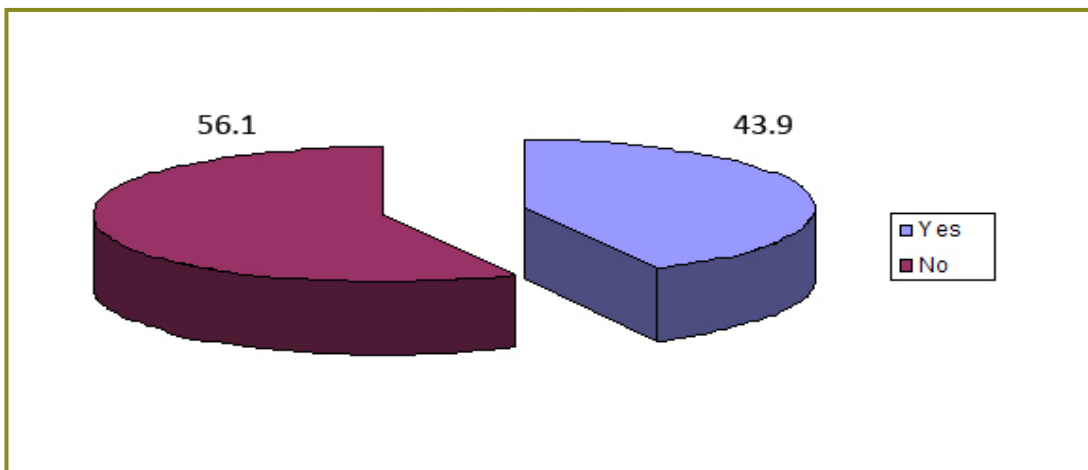


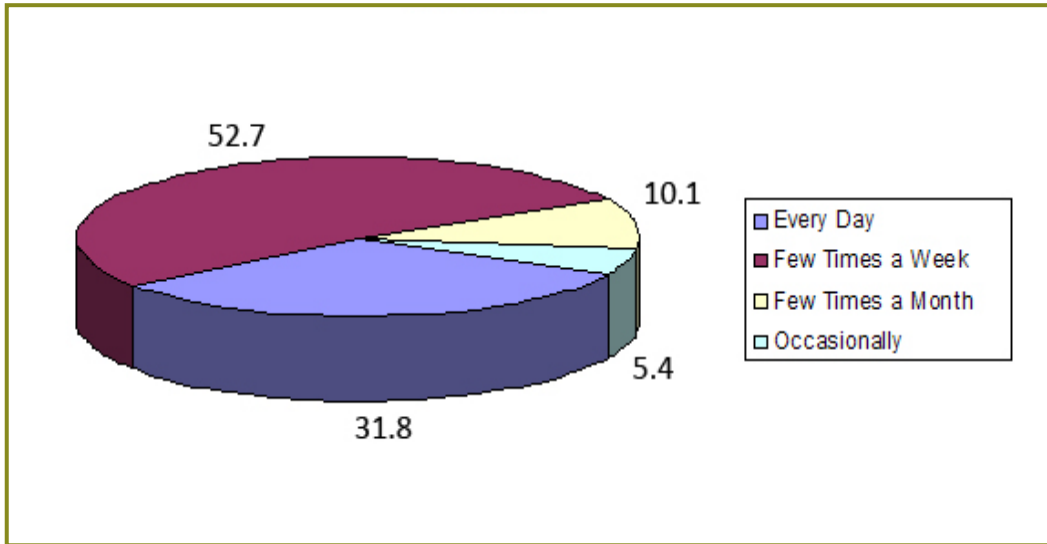
Figure 4-5 – Licensed Drivers





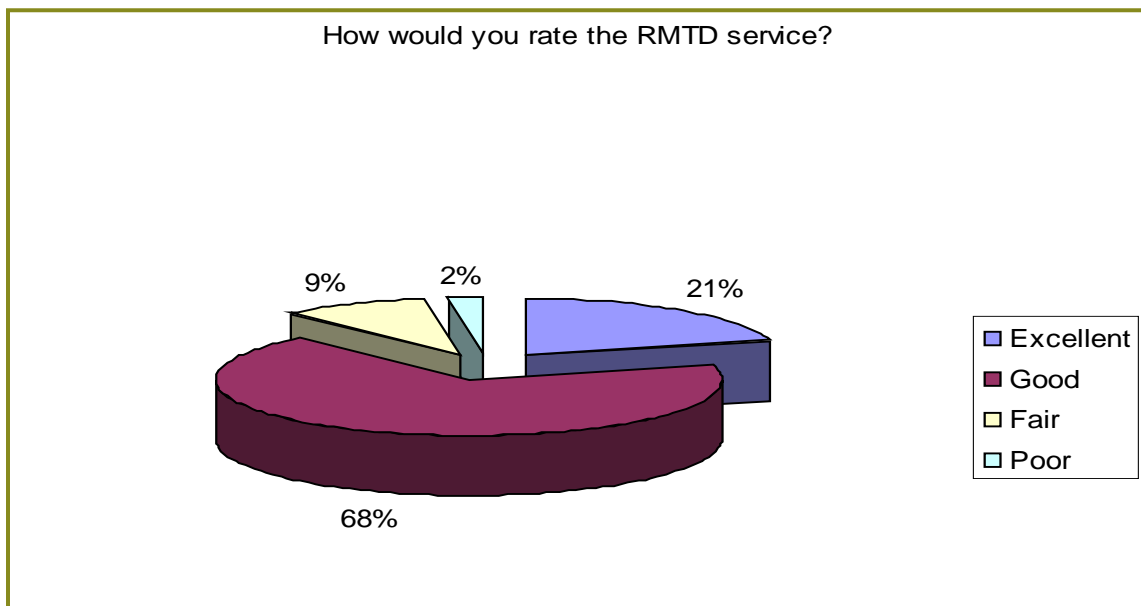
Most RMTD riders take the bus at least a few times a week (84.5%), if not every day (31.8%). Please see, **Figure 4-6**.

**Figure 4-6 – Frequency of RMTD Use**



Overall, RMTD’s riders believe the public transit system is performing well. Eighty-eight percent of the riders surveyed indicated the service was “great” or “good” overall. Please see, **Figure 4-7**.

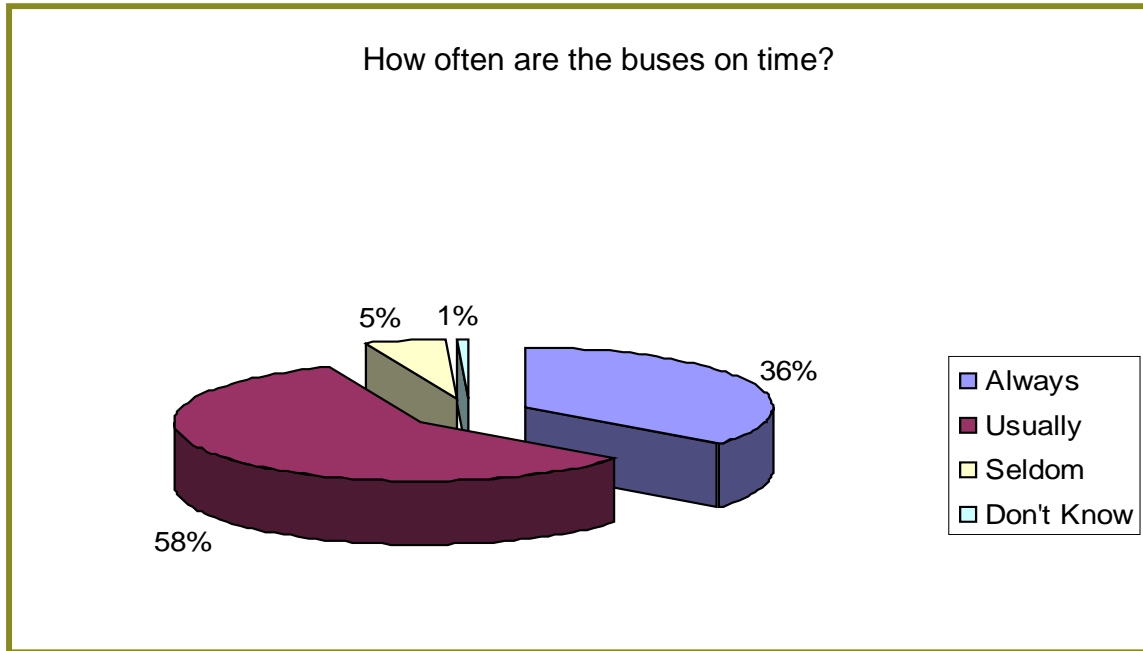
**Figure 4-7 – Quality of Service**





As shown in **Figure 4-8**, just over 91% of survey respondents indicated RMTD buses “always” or “usually” run on time. This shows that on-time performance is closely correlated with service quality.

**Figure 4-8 – On-time Performance**



### Typical Rider

The typical rider uses RMTD to go to and from work (31% of all trips), shopping (nearly 20% of all trips), or medical appointments (20% of all trips). He or she is of working age, with 85.3% of riders between the ages of 18 and 60.

Most riders do not have a driver’s license (56.1%) and use RMTD a few times a week (52.7%) or every day (31.8%). They (68%) rate RMTD’s overall service quality as good. Please see, **Appendix 1** for complete survey results.

### Boarding and Alighting Counts

The study team conducted boarding and alighting counts for an average weekday, Saturday, and Sunday to assess the ridership productivity of individual routes or route segments. They conducted these counts over a two-week period from June 6 to June 20, 2011.





**Methodology**

The study team collected boarding and alighting counts by stop on every trip of every RMTD route for an average weekday, Saturday, and Sunday. They hired approximately 20 temporary employees to perform these counts using Apple iPod Touch devices programmed to collect the data. At the end of each shift, data collection supervisors downloaded the data into a database.

Table 4-1 summarizes the survey’s weekday boardings by route.

**Table 4-1 – Weekday Boarding by Route**

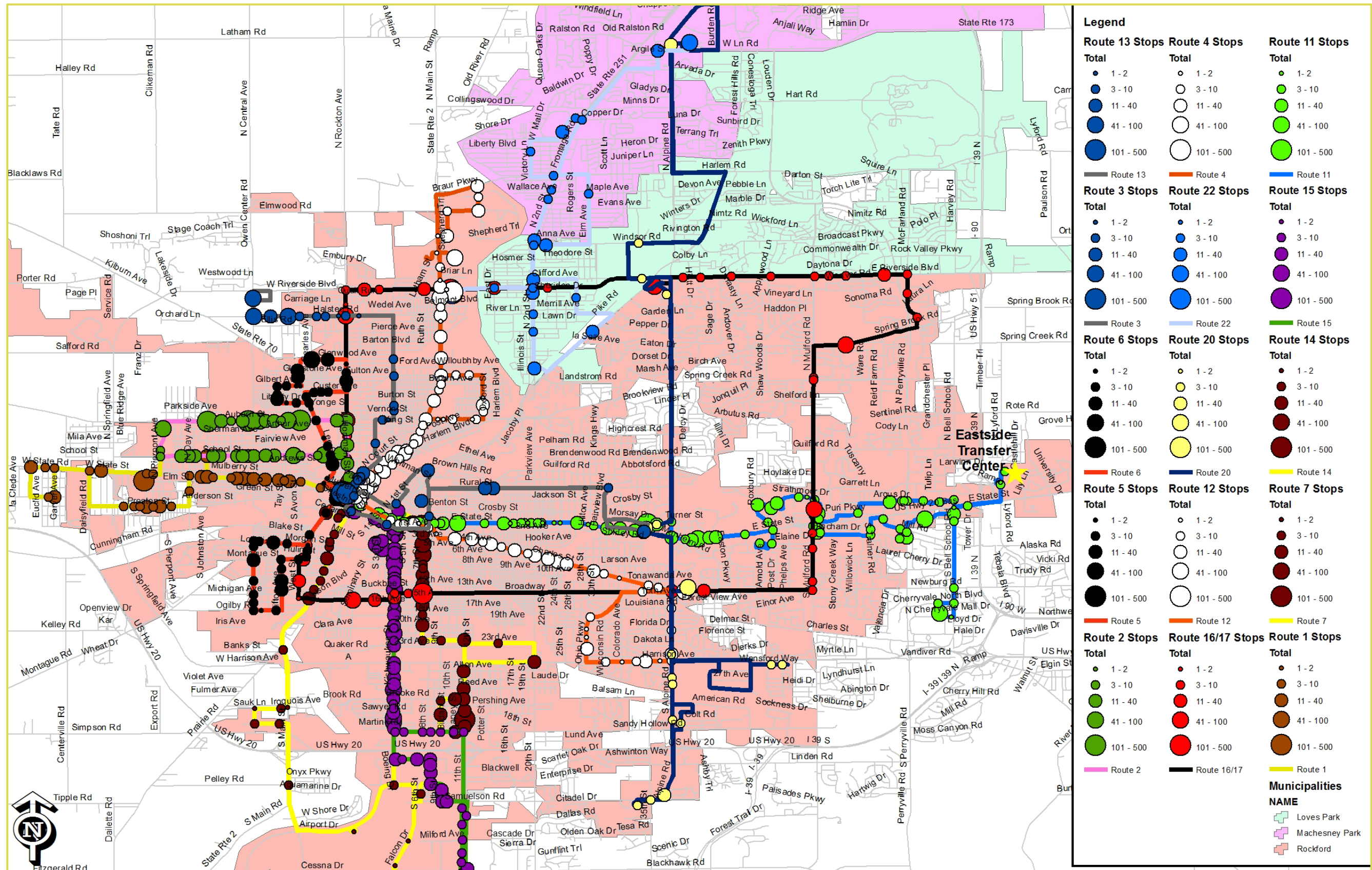
Weekday Boarding by Route	
Route	Boardings
1 West State Street	496
2 School Street	969
3 Huffman Street	223
4 North Main Street	534
5 Clifton Road	175
6 Kilburn	241
7 South Main Street	173
11 East State Street	924
12 Charles Street	242
13 Rural Street	146
14 7th Street	605
15 Kishwaukee Street	874
16 Big Loop North	382
17 Big Loop South	386
20 Alpine Crosstown	80
22 North 2nd Street	219

Figure 4-9 is an overview of the boarding counts by stop. The study team linked the boarding and alighting data to a GIS-based map to graphically present ridership productivity. Please see, Appendix 2 for each route’s boarding and alighting maps.





Figure 4-9 – Boarding Counts by Stop







## 5. STAKEHOLDER MEETINGS

Stakeholder meetings are critical to a good transit plan. The study team therefore met with RMTD bus operators and other operations staff, service agencies, local governments, the general public, and the following individuals:

- Mayor Fred Brereton – Mayor of Belvidere;
- Mr. Ken Terrinoni – Boone County Administrator;
- Mr. John Slattengren – Boone County Council on Aging;
- Mr. Steve Ernst – RMAP’s Executive Director;
- Mr. Jon Paul Diipla –Planner from RMAP;
- Mayor Larry Morrissey – Mayor of Rockford;
- Mr. Jim Ryan – City Administrator from the City of Rockford;
- Hon. Chuck Jefferson - Representative – 67th District State of Illinois; and,
- Mr. Patrick Zuroske – Capital Program Manager from the City of Rockford.

The Rockford metropolitan area has public transit in its rural and urban areas. The Illinois Department of Transportation allocates rural transit funding to Boone County through the Section 5311 program. Boone County provides rural, demand-response, public transit service through the Boone County Council on Aging. The Council on Aging is dedicated to all older adults and their caregivers. It provides programs that help enrich and improve older adults’ quality of life. Transit is just one of the services the organization provides.

The Council on Aging’s public transit service is open to everyone. However, people must request a ride at least one day in advance. Children under 12 years old pay \$1.00 per ride and an adult must accompany them. Adults under 60 years old pay \$2.00 per ride. Adults over 60 years old are free but may offer a donation.

The Boone County Council on Aging picks its riders up at their origin and drops them off at their destination. It also provides special assistance upon request to get people between the door of their origin or destination and the bus.

The buses carry between eight and 14 passengers with five buses running on any given day. The Council on Aging provides public transit service primarily to and from Belvidere, the Walmart, or grocery stores. Approximately 1,037 riders make 30,000 trips annually on this service.

Although its riders want weekend and evening service, the Boone County Council on Aging cannot currently provide this service because of budgetary constraints. Its fare revenue only makes up less than 10 percent of the system’s expenses.

The Boone County Council on Aging also has a medical escort car available and charges 50 cents per mile.





IDOT allocates Job Access Reverse Commute (JARC) funds to RMTD for public transit service to Boone County's urban areas.

The Federal government established the JARC program to address the unique transportation challenges welfare recipients and low-income people face while seeking and maintaining employment. JARC allows them to access new entry-level jobs located in suburban areas that were once inaccessible from their inner city, urban, or rural neighborhoods. It also allows them to work entry level jobs that have late night or weekend hours when other forms of public transit are unavailable. Finally, JARC provides these workers with access to services such as child care that having a new job would necessitate.

The Federal government has designated States and other public bodies as eligible JARC recipients. Eligible sub-recipients are private non-profit organizations, State or local governments, and public transit operators, including private operators of public transportation services.

Some stakeholders believe a fixed route in Belvidere will require RMTD to significantly educate the ridership base to be successful. However, the need for RMTD service is evident. One example is the closing of the Public Service Office in Boone County on July 1, 2011, thus leaving the office west of Rockford as the only place in the region for its clients to access services. For those in Boone County this will necessitate a link with the RMTD system to access the facility. One idea is to use the East Side Transfer Center as the base of Boone County Operations. First and foremost would be a RMTD route that would link the East Side Transfer Center with a location in Downtown Belvidere where it would pick up Council on Aging passengers and then bring them back to the East Side Transfer Center where they could connect with other RMTD routes. Boone County authorities would also like additional fixed-route service in the urban areas of Boone County to places like Walmart, Kmart, Belvidere City Hall, and the public library. This study's emphasis is to ensure that as the East Side Transfer Center opens, there is a plan for service into Boone County and other RMTD links to the facility.

Some stakeholders would like to see the system take advantage of innovative technologies. These could include fueled vehicles like compressed natural gas or diesel/electric buses. Operators and other RMTD staff are intensely focused on providing the highest quality of service possible to their customers. They would like to focus on new routes and other adjustments such as improved headways and additional stops.

Municipal leaders believe RMTD should be involved with Rockford projects from the beginning to maintain quality urban planning. An example of this is linking all municipal bicycle facilities and transit. On East State Street, there is a perceived need to bring transit service closer to the buildings which are set back from the street in strip mall developments. Bus shelters are desired for many locations. RMTD could provide additional insight to residents' needs. These efforts will make for more cohesive planning in the Rockford Metropolitan Area.

The Rockford Metropolitan Area is evolving. Growth has occurred east of Rockford in Boone County, changing some of the rural area to an urban classification. RMTD provides an urban service that is primarily focused on a transit-dependent ridership base, as the attitude survey confirms. Yet the new







growth to the east emphasizes commuter transit linking Rockford and Belvidere with Chicago. A push for regional rail has been underway for quite some time, yet current FTA formulas make attaining such a system very difficult. RMTD needs to be aware of this, and begin thinking about its service by participating in the system's planning, design, and implementation; however, it is still too early to make structural changes to the system to accommodate this potential service. Some people believe a variety of sources such as the implementation of casino legislation or the relocation of a prominent university to the area could prompt potential growth in needed transit service. Conceptually, new routes have been discussed such as one that would serve Target, the East Side Transfer Center, and the CherryVale Mall or that would serve Loves Park, the East Side Transfer Center, and Machesney Park. There is some desire to begin to move from a radial route system to more of a linear route system or hybrid. Others have suggested a downtown parking circulator to work with a potential sports complex. The need for bus pull-off bays has been suggested as a way to mitigate congestion caused when buses stop to pick up patrons.

The Federal government also allocates urban transit funding to RMTD through the Section 5307 program.







## 6. EAST SIDE TRANSFER CENTER CONNECTION

The East Side Transfer Center opened in the fall of 2011 as an anchor for providing fixed-route bus service to the City of Belvidere and the rest of Boone County. The study team developed five options for providing an East Side Transfer Center connection to Belvidere in consultation with RMTD staff and Belvidere area stakeholders. As part of this process, the study team reviewed the area’s major trip generators as well as its demographic characteristics, such as its population density and the density of minority populations. They also examined how each option would connect to the Boone County demand response system, its potential travel times, its service frequency, the number of vehicles needed to provide the service, and its potential operating cost.

Given existing funding constraints, RMTD however determined they must initially limit this route to a one-hour round trip using one vehicle.

### Option 1: East Side Transfer Center – Belvidere – Kmart – Walmart

As shown in **Figure 6-1**, the bus in Option 1 would begin at the East Side Transfer Center and travel south and/or east on State Street, passing through the heart of downtown Belvidere. It would continue south on Pearl Street to Kmart and east on US-20 to Walmart before heading back to the East Side Transfer Center. This is the basic route that all options, except Option 3, use as a base.

Figure 6-1 – Option 1: East Side Transfer Center-Belvidere-Kmart-Walmart

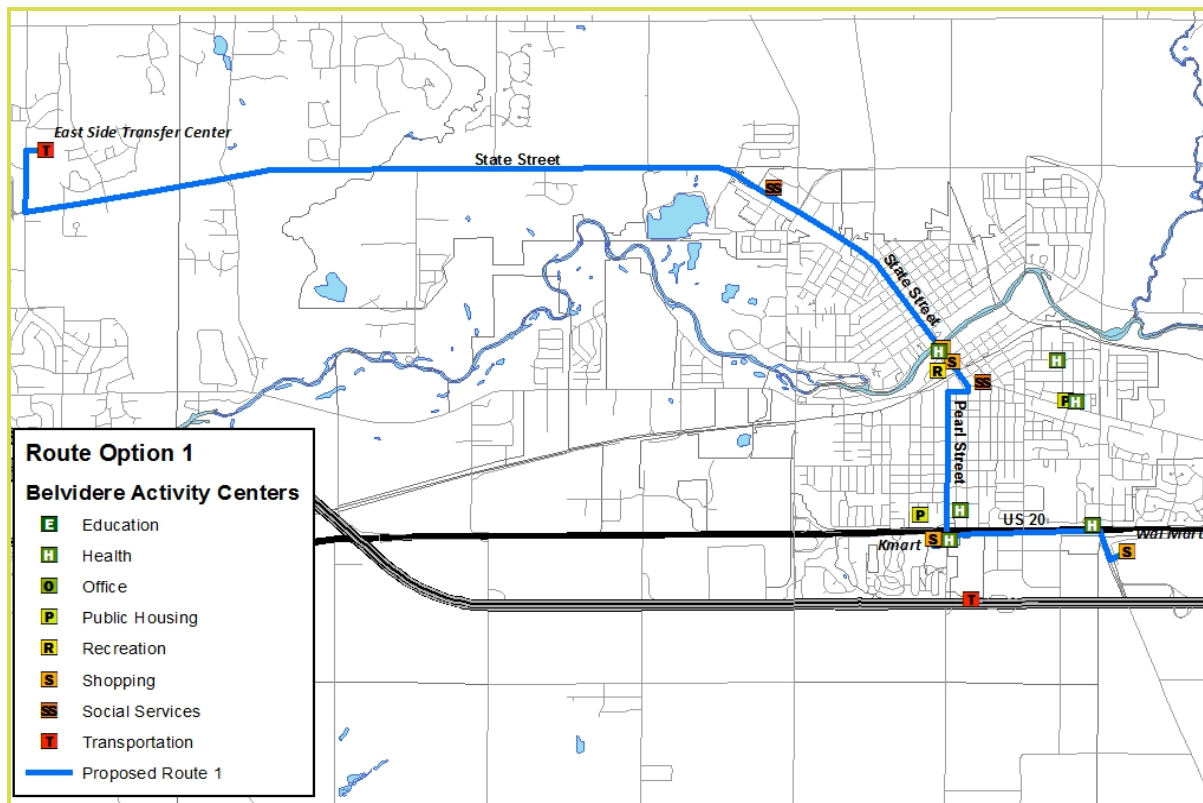




Figure 6-2 shows the population density (as measured in the 2010 Census) along the Option 1 route, with the densest populations shown in red and the least dense in white. Option One would have a bus operate adjacent to over one third of the area’s densest census tracts.

Figure 6-2 – Option 1 Population Density

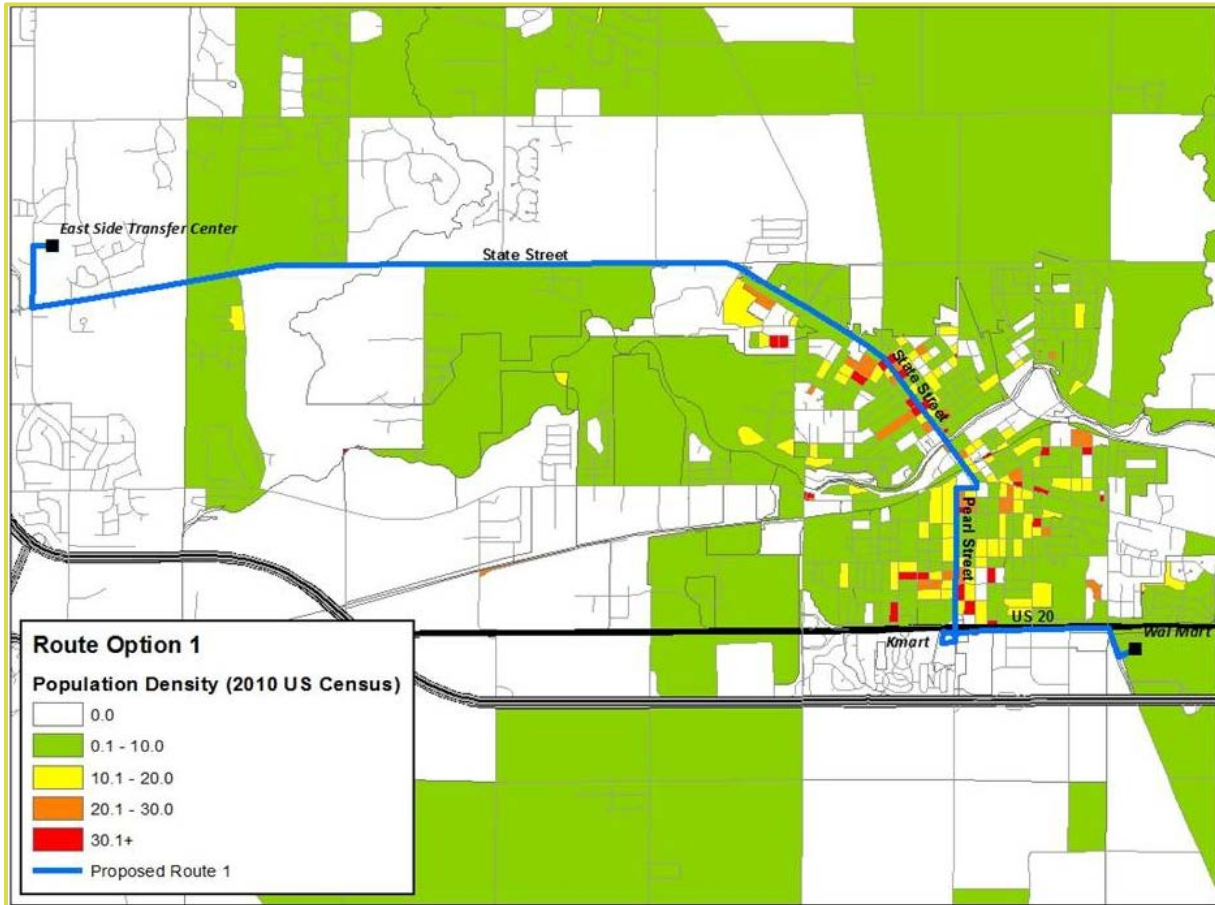
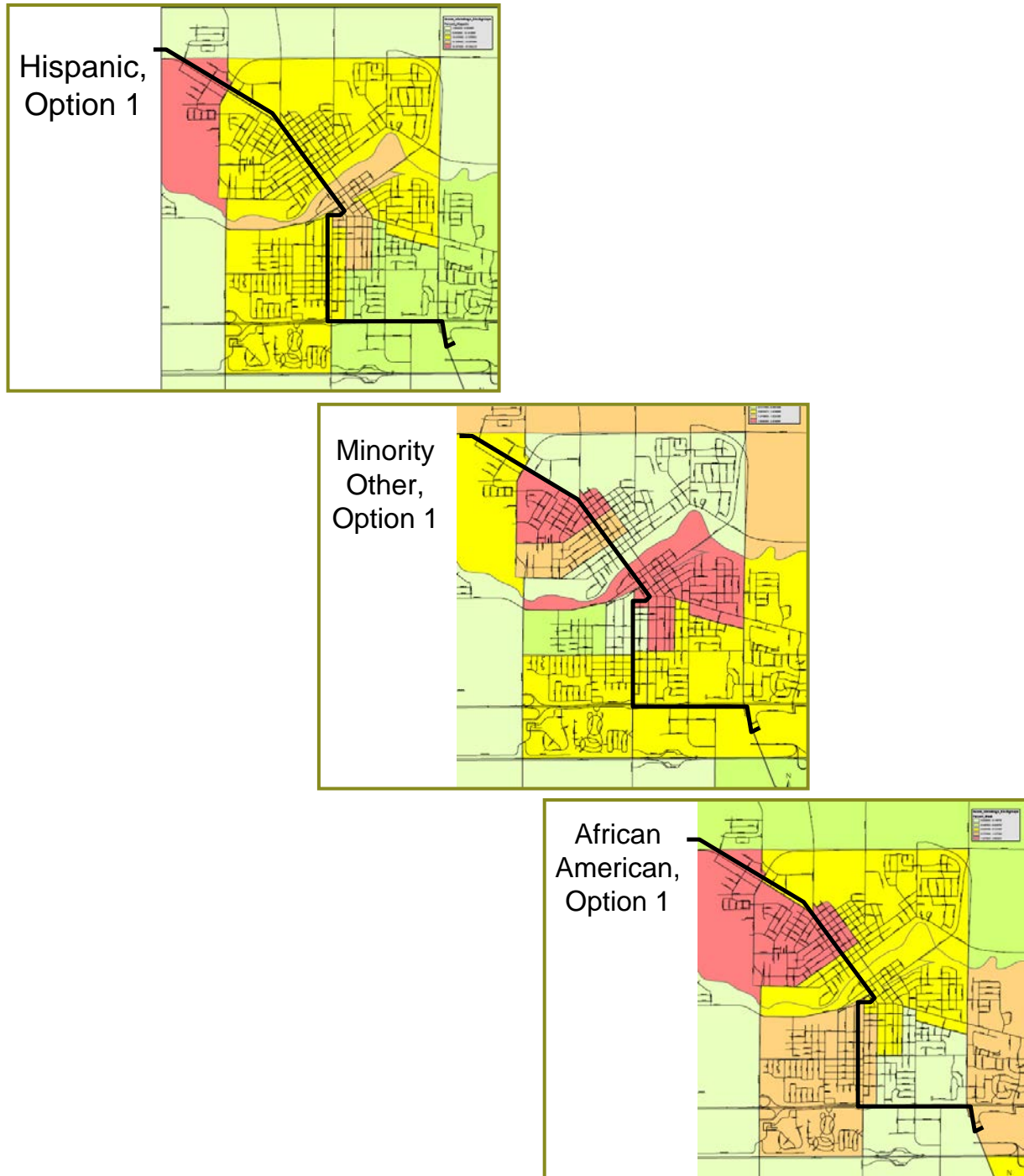




Figure 6-3 shows where the highest minority concentrations are located along Option One, according to the 2010 Census. The densest concentrations of minority people are shown in red and the least dense concentrations are shown in light green. As can be seen, Option 1 moves through the densest populations of Hispanics, African Americans and other minority populations.

Figure 6-3 – Option 1 Minority Population Density





### Option 2: East Side Transfer Center – Belvidere – Sheffield Apartments/Swedish American Medical Center – Walmart

Option 2 would have the bus begin at the East Side Transfer Center and continue south and east on State Street through Downtown Belvidere to Pearl Street. It would continue south on Pearl Street to Sixth Street, continue west on Sixth Street to the Sheffield Green Apartments and return back east on Sixth Street to State Street. It would continue south on State Street to the Swedish American Medical Center, and then continue south on State Street to US 20. It would continue east on US 20 to Belvidere Road. South of this intersection is the intersection of Belvidere, Genoa, and Chrysler Roads (Figure 6-4). The Walmart is on the southeast corner. The bus would stop at the Walmart before reversing its course back to the East Side Transfer Center.

Figure 6-4 – Option 2

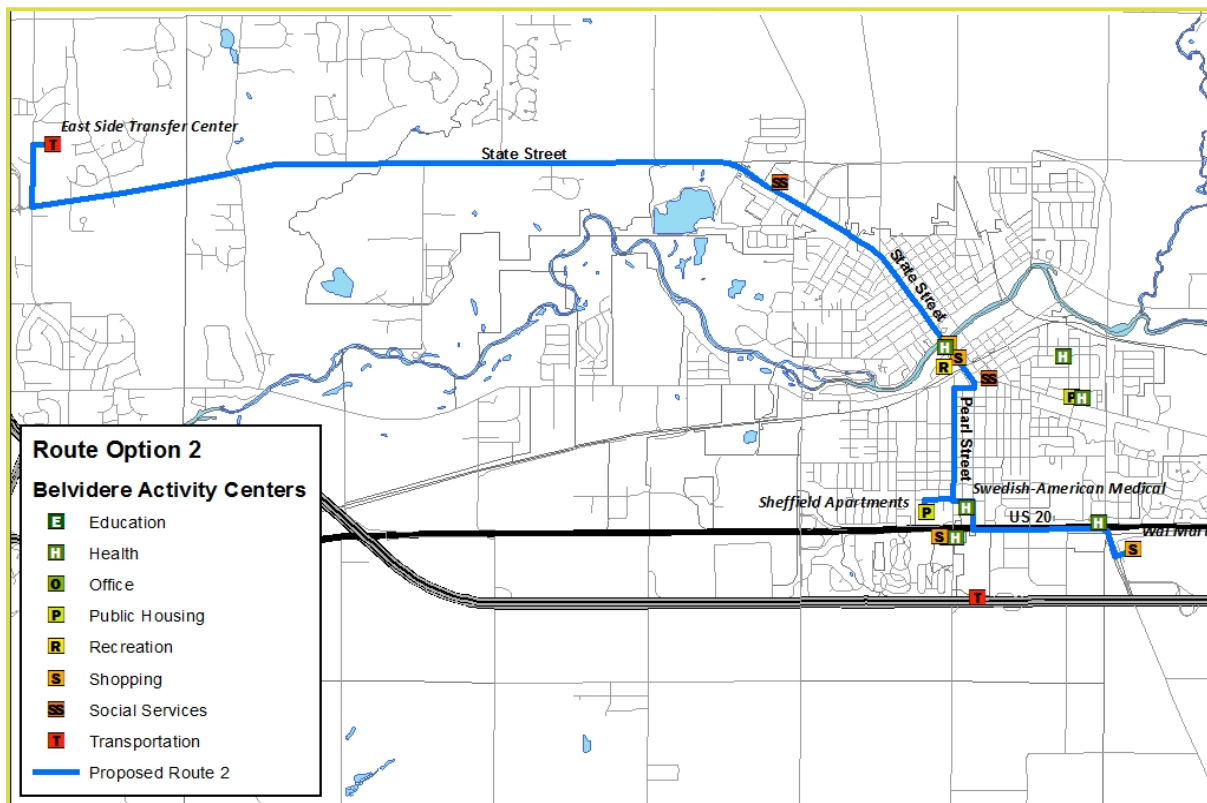
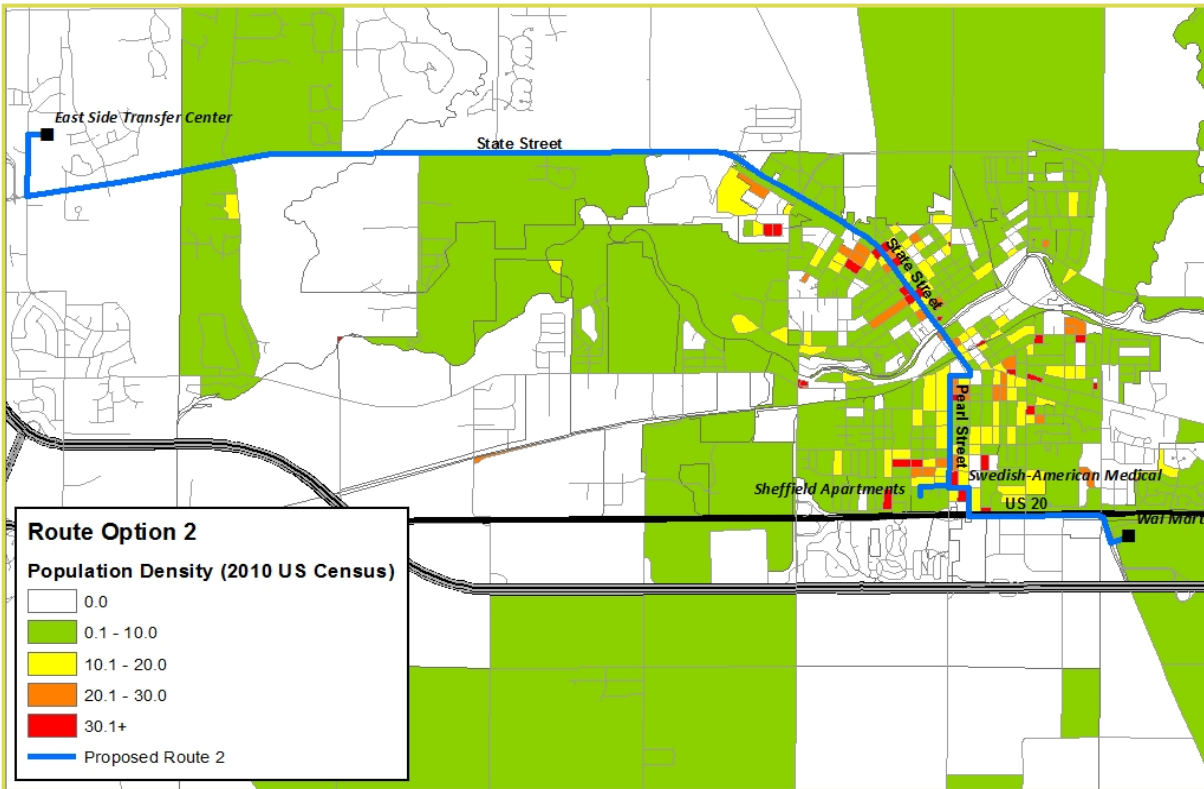




Figure 6-5 shows how Option 2 passes through some of the area's most populated census tracts.

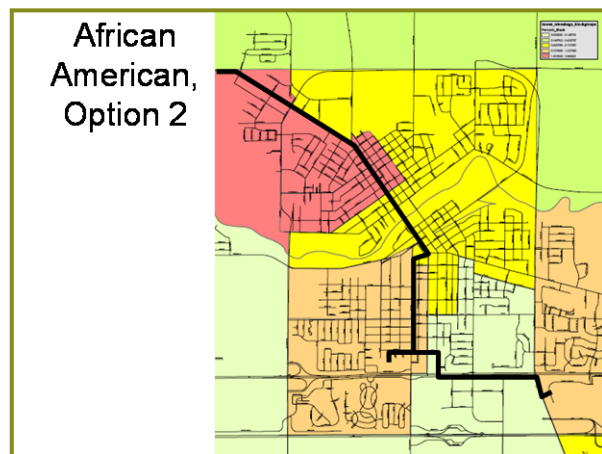
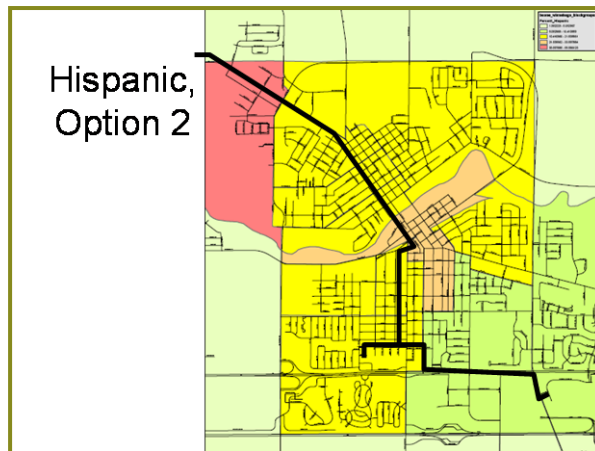
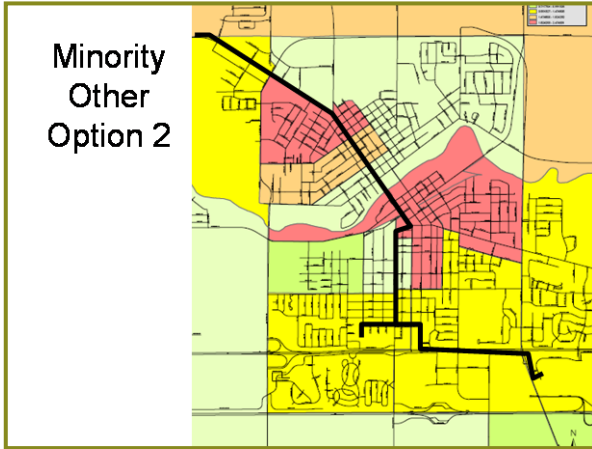
Figure 6-5 – Option 2 Population Density





Given similar routing to Option 1, Option 2 (**Figure 6-6**) also covers areas with large concentrations of minority populations.

**Figure 6-6 – Option 2 Minority Population Density**







### Option 3: East Side Transfer Center – Belvidere – Julien Street – Andrews Drive – Belvidere Road – Walmart

Option 3 would have a bus begin at the East Side Transfer Center and travel south and east on State Street to Julien Street. It would continue on Julien Street to Andrews Drive, travel south on Andrews Drive to Logan Avenue, and continue east on Logan Avenue to Belvidere Road. It would travel south on Belvidere Road to the intersection of Belvidere, Chrysler, and Genoa Roads. The Walmart is at the southeast corner of this intersection. The bus would end at the Walmart before reversing course back to the East Side Transfer Center (Figure 6-7).

Figure 6-7 – Option 3: East Side Transfer Center-Belvidere-Julien Street-Andrews Drive-Belvidere Road-Walmart

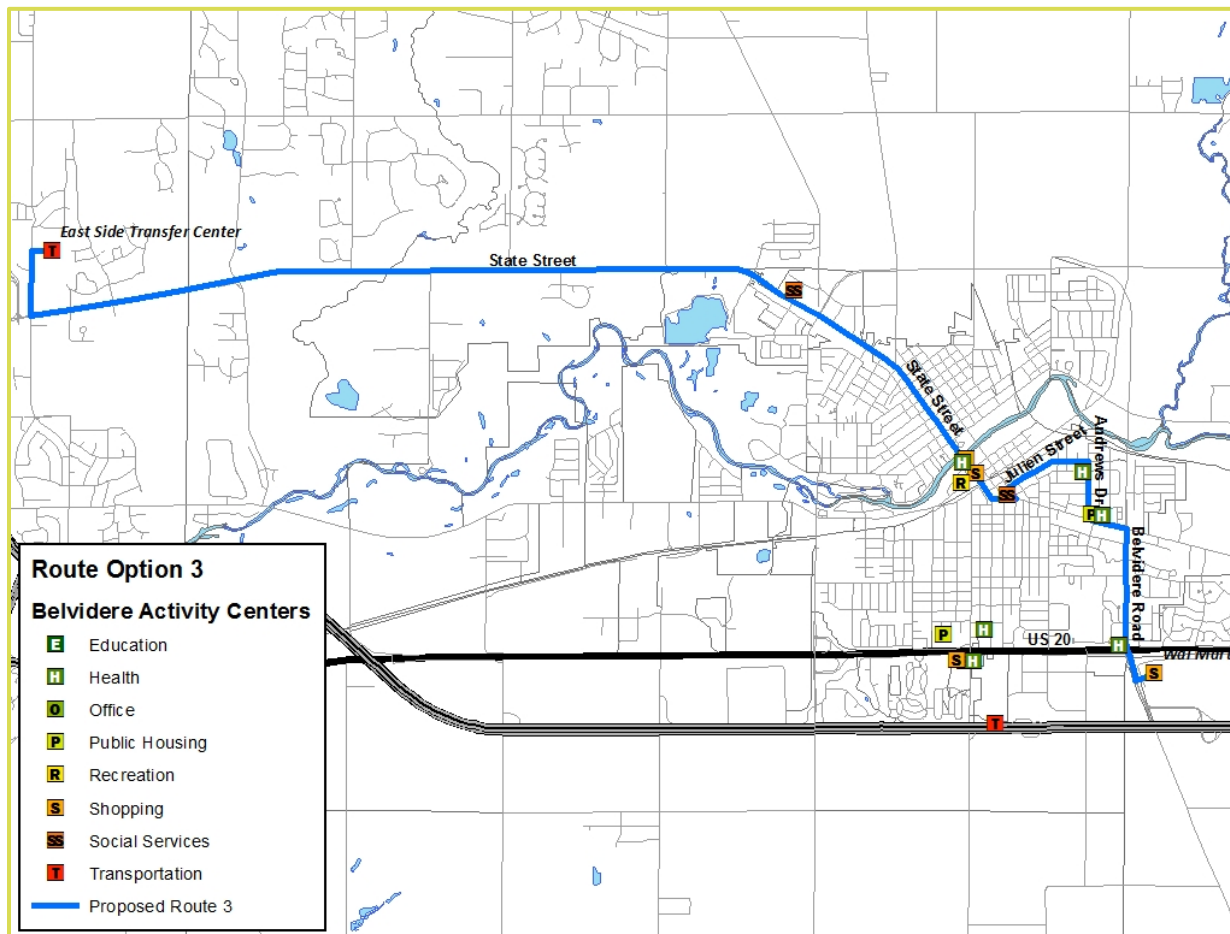




Figure 6-8 shows how Option 3 is east of some of the more densely populated census tracts.

Figure 6-8 – Option 3 Population Density

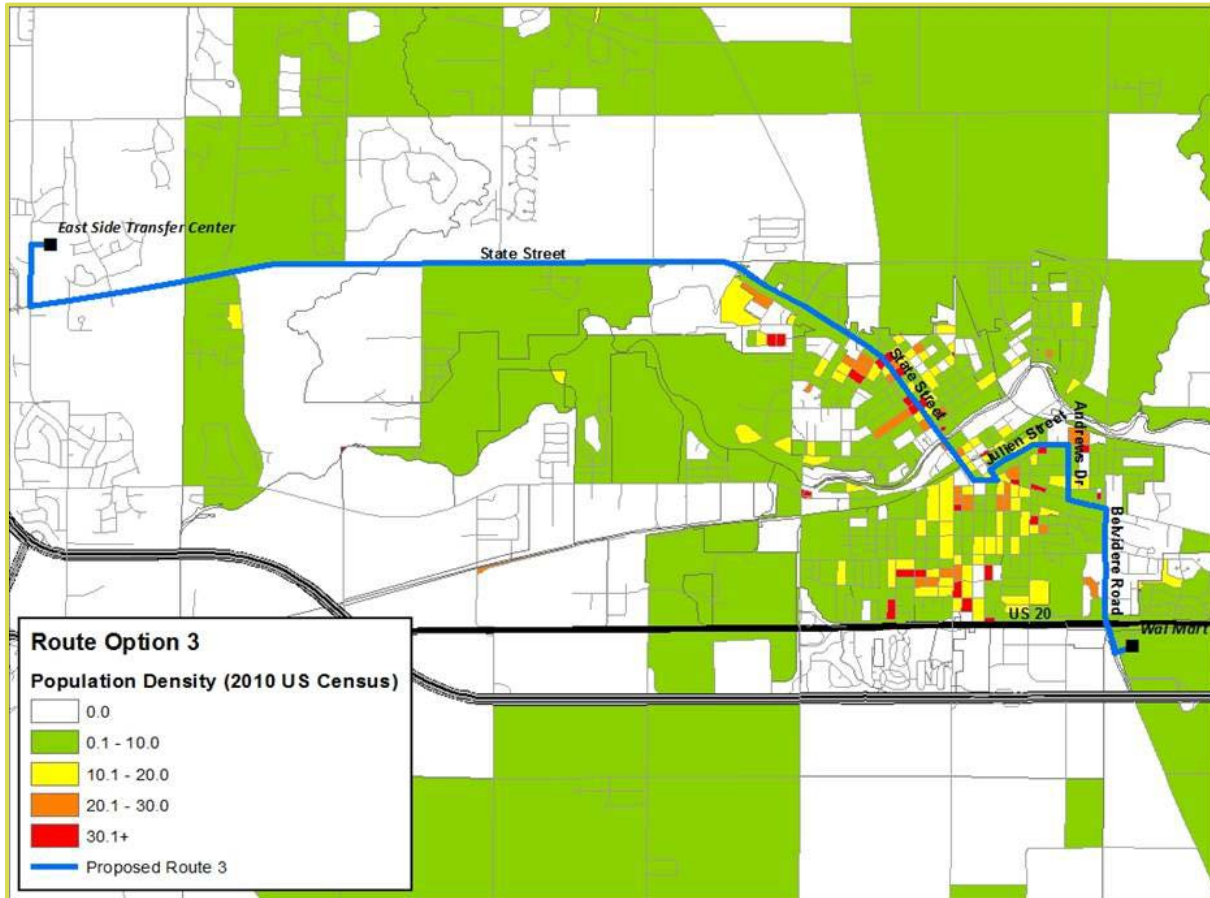
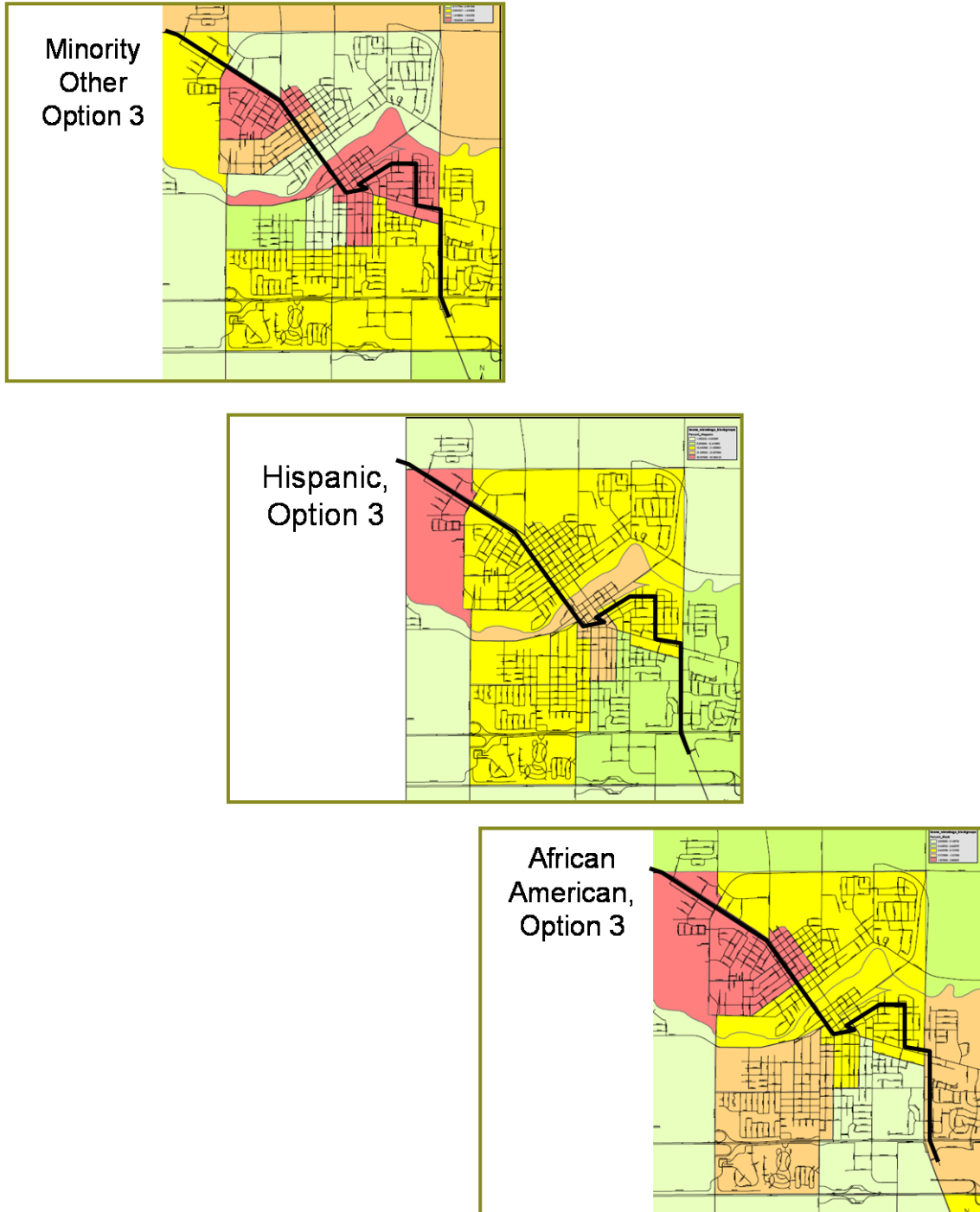




Figure 6-9 shows the density of minority populations, relative to the Option 3 routing. As the route moves east, it moves away from the more densely populated minority areas.

Figure 6-9 – Option 3 Minority Population Density





### Option 4: East Side Transfer Center – State Street – Pearl Street – Tollway Oasis

As shown in **Figure 6-10**, Option 4 would have a bus begin at the East Side Transfer Center and travel south and east on State Street to Pleasant Street, south on Pleasant to Pearl Street, and south on Pearl Street to 6<sup>th</sup> Street. The bus would continue west on 6<sup>th</sup> Street to the Sheffield Green Apartments, east on 6<sup>th</sup> Street to the Swedish American Medical Center on State Street, south on State Street and west on US 20 to Kmart, and south on Pearl Street and east to the Tollway Oasis.

**Figure 6-10 – Option 4: East Side Transfer Center-State Street-Pearl Street-Tollway Oasis**

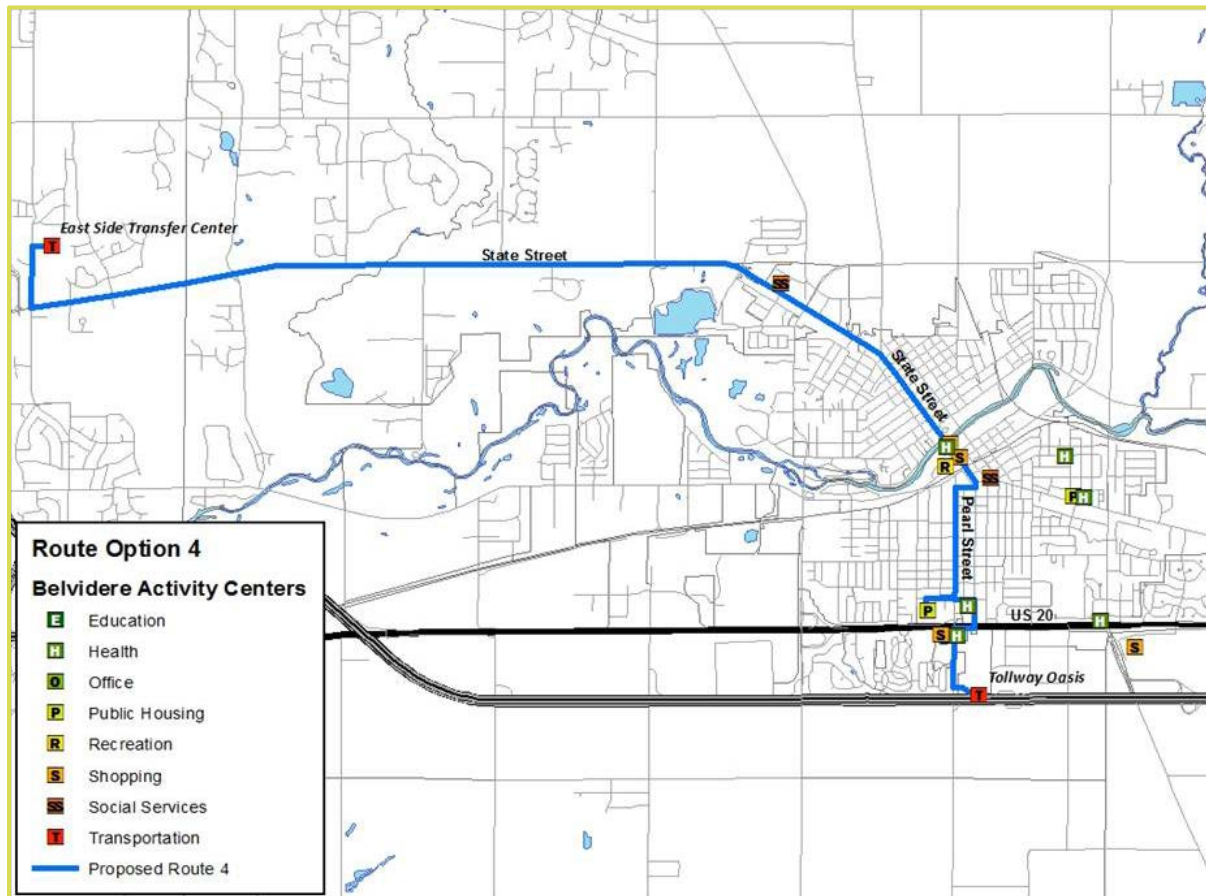
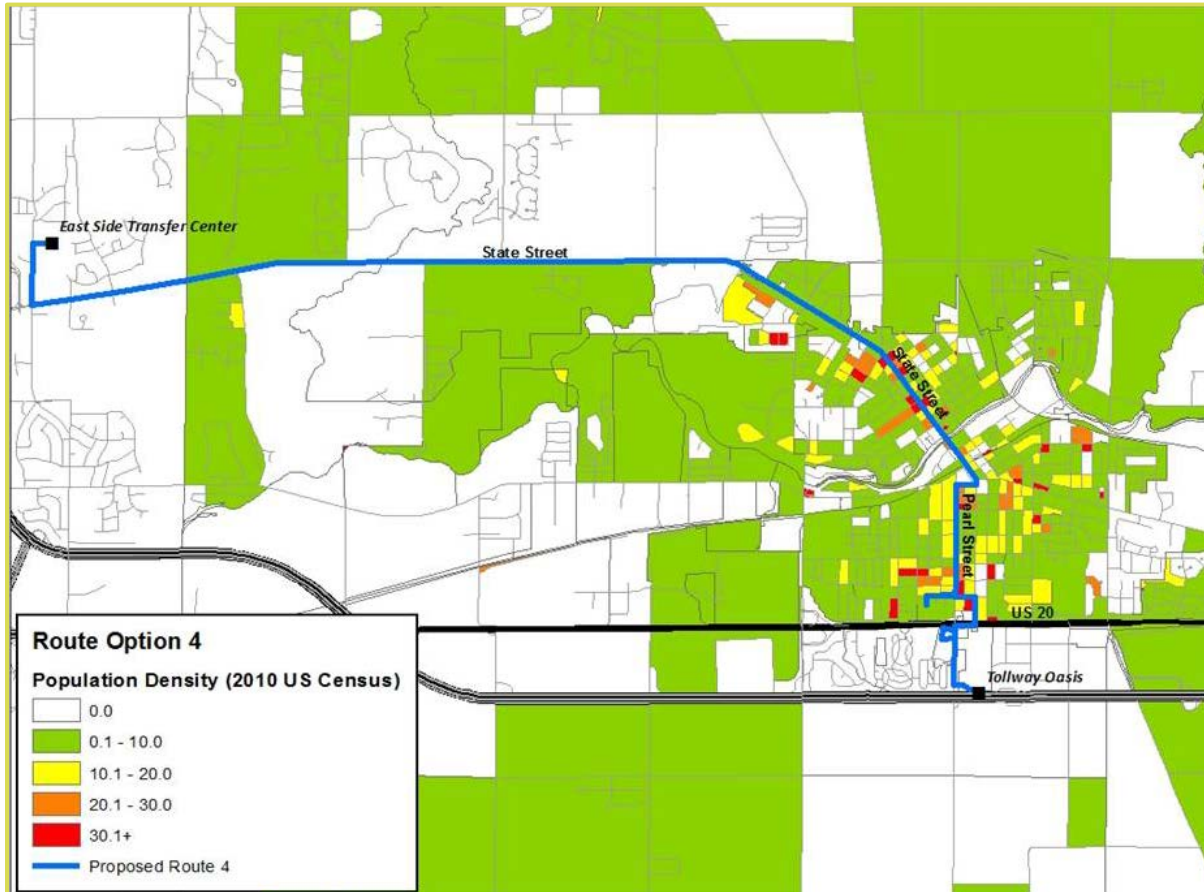




Figure 6-11 shows how Option 4 covers most of Belvidere's densest areas, including its downtown.

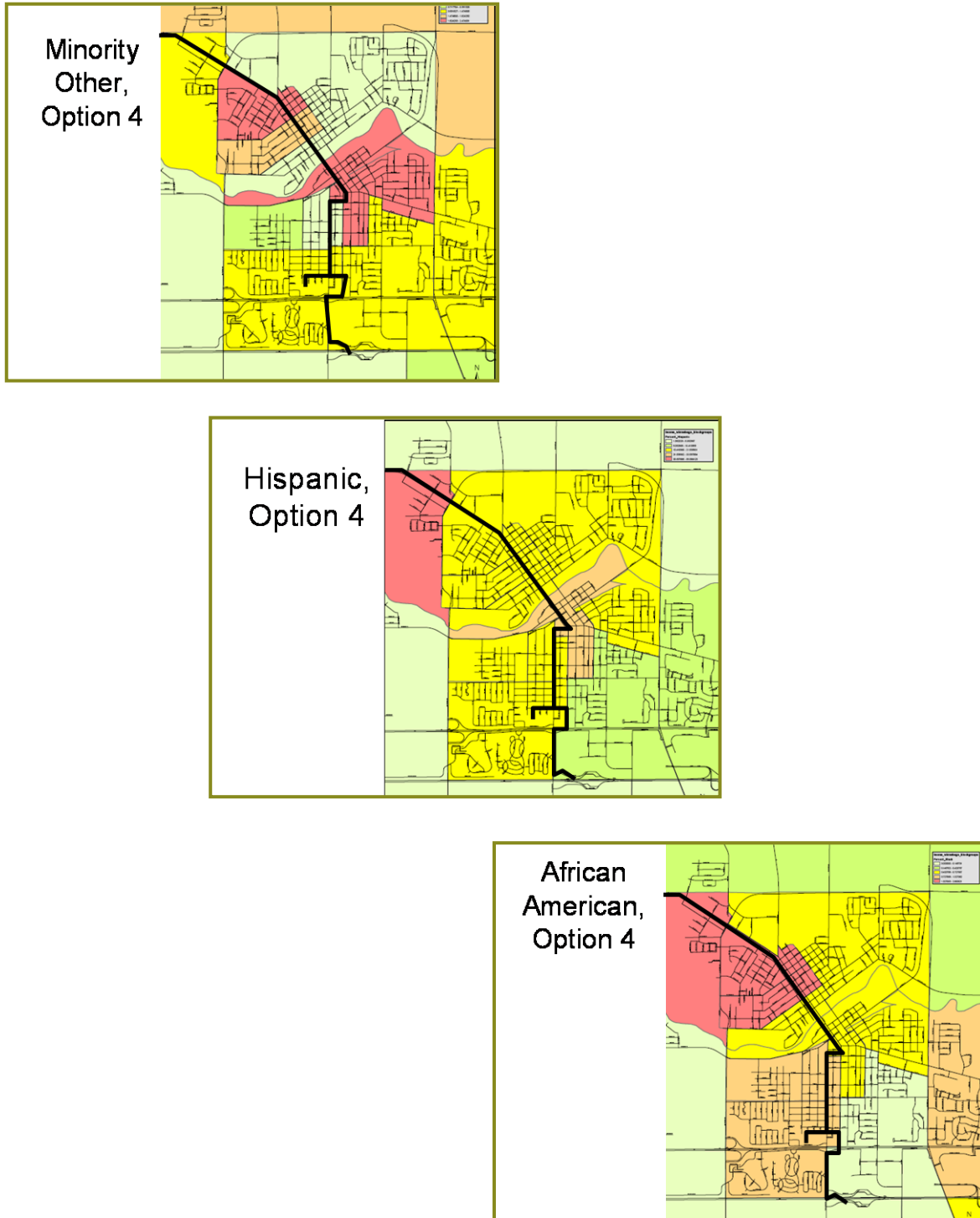
Figure 6-11 – Option 4 Population Density





Since Option 4 is centered on Belvidere, the overall population density and the minority population densities are high (Figure 6-12).

Figure 6-12 – Option 4 Minority Population Density

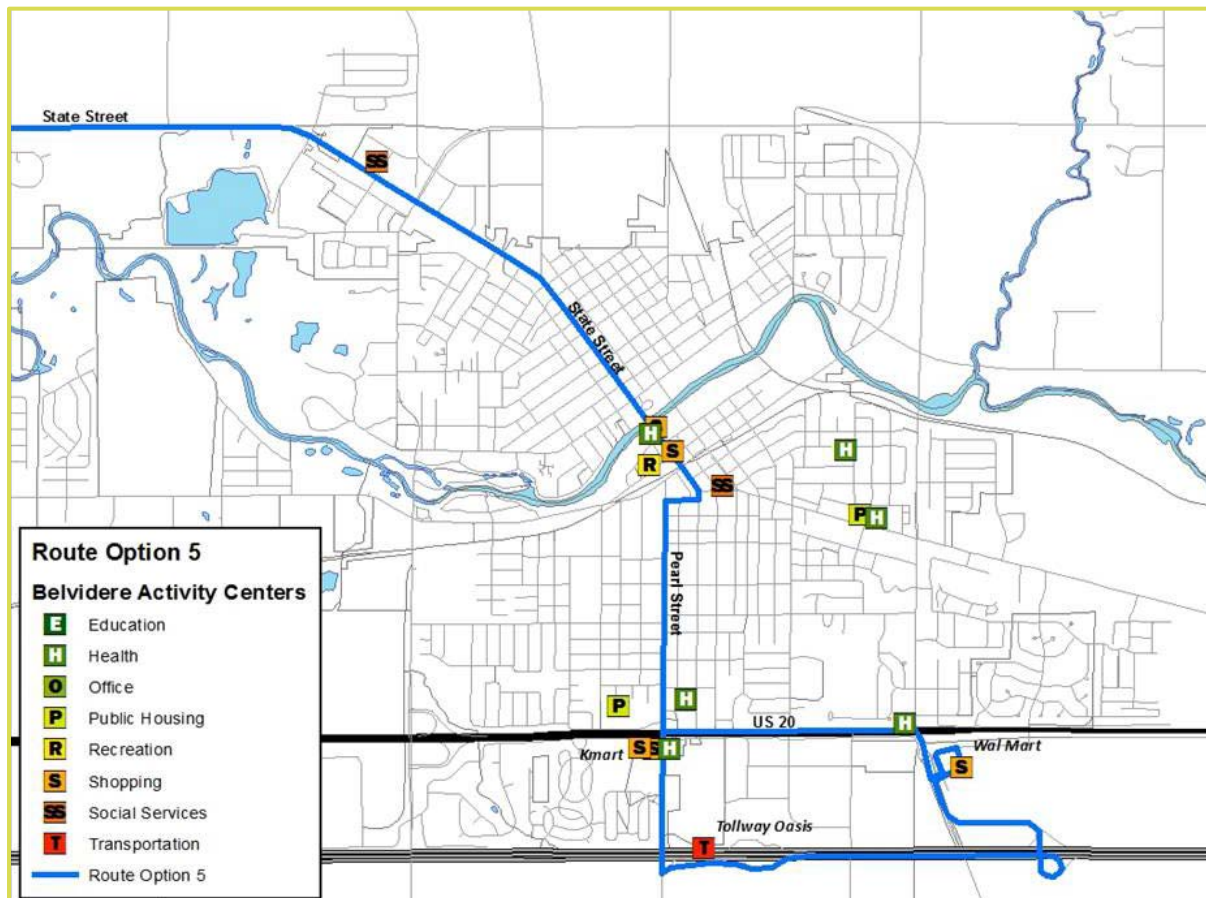




### Option 5: East Side Transfer Center – State Street – Pearl Street – Tollway Oasis – Walmart

Option 5, shown in **Figure 6-13**, begins at the East Side Transfer Center, moves east on State Street, then south on Pearl Street, past the Kmart, south from U.S. 20 to the Tollway Oasis, where it progresses east on I-90 north to County Road 4, to Walmart, then loops back to Pearl Street via U.S. 20 and continues to the East Side Transfer Center via State Street. This routing would provide service to three major transportation generators: Kmart, the Tollway Oasis, and Walmart.

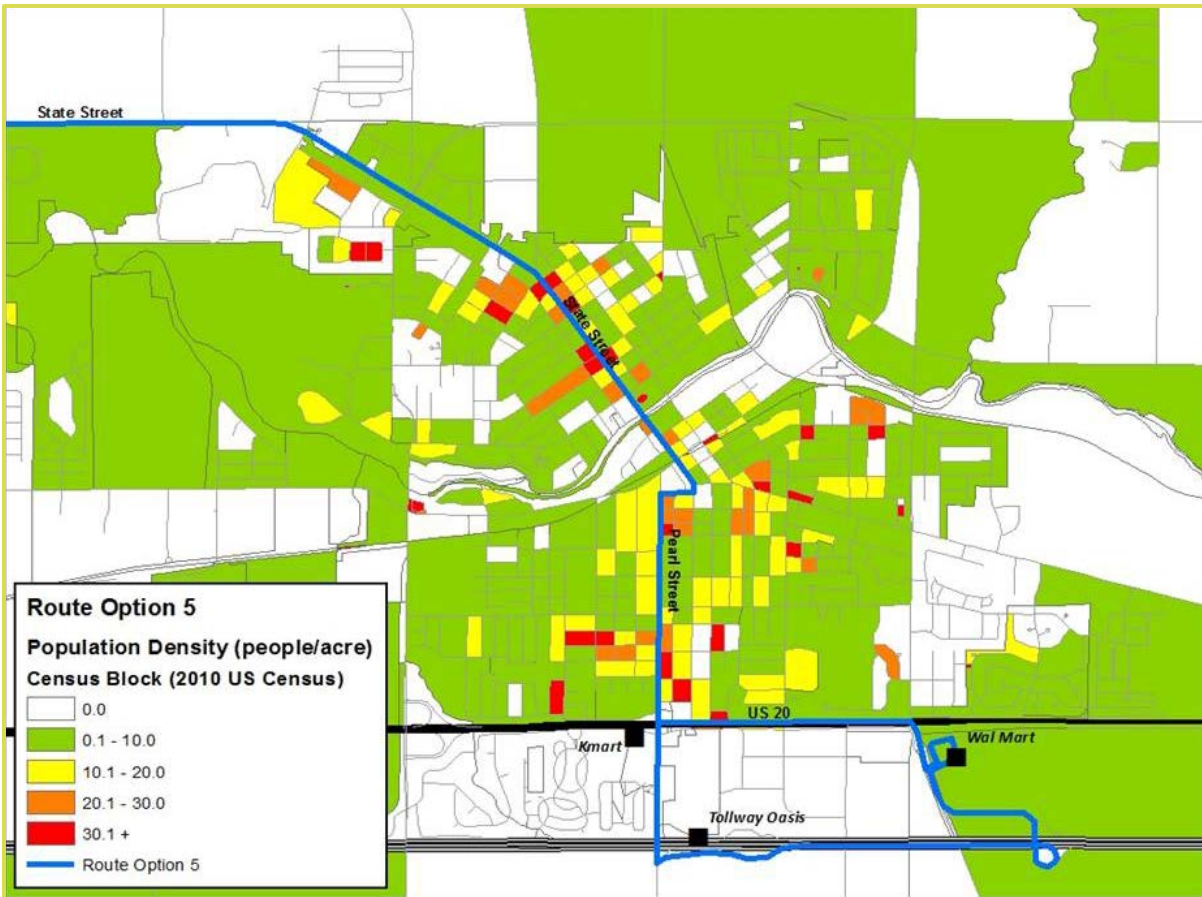
Figure 6-13 – Option 5





The routing down Pearl Street through the center of Belvidere allows this option to service several densely populated census tracts (Figure 6-14). Given that the area around the Tollway Oasis and the Tollway is sparsely populated, these segments of the route run through very low population density areas.

Figure 6-14 – Option 5 Population Density

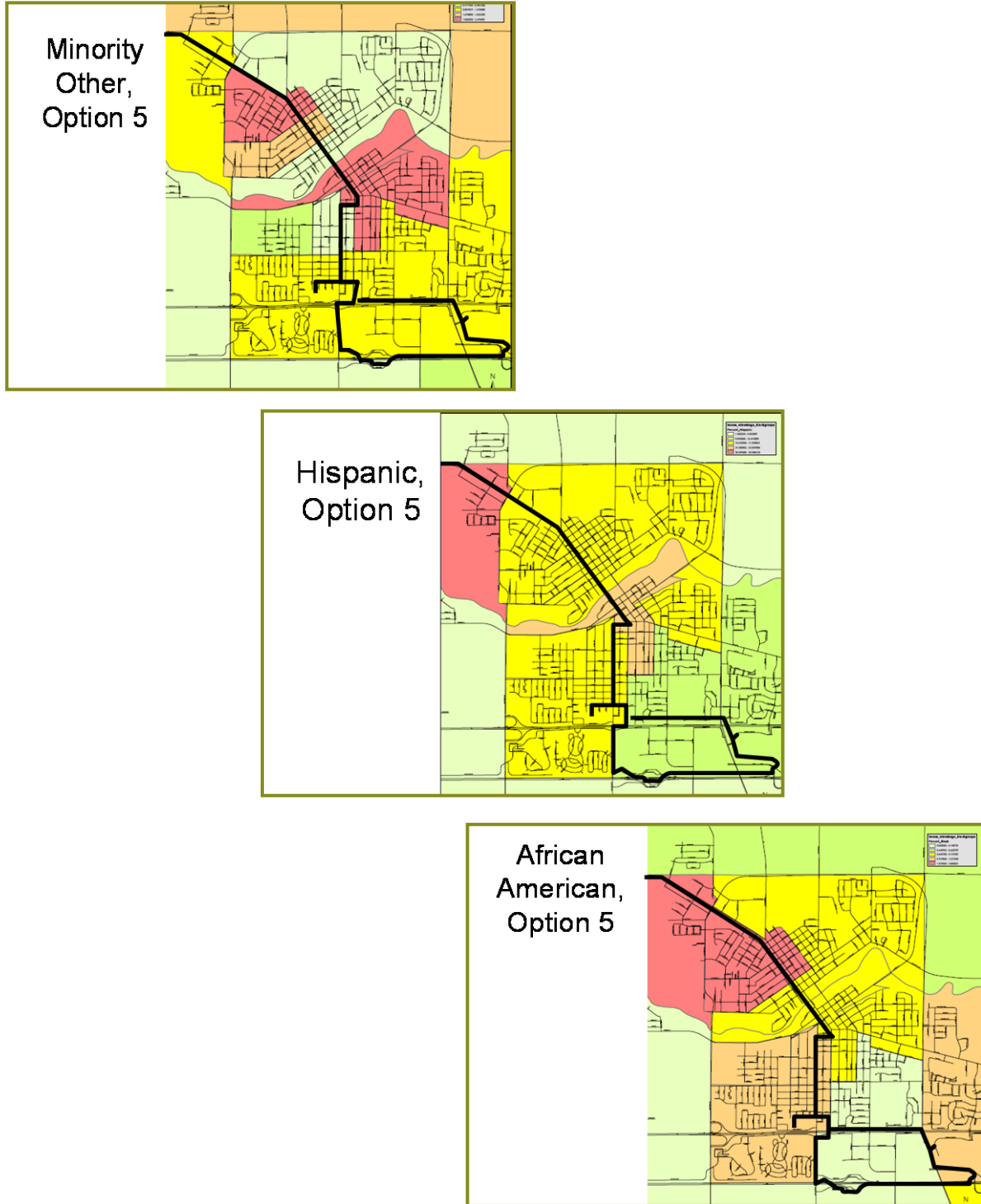






As shown in **Figure 6-15**, Option 5 travels through the center of Belvidere and high density minority population areas until the route reaches the Tollway Oasis and the Tollway.

**Figure 6-15 – Option 5 Minority Population Density**

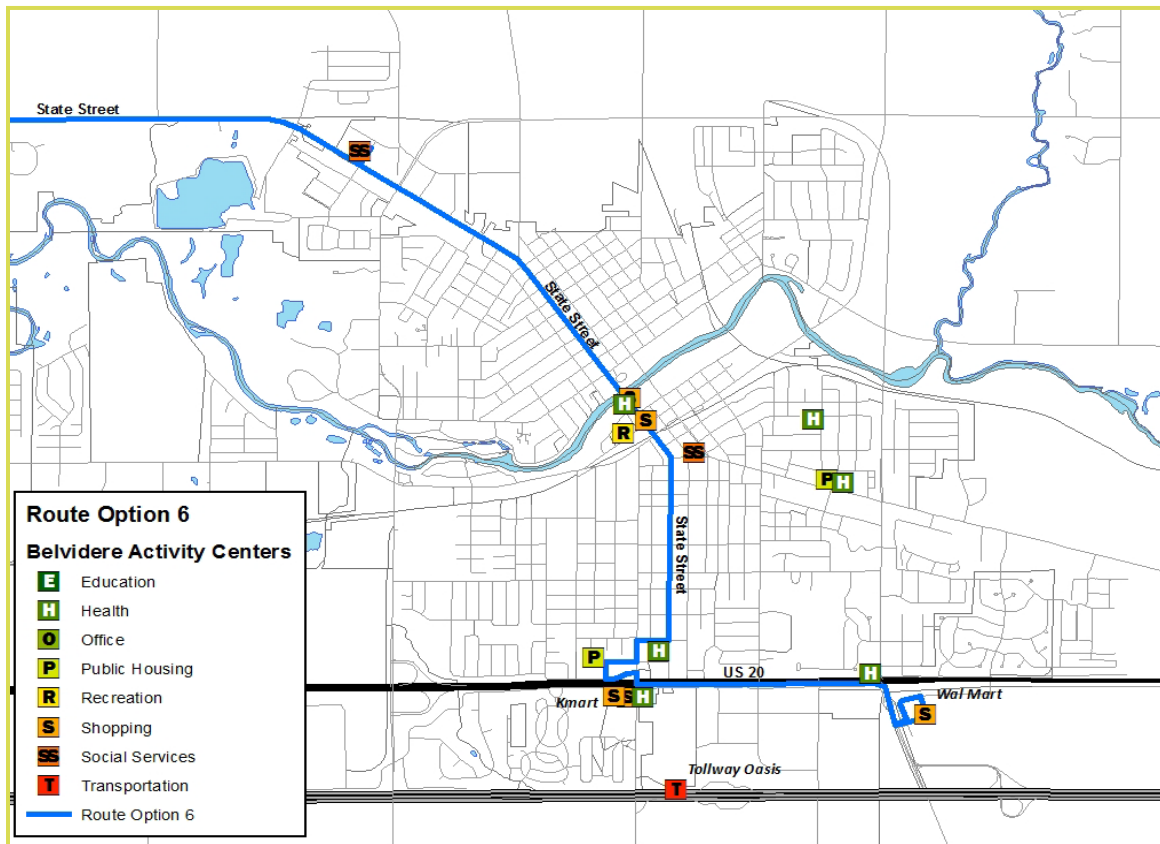




### Option 6: East Side Transfer Center - East State Street – Boone County Council on Aging – State Street – Swedish American Hospital – Pearl Street – Walmart

Option 6 would have a bus beginning at the East Side Transfer Center and continuing south and east on State Street, serving the Boone County Council on Aging and the Swedish American Hospital. It would also serve nearby public housing as well as the Kmart and Walmart before reversing course and returning to the East Side Transfer Center. (Please see **Figure 6-16** below.)

Figure 6-16 – Option 6





Option 6 touches many of the higher density census tracts (Figure 6-17). However, it touches less than the Options using Pearl Street.

Figure 6-17 – Option 6 Population Density

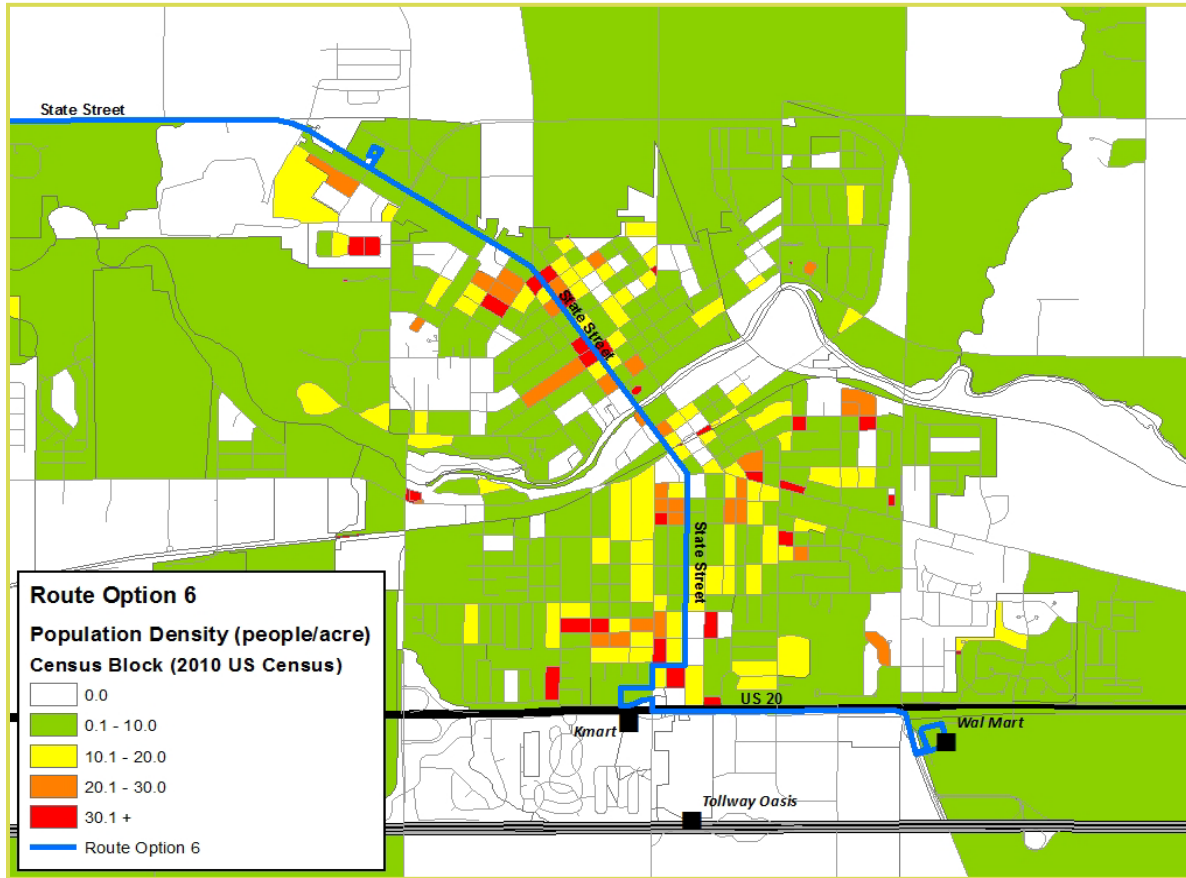
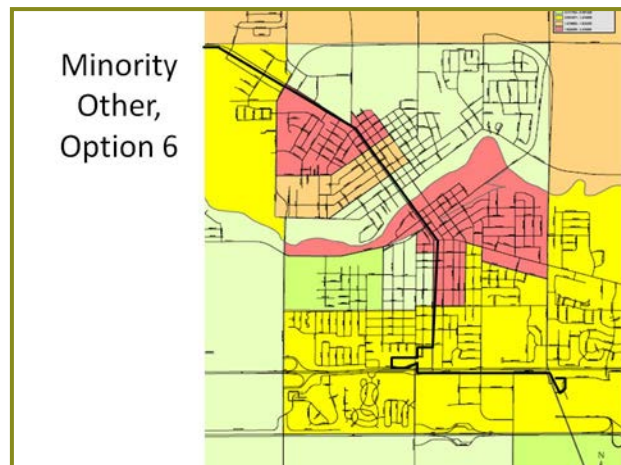
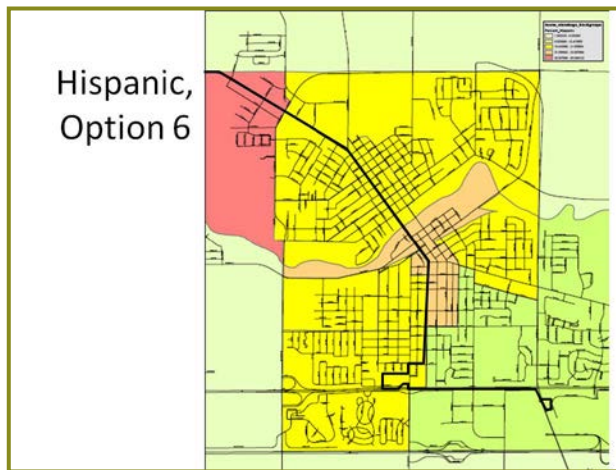
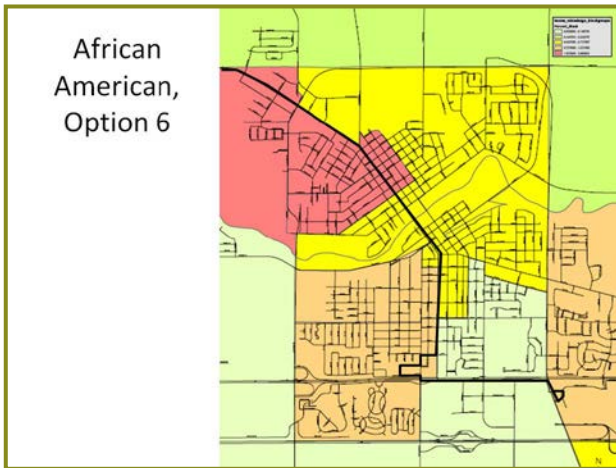




Figure 6-18 – Option 6 Minority Population Density





## Evaluation of Options

The study team evaluated operations for the East State Street and “in town” segments, comparing travel time, cycle length, frequency, required vehicles, and operating costs for weekday and weekend service.

The study team estimates projected travel speeds of 45 miles per hour on the East State Street segment for each Option, given this street’s free flowing traffic and limited stops (**Table 6-1**). Options 1-4 are 5.75 miles long, while Option 5 is 6.71 miles long and Option 6 is 5.55 miles long. All of these distances are measured for one direction of travel.

**Table 6-1 – Trip Length for In Town Route Segment**

Trip Length for In Town Route Segment			
Option	Name	Estimated Speed (mph)	One way trip Length (miles)
1	via Pearl to Kmart, Walmart	45	5.75
2	via Pearl to Sheffield, Swedish-American, Walmart	45	5.75
3	via Belvidere Road to Shadley, Crusader, Walmart	45	5.75
4	via Pearl Street to Tollway Oasis	45	5.75
5	via Pearl, with Oasis and Walmart one-way loop	45	6.71
6	via Pearl to Pacemaker, Walmart	45	5.55

It is anticipated that the “in town” segment will have a travel speed of 15 miles per hour given this segment’s higher land use densities and traffic congestion. Option 1 is 4.54 miles long one-way, Option 2 is 4.57 miles long, Options 3-5 are 4.13 miles long, and Option 6 is 4.95 miles long. (Please see **Table 6-2** for a tabular data summary).

**Table 6-2 – Trip Length for In Town Segment**

Trip Length for In Town Segment			
Option	Name	Estimated Speed (mph)	One way trip Length (miles)
1	via Pearl to Kmart, Walmart	15	4.54
2	via Pearl to Sheffield, Swedish-American, Walmart	15	4.57
3	via Belvidere Road to Shadley, Crusader, Walmart	15	4.13
4	via Pearl Street to Tollway Oasis	15	4.13
5	via Pearl, with Oasis and Walmart one-way loop	15	4.13
6	via Pearl to Pacemaker, Walmart	15	4.95





The study team assumed that each route will maintain an hour-long headway with one vehicle (**Table 6-3**). Option 1 has a one-way travel time of 25.8 minutes and a 57-minute cycle time. Option 2 has a 25.9 minute one-way travel time and a 57-minute cycle time. Options 3 and 4 have one-way travel times of 24.2 minutes and 53-minute cycle times. Option 5 has a 25.5 minute one-way travel time and a 56-minute cycle time. Option 6 requires the most travel time at 27.2 minutes and has the longest cycle time at 60 minutes.

**Table 6-3 – Travel Time, Cycle Length, Frequency, Vehicle Requirement**

Travel Time, Cycle Length, Frequency, Vehicle Requirement					
Option	Name	One way travel time	Cycle Time	Frequency	Required Vehicles
1	via Pearl to Kmart, Walmart	25.8	57	60	1
2	via Pearl to Sheffield, Swedish-American, Walmart	25.9	57	60	1
3	via Belvidere Road to Shadley, Crusader, Walmart	24.2	53	60	1
4	via Pearl Street to Tollway Oasis	24.2	53	60	1
5	via Pearl, with Oasis and Walmart one-way loop	25.5	56	60	1
6	via Pearl to Pacemaker, Walmart	27.2	60	60	1

The study team also assumed each Option would begin at 6:00 a.m. and end at 8:00 p.m., operating for 14 weekday revenue hours (**Table 6-4**). Each would operate 255 days per year (5 days per week) consisting of 3,570 revenue hours. And each would cost \$452,000 to operate, assuming an hourly operating cost of \$126.36.

**Table 6-4 – Annual Operating Cost**

Annual Operating Cost							
Option	Name	Begin Time	End Time	Daily Revenue Hours	Days of Operation	Annual Revenue Hours	Cost
1	via Pearl to Kmart, Walmart	6:00	20:00	14.0	255	3,570	\$452,000
2	via Pearl to Sheffield, Swedish-American, Walmart	6:00	20:00	14.0	255	3,570	\$452,000
3	via Belvidere Road to Shadley, Crusader, Walmart	6:00	20:00	14.0	255	3,570	\$452,000
4	via Pearl Street to Tollway Oasis	6:00	20:00	14.0	255	3,570	\$452,000
5	via Pearl, with Oasis and Walmart one-way loop	6:00	20:00	14.0	255	3,570	\$452,000
6	via Pearl to Pacemaker, Walmart	6:00	20:00	14.0	255	3,570	\$452,000





For weekday service, the study team analyzed various daily operating hours to compare annual operating costs. Operating eight hours per day, for 255 days per year would equal 2,040 annual hours and cost \$257,744 per year (**Table 6-5**). In comparison, operating 16 hours per day for 255 days per year would equal 4,080 annual hours and cost \$515,549 annually.

**Table 6-5 – Weekday Service Operating Cost**

Weekday Service Operating Cost			
Daily Hours	Days of Operation	Annual Hours	Annual Cost
8	255	2040	\$257,774
9	255	2295	\$289,996
10	255	2550	\$322,218
11	255	2805	\$354,440
12	255	3060	\$386,662
13	255	3315	\$418,883
14	255	3570	\$451,105
15	255	3825	\$483,327
16	255	4080	\$515,549

As with weekday services, the study team calculated annual operating costs for Saturday service (**Table 6-6**). Adding Saturday operations, and operating eight hours per day would require 307 days of operations and equal 2,456 annual hours at a cost of \$310,340 per year. In comparison, operating 16 hours per day and adding Saturday service would result in 4,912 annual hours at a cost of \$620,680 hours per year.

**Table 6-6 – Weekday and Saturday Operating Cost**

Weekday and Saturday Service Cost			
Daily Hours	Days of Operation	Annual Hours	Annual Cost
8	307	2456	\$310,340
9	307	2763	\$349,133
10	307	3070	\$387,925
11	307	3377	\$426,718
12	307	3684	\$465,510
13	307	3991	\$504,303
14	307	4298	\$543,095
15	307	4605	\$581,888
16	307	4912	\$620,680





The study team also evaluated adding a Sunday operation to weekdays and Saturdays (**Table 6-7**). Operating eight hours per day, 365 days per year would equal 2,920 hours and annually cost \$368,971. In comparison, operating 16 hours per day, and adding Sunday service, would result in 5,840 service hours at an annual cost of \$737,942.

**Table 6-7 – Weekday, Saturday and Sunday Service Cost**

Weekday, Saturday and Sunday Service Cost			
Daily Hours	Days of Operation	Annual Hours	Annual Cost
8	365	2920	\$368,971
9	365	3285	\$415,093
10	365	3650	\$461,214
11	365	4015	\$507,335
12	365	4380	\$553,457
13	365	4745	\$599,578
14	365	5110	\$645,700
15	365	5475	\$691,821
16	365	5840	\$737,942

## Conclusion

Given their understanding of the community’s needs and RMTD’s budget constraints, the study team recommends Option 5, the East Side Transfer Center-State Street-Pearl Street-Tollway Oasis-Walmart option. It would connect the East Side Transfer Center with Downtown Belvedere via areas of transit-appropriate densities, minority neighborhoods, and several major traffic generators.

Option 5 provides service not only for transit-dependent populations, but for choice riders such as commuters making connections at the Tollway Oasis. This route can be run with one-hour headways at a cost within RMTD’s budgeted funds.

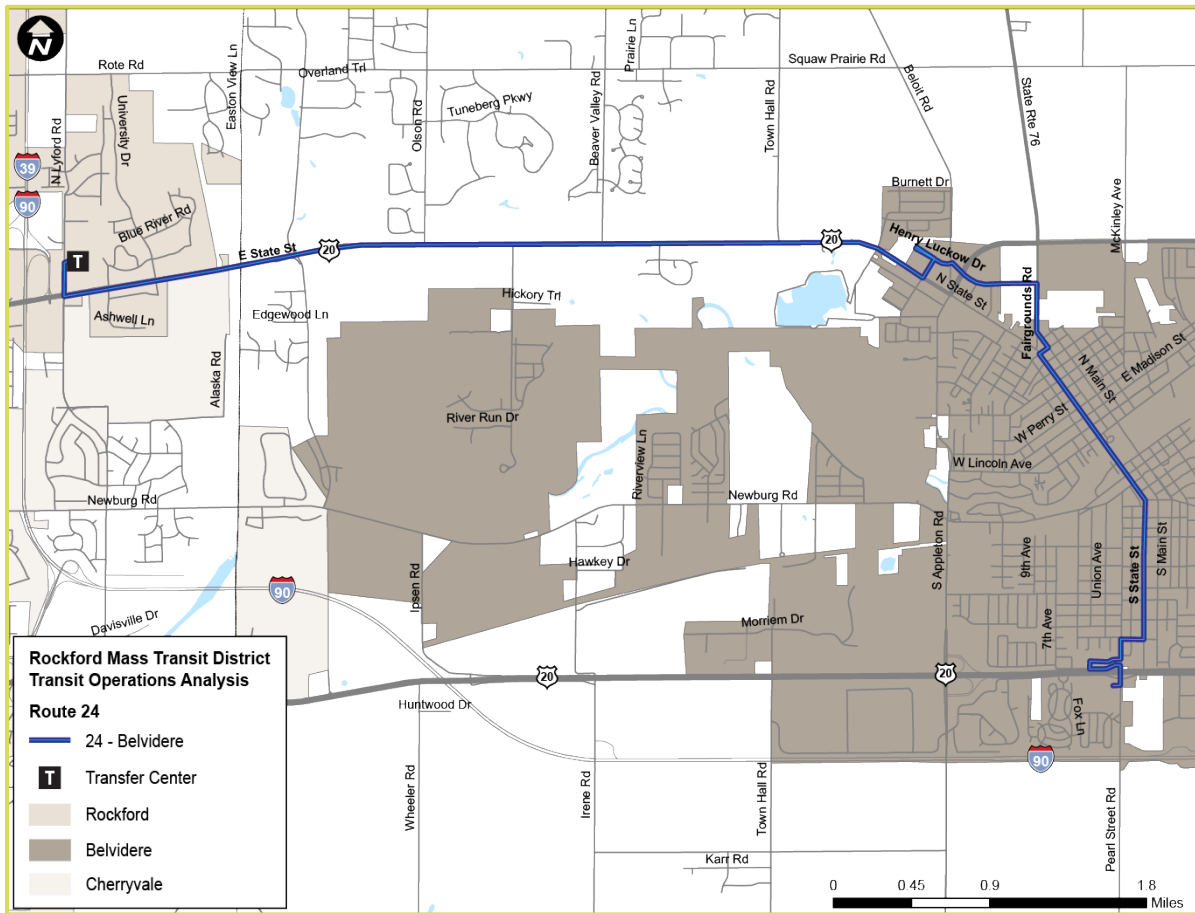
RMTD staff and Belvedere stakeholders chose an option similar to Option 6, East Side Transfer Center – East State Street – Boone County Council on Aging – State Street – Swedish American Hospital – Pearl Street – Walmart, terminating at Kmart rather than Walmart as shown in **Figure 6-19**.







Figure 6-19 – Implemented Belvidere Route







# 7. PERFORMANCE REVIEW

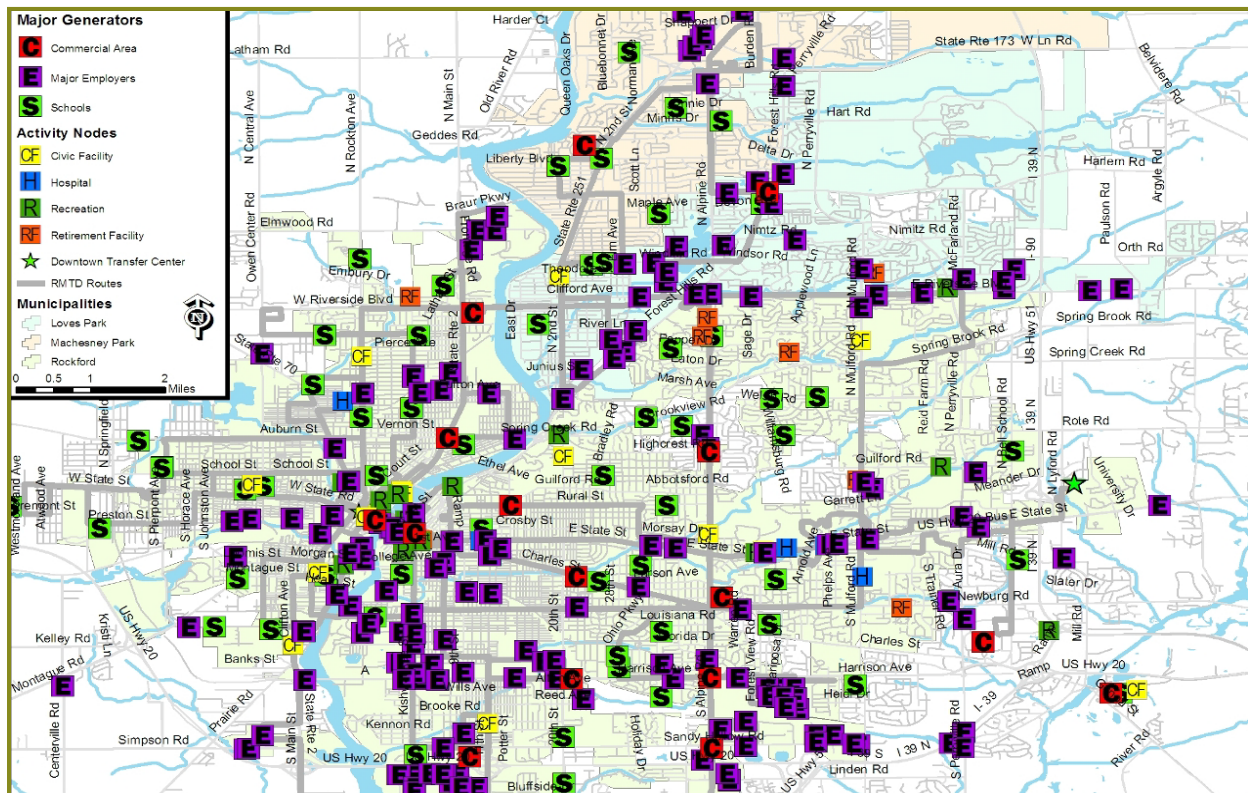
This section documents a productivity analysis of RMTD’s existing routes.

## Service Coverage

As shown in **Figure 7-1**, RMTD serves most of the Rockford metropolitan area’s major traffic generators. Its routes touch every key commercial area. Route 1 - West State Street serves the Farm & Fleet store. Route 2 - School Street serves the IGA store. Route 3 - Huffman Street serves the Walmart. Route 4 - North Main Street serves the North Town Mall. Route 7 - South Main Street serves the IGA. Route 11 - East State Street serves multiple shopping centers and the CherryVale Mall. Route 14 – 7<sup>th</sup> Street and Route 15 – Kishwaukee serve the K-Mart. Route 20 – Alpine Crosstown serves multiple shopping destinations, including Target and Home Depot. Route 22 – North 2<sup>nd</sup> Street serves the Machesney Park Mall.

RMTD also directly serves schools; most major employers, except a few to the east and south; and activity nodes, consisting of civic facilities, hospitals, recreation sites, and retirement facilities.

Figure 7-1 – Major Traffic Generators





## Route Productivity Comparison

**Table 7-1** shows passengers per hour by route, which are based on a boarding and alighting survey conducted in June 2011. RMTD averages 25.4 passengers per hour systemwide. The study team has ranked and grouped the routes by their performance level.

The groupings consist of routes that perform at a level greater than 80 percent of system-wide passengers per hour, those that generate between 50 and 80 percent of the system-wide average, and those that fall below 50 percent of the system-wide passengers per hour. These performance categories serve as a guide in transit planning. Routes that perform greater than 80 percent of system-wide passengers per hour generally do not require modifications unless they are improvements to service frequency or service hours. Routes performing between 50 and 80 percent of system-wide passengers per hour should be considered for modification. Routes achieving less than 50 percent of system-wide passengers per hour are candidates for elimination or replacement by some other service type.

**Table 7-1 – Weekday Route Performance**

Weekday Route Performance											
Route	Passengers	Daily Revenue Hours	Passengers Per Hour	Rank							
2 School Street	969	12.9	75.0	1	<table border="1"> <tr> <td style="background-color: #d9ead3;"></td> <td>Greater than 80% of system-wide passengers per hour</td> </tr> <tr> <td style="background-color: #d9ead3;"></td> <td>Between 50 and 80% of system-wide passengers per hour</td> </tr> <tr> <td style="background-color: #d9ead3;"></td> <td>Less than 50% of the system-wide passengers per hour</td> </tr> </table>		Greater than 80% of system-wide passengers per hour		Between 50 and 80% of system-wide passengers per hour		Less than 50% of the system-wide passengers per hour
	Greater than 80% of system-wide passengers per hour										
	Between 50 and 80% of system-wide passengers per hour										
	Less than 50% of the system-wide passengers per hour										
15 Kishwaukee Street	874	17.4	50.2	2							
14 7th Street	605	12.9	46.8	3							
1 West State Street	496	12.7	39.1	4							
4 North Main Street	534	14.7	36.4	5							
3 Huffman Street	223	7.0	31.9	6							
16 Big Loop North	382	13.5	28.3	7							
17 Big Loop South	386	14.0	27.6	8							
6 Kilburn	241	9.5	25.4	9							
13 Rural Street	146	6.0	24.3	10							
5 Clifton Road	175	9.5	18.4	11							
11 East State Street	924	55.7	16.6	12							
12 Charles Street	242	14.7	16.5	13							
22 North 2nd Street	219	16.8	13.0	14							
7 South Main Street	173	19.0	9.1	15							
20 Alpine Crosstown	80	26.0	3.1	16							
Total/Avg.	6,669	262.3	25.4	--							

Source: Boarding and Alighting Survey, June 2011.



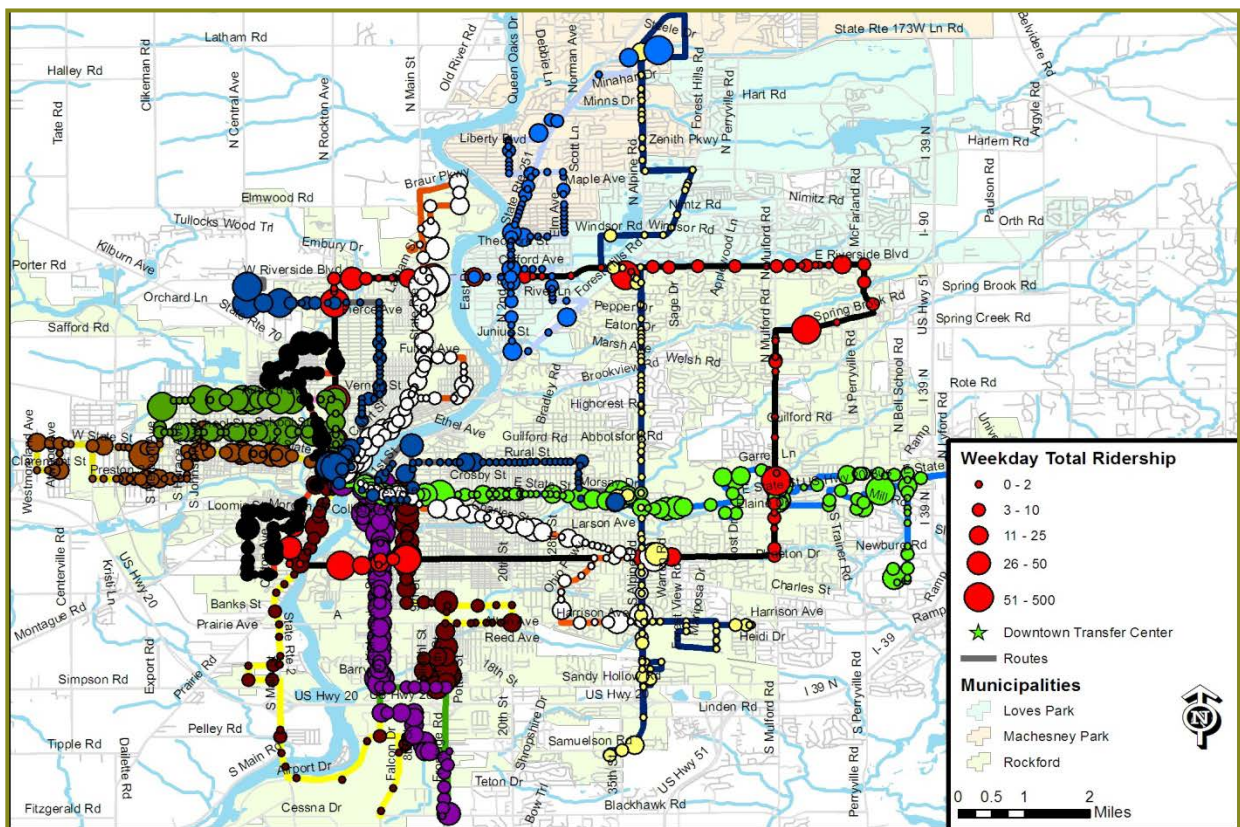


RMTD has 10 routes operating at an acceptable level, four routes it should consider for modification, and two routes it should consider for elimination or replacement. Its top-ranked route is Route 2 – School Street with 75 passengers per hour and the highest ridership of any route in the system. The second highest route is Route 11 – East State Street, which performs at a much lower rate of passengers per hour, given its longer operating hours. Its best performing routes are those in established neighborhoods that have a greater density of transit generators such as employers, schools, and commercial areas. Please refer to **Appendix 2** for stop level ridership activity by route.

### Weekday Service

Figure 7-2 details the boardings by stop for RMTD’s weekday service.

Figure 7-2 – Weekday Boardings





### Route 1 – West State Street

Route 1's boardings are somewhat clustered with heavier boardings near the Crusader Clinic, Farm & Fleet, and the Housing Authority's Concord Commons. Route 1 ranks fourth for passengers per hour and carries an average of 39.1 passengers per hour on weekdays. Road construction may affect this route in the near future since State Street from downtown to the west will be converted to a four-lane boulevard.

### Route 2 – School Street

Route 2 is the top ranked route for weekday passengers per hour and generated more riders than any other route during the boarding and alighting counts. This route travels through older, well-established residential areas, making a large number of closely spaced stops. Public Aid and a Housing Authority complex are on this route.

### Route 3 – Huffman Street

Route 3 ranks sixth for passengers per hour with an average of 31.9 passengers per hour on weekdays. It is a short route serving older neighborhoods and some industrial areas. It operates seven hours per weekday on 90 minute headways. Walmart on West Riverside Boulevard is this route's major traffic generator.

### Route 4 – North Main Street

Route 4 has 30-minute service in the peak and is ranked fifth for passengers per hour. It carries more passengers than the fourth ranked West State Route, but has more daily revenue hours. This route has several major traffic generators, including North Towne Mall, Singer, and the North Rock Industrial Park.

Route 4 has ridership clusters at North Towne Mall on West Riverside Boulevard, Singer on North Main Street, and on the portion of the route on North Main Street out to approximately Brown Avenue. The portion of the route that serves the North Rock Industrial Park has limited ridership.

### Route 5 – Clifton

Route 5 ranks eleventh among the routes for passengers per hour and carries approximately 18.4 passengers per hour on weekdays. This is less than 80 percent of system-wide passengers per hour. It is one of RMTD's shorter routes and operates on half-hour headways. Although this route's ridership is low, it is relatively evenly spaced along the route. This route also has a large one-way loop which often creates longer ride times for passengers.

### Route 6 – Kilburn

Route 6 is on the lower end of the higher performing routes and is ranked ninth for passengers per hour. It operates on half-hour headways during the morning and afternoon peaks and on 60 minute headways at other times. Ridership is relatively evenly spaced along the route with ridership clusters near the intersection of Belden and Liberty and at the Collier Garden Apartments.





### Route 7 – South Main Street

Route 7 is the second lowest performing route in the RMTD system with approximately 9.1 passengers per hour. It operates on 60 minute headways 19 hours per day during the week. This route’s key traffic generators include the Greater Rockford Airport, South Rock Industrial Park, UPS, and an IGA on South Main Street. Ridership clusters primarily at these traffic generators.

### Route 11- East State Street

Route 11 is in the lower half of the RMTD routes for passengers per hour. It achieves 16.6 passengers per hour during weekday service. Still, this route has the second highest total ridership. The passenger per hour number is low given the number of hours this route operates. This route serves a large number of traffic generators, including two health facilities (Swedish American Hospital and OSF/St. Anthony), Midvale Residences, Forest Plaza, Mulford Village, Clock Tower, Center for Sight and Hearing, Target, Walmart, CherryVale Mall, and Greyhound. This route also provides service to Magic Waters during the summer months. Route 11 is the only RMTD route that connects to the East Side Transfer Center. The challenges associated with this route are the rather large one-way loop and deviation into many parking lots.

### Route 12 – Charles Street

Route 12 is ranked 13th among RMTD’s routes and carries 16.5 passengers per hour on weekdays. It operates on one-hour headways with two extra trips during the morning peak and one extra trip in the afternoon. Route 12 serves several main destinations including the Swedish American Hospital, Lincoln Middle School, Flynn Middle School, East High School, a Logli’s store, Buckbee Apartments, Rosecrance (a drug rehabilitation center) and the Colonial Village Shopping Center which also serves as a transfer point with Route 20 – Alpine Crosstown.

Ridership on this route drops off between East High School and Colonial Village and remains generally low in the one-way loop at the route’s east end. However, more activity occurs at the southern part of the one-way loop near the Buckbee Apartments, McDonald’s, Rosecrance, and the Flynn Middle School.

### Route 13 – Rural Street

Route 13 is ranked tenth among RMTD’s routes and averages 24.3 passengers per hour on weekdays. It does not have high ridership, but only operates six hours per weekday. This is a 40-minute route operating every 90 minutes. This route’s major destinations are the Hilander grocery store, Park Terrace Apartments, the YMCA, and a transfer location with Route 20 – Alpine Crosstown. Boardings are generally evenly spaced along the route with more activity at the major destinations.

### Route 14 – Seventh Street

Route 14 is ranked third among RMTD routes with 46.8 weekday passengers per hour. It operates on 30 minute headways mid-morning and mid-afternoon and on one-hour headways at other times. It is RMTD’s only route that does not have flag stops, which could make it late. It serves the Social Security Office, unemployment office, the Crusader Clinic, K-mart, and Ken-Rock Community Center. The loop on this route’s east side is designed to serve an industrial area and is not as productive as the rest of the route.





### Route 15 – Kishwaukee Street

Route 15 – Kishwaukee Street operates in the area between Route 7 – South Main and Route 14 – Seventh Street. It serves the Research Park industrial area; K-mart; Goodwill; the Health Department; and Brewington Oaks, a Rockford Housing Authority complex. This route is the second highest performing route in the system with 50.2 weekday passengers per revenue hour. It operates on one-hour headways with two additional morning peak hour trips and three additional afternoon trips. This route's lesser productive segments include Sandy Hollow Road and 11th Street.

### Routes 16/17 – City Loop North/South

The City Loop North and the City Loop South have the same routing but operate in different directions. These routes operate on 45-minute headways and connect with all other routes to enable transfers between routes without transferring downtown. These routes are ranked seventh and eighth systemwide for weekday passengers per hour.

Routes 16 and 17 also serve many major destinations such as several middle/high schools; educational facilities (e.g. Rock Valley College and the Roosevelt Adult Education facility); retail and shopping locations (e.g. Logli's, Woodman's Market, North Towne Mall, Mulford Village, and Colonial Village); healthcare facilities (e.g. Crusader Clinic and Rockford Memorial Hospital); and public facilities (e.g. the Montague Public Library and the Booker T. Washington Community Center). This route's ridership may appear more clustered than it actually is, however. When the study team conducted boarding and alighting counts, they recorded boardings at the nearest stop on the stop list. However, this route has many flag stops.

### Route 20 – Alpine Crosstown

Route 20 is the lowest performing route at 3.1 passengers per hour on weekdays. It has a high number of revenue hours coupled with low ridership. Although it has a considerable number of major destinations, many of them can be accessed via other routes. It also does not contain many residential neighborhoods.

### Route 22 – North Second Street

Route 22 serves Loves Park and Machesney Park via the North Second Street Corridor and does not originate at the RMTD Transfer Center. Ridership on the northern half of this route is minimal, except for the area around Target and Home Depot.

## Evening Service

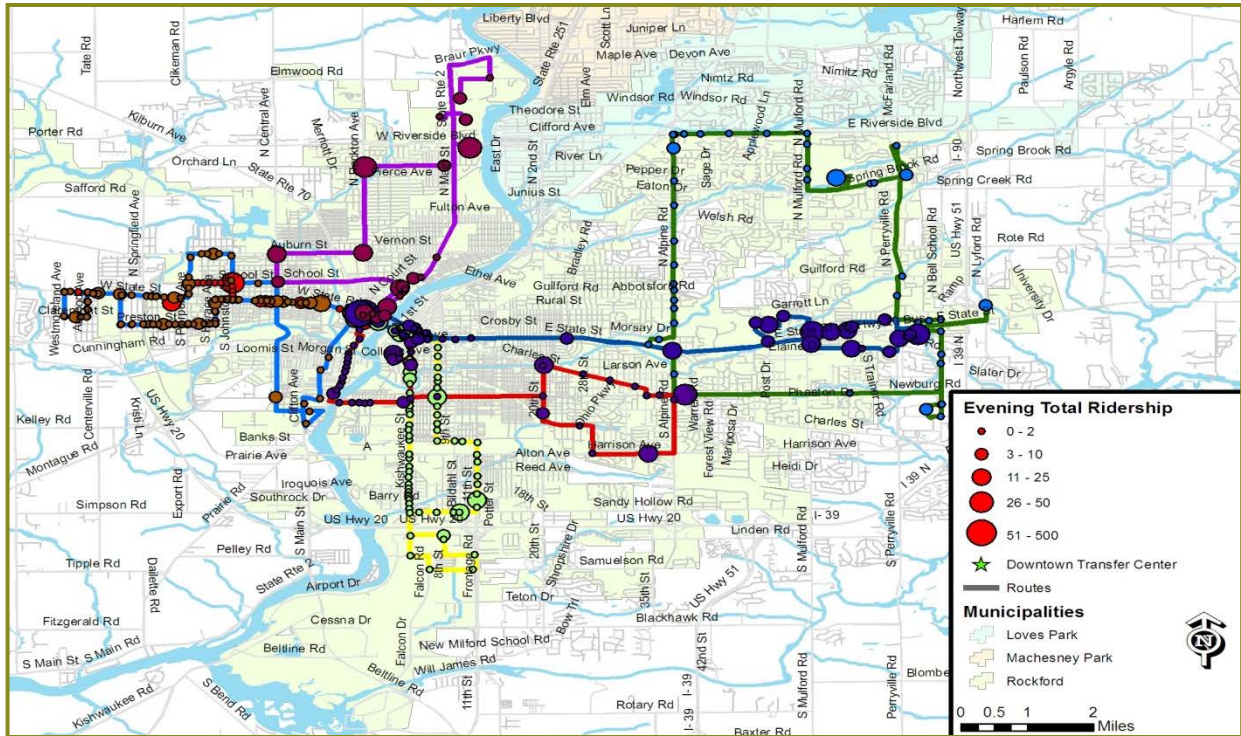
RMTD operates six night routes, which begin at 6:15 PM and end at 10:15 PM. They are designed to provide coverage of RMTD's service area rather than provide coverage and frequency associated with weekday and Saturday service. **Figure 7-3** shows boardings by stop for the evening RMTD routes.







Figure 7-3 – Evening Boardings



[Route 31 – Auburn/Rockford](#)

As shown in Figure 2-3, Route 31’s major boarding locations are its major traffic generators, including Logli’s, North Towne Mall, and Rockford Memorial Hospital.

[Route 32 – East State Street](#)

Route 32’s ridership is predominantly located on its eastern loop, which serves St. Anthony’s Hospital, Walmart, and Forest Plaza. Some riders also boarded at the transfer point on East State and Lynmar.

[Route 33 – West State/Clifton](#)

Route 33 serves the Montague Branch Library, Crusader Clinic, Concord Commons, and Farm and Fleet. This route’s ridership is minimal and widely dispersed with very few riders boarding on its southern loop.

[Route 34 – Harrison/Alpine](#)

Route 34 serves Colonial Village, Buckbee Apartments, Logli’s, Brewington Oaks, and IGA. As with the other evening routes, ridership is low and clustered at some of the major traffic generators such as Brewington Oaks; Buckbee Apartments; and Colonial Village, which functions as a transfer location.

[Route 35 – Kishwaukee/Seventh Street](#)

Route 35 serves the Crusader Clinic, Brewington Oaks, and K-Mart. As with the other evening routes, passenger boardings are light and occur most often at major destinations and transfer points.





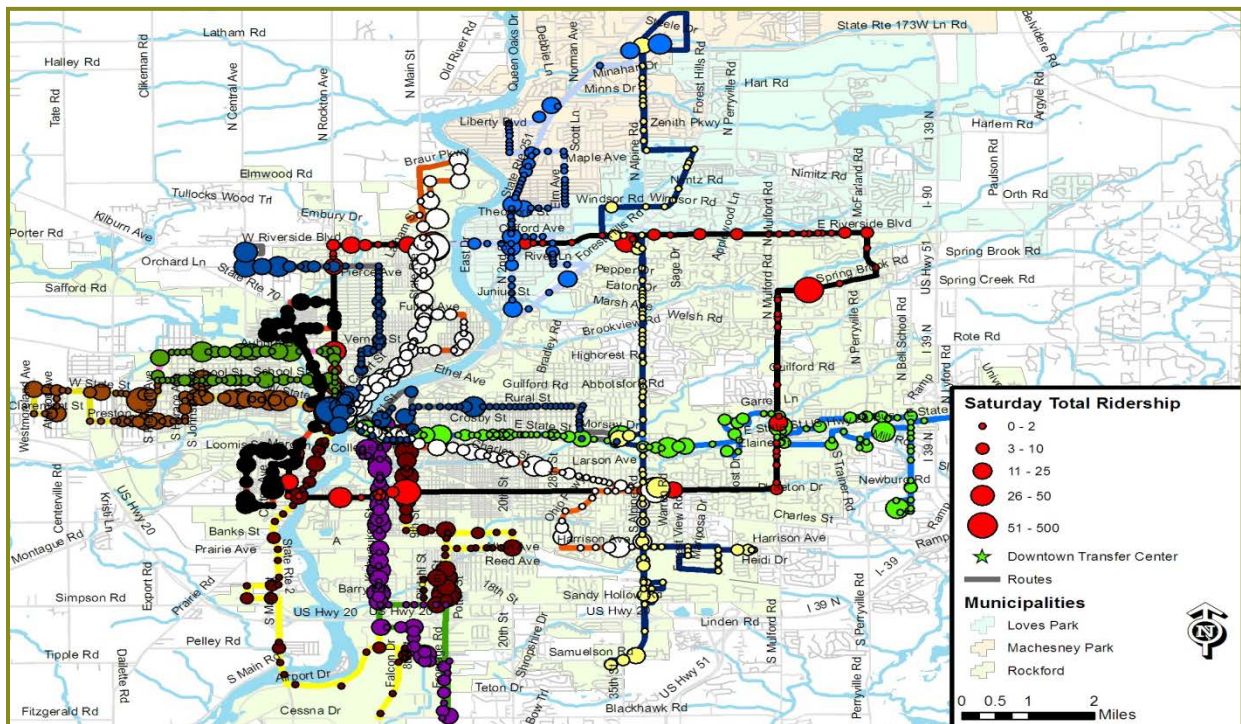
### Route 36 – Perryville/Alpine

Route 36 serves Rockford's east side. Ridership is clustered at the major traffic generators, such as CherryVale Mall, Walmart, Clock Tower, Rock Valley College, and Colonial Village.

### Saturday Service

Saturday routes are the same routes that operate on weekdays. As shown in **Figure 7-4**, boarding patterns for Saturdays are very similar to weekday boardings.

Figure 7-4 – Saturday Boardings



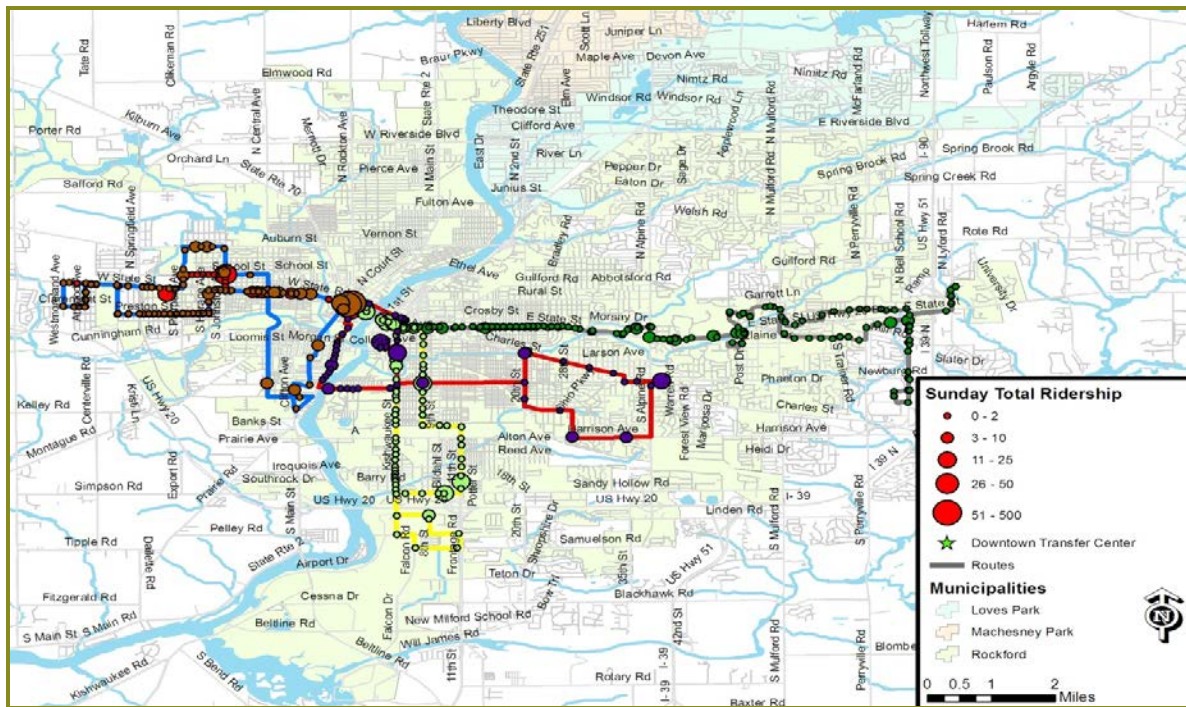
### Sunday Service

As shown in **Figure 7-5**, RMTD operates five routes on Sundays, which are similar to the evening routes except for Route 36 Perryville/Alpine.





Figure 7-5 – Sunday Boardings



[Route 40 – East State Street](#)

Route 40 serves the Swedish American Hospital, Forest Plaza, Strathmoor, Greyhound, Clock Tower, Walmart, CherryVale Mall, and Magic Waters during the summer months. As with Route 32, larger concentrations of boarding activity occur on this route’s eastern loop.

[Route 41 – Auburn/Rockton](#)

Route 41’s boardings occur at major destinations, such as Rockford Memorial Hospital, North Towne Mall, and Logli’s.

[Route 43 – West State/Clifton](#)

Route 43’s boardings are somewhat evenly spaced throughout the route, except for the portion of the route that extends south of State Street on the large loop.

[Route 44 – Harrison/Alpine](#)

Route 44 serves Logli’s, Colonial Village, Brewington Oaks, Buckbee Apartments, and an IGA on South Main Street. Boardings are generally located near these destinations.

[Route 45 – Kiswaukee/Seventh Street \(4th Order\)](#)

Route 45 serves the Crusader Clinic, K-Mart, Anderson Packaging, and Brewington Oaks. This route’s southernmost loop generates very little ridership, except for a few passengers in the area of Anderson Packaging. The remaining boardings are located at or near this route’s other major destinations.





## RMTD Performance Measures

The study team analyzes RMTD's current system performance in this section and recommends target performance measures for RMTD's future improvement.

### Overall System Performance

The study team compared RMTD's current system performance against seven peer agencies to show how it performs against similar agencies and what baseline measures it needs in the future. The peer agencies are located in the industrial Midwest and have similar service area sizes and revenue operating hours. They are the following:

- SARTA in Canton, Ohio;
- The Rapid in Grand Rapids, Michigan;
- CATA in Lansing, Michigan;
- AATA in Ann Arbor, Michigan;
- Citilink in Fort Wayne, Indiana;
- CityLink in Peoria, Illinois; and
- SMTD in Springfield, Illinois.

The data source for this analysis is the National Transit Database. All agencies accepting federal funds must report to the National Transit Database, which enables consistent comparisons with similar data and time periods. The latest data available from the National Transit Database is 2009, which was used for this analysis. **Table 7-2** displays the data used to analyze the aforementioned transit agencies.

The study team used the peer comparison for the following: cost per passenger trip, passenger trips per revenue hour, passenger trips per revenue mile, and farebox recovery. Each of these was used because it indicates how efficiently RMTD deploys transit service in the Rockford region.

### Operating Cost per Passenger Trip

The operating cost per passenger trip reflects how much an agency is spending relative to the riders using the system. RMTD's calculated cost is \$6.27 per passenger trip, which is highest among the eight peer agencies and 7.1% more than the second highest agency, SMTD in Springfield. This means that RMTD is spending more and seeing less ridership than comparable agencies. **Figure 7-6** displays operating cost per passenger trip for the eight agencies and the peer mean.





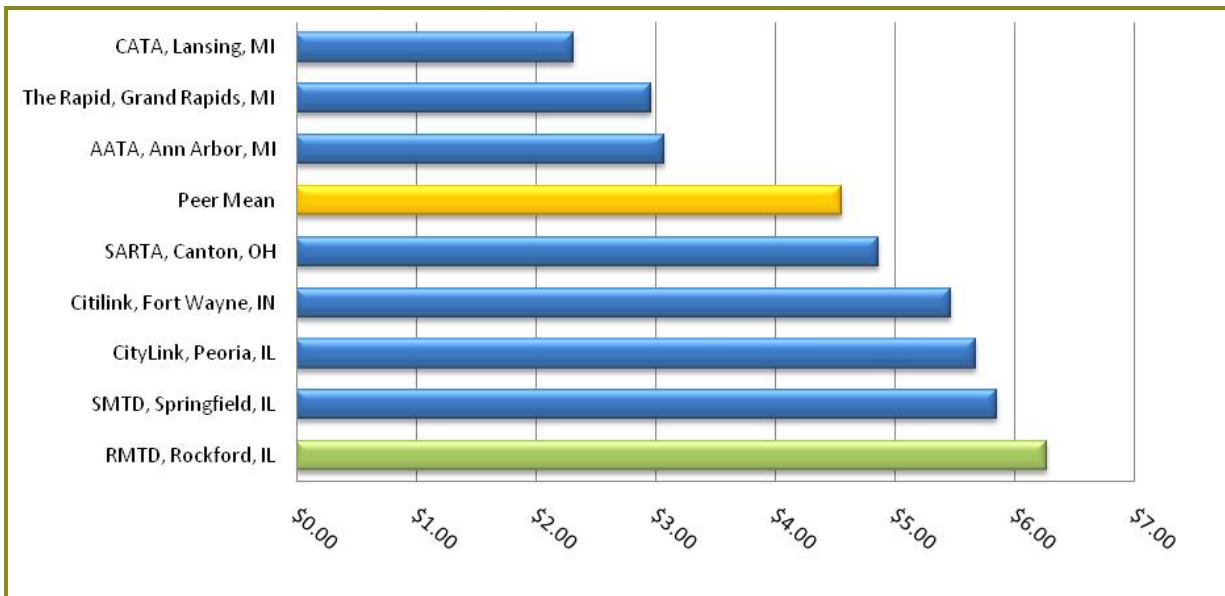
Table 7-2 – 2009 NTD Fixed Route Service Statistics

Agency	SARTA	The Rapid	CATA	AATA	Citilink	CityLink	RMTD	SMTD	
City	Canton, OH	Grand Rapids, MI	Lansing, MI	Ann Arbor, MI	Fort Wayne, IN	Peoria, IL	Rockford, IL	Springfield, IL	Peer Mean
NTD Number	5011	5033	5036	5040	5044	5056	5058	5059	
Service Area Population	378,098	482,740	277,316	283,904	287,759	247,172	270,414	153,516	
Unlinked Passenger Trips	2,025,920	8,865,687	10,884,977	6,029,637	1,791,787	2,673,759	1,748,003	1,644,631	4,458,050
Vehicle Revenue Hours	150,381	366,246	232,912	186,623	100,867	125,432	93,457	101,186	169,638
Vehicle Revenue Miles	2,324,370	4,458,613	3,085,967	2,410,009	1,409,922	1,801,550	1,282,416	1,256,002	2,253,606
Passenger Trips Per Revenue Hour	13.5	24.2	46.7	32.3	17.8	21.3	18.7	16.3	23.8
Passenger Trips Per Revenue Mile	0.9	2.0	3.5	2.5	1.3	1.5	1.4	1.3	1.8
Operating Costs Per Passenger Trip	\$4.86	\$2.97	\$2.31	\$3.07	\$5.47	\$5.67	\$6.27	\$5.85	\$4.56
Operating Expenses	\$9,850,295	\$26,302,105	\$25,179,532	\$18,530,999	\$9,798,273	\$15,165,699	\$10,962,470	\$9,628,136	\$15,677,189
Fare Revenues	\$1,283,417	\$4,283,127	\$6,733,978	\$3,137,393	\$1,138,601	\$2,037,712	\$1,000,265	\$831,862	\$2,555,794
Farebox Recovery	13.0%	16.3%	26.7%	16.9%	11.6%	13.4%	9.1%	8.6%	16.3%





Figure 7-6 – Cost Per Passenger Trip Peer Comparison



Passenger Trips per Revenue Hour

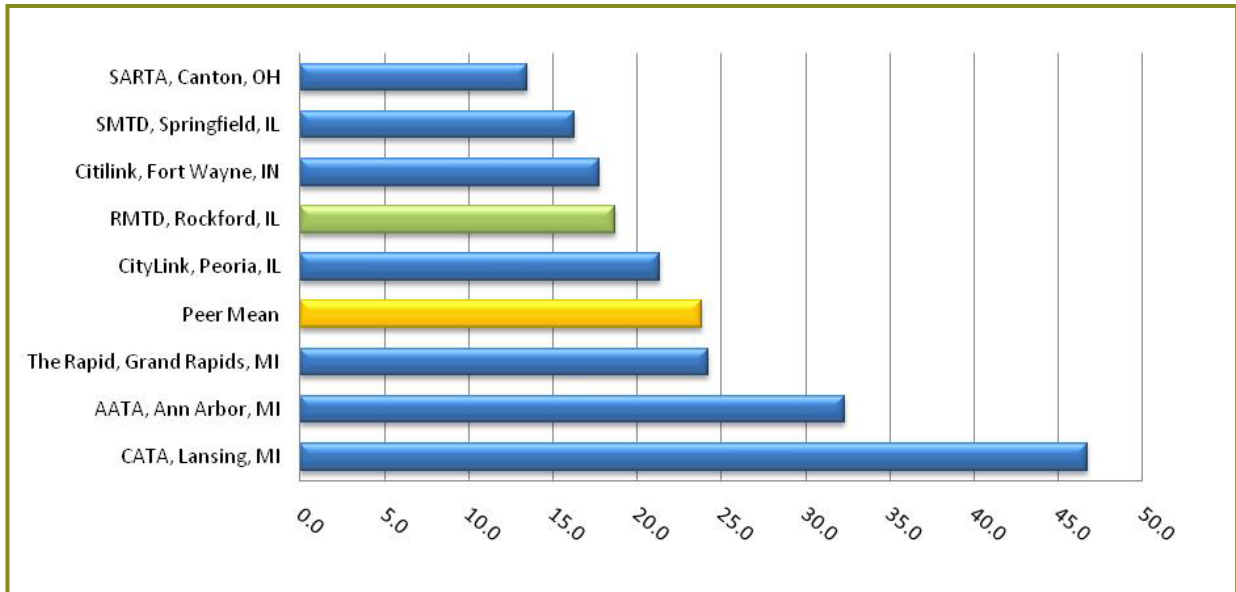
Passenger Trips per Revenue Hour measures service efficiency. It is the number of trips an agency has relative to the hours of service operated. If an agency is operating short routes in a small, dense urban core, its efficiency is going to be high because passenger trips are high relative to the hours it takes to serve that area. Conversely, an agency that operates routes in a suburban or exurban area will have fewer trips while requiring more revenue hours.

RMTD ranks fifth best out of the eight systems, averaging 18.7 passengers per revenue hour. Grand Rapids, Ann Arbor, and Lansing in Michigan all performed better, although these agencies all have large universities adjacent to their downtowns. A large gap also exists between the top two agencies (Ann Arbor and Lansing) and the rest of their peers. Springfield and Peoria perform close to Rockford within Illinois. **Figure 7-7** displays passenger trips per revenue hour for the eight agencies and the peer mean.





Figure 7-7 – Passenger Trips per Revenue Hour Peer Comparison



Passenger Trips per Revenue Mile

Passenger Trips per Revenue Mile is a similar efficiency measure, but considers the number of miles an agency is operating relative to passengers being picked up. It measures the density of an agency’s service area. An agency with a large, spread out service area could have a large number of passenger trips, but would operate many revenue miles to serve those passengers.

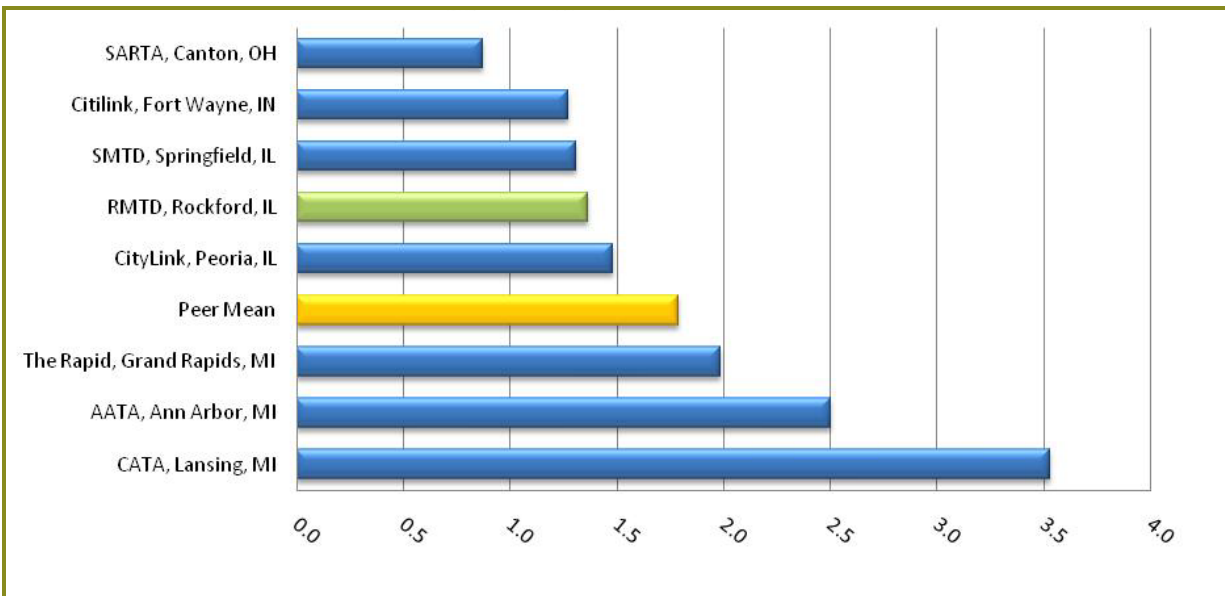
RMTD again places fifth out of the eight systems, with an average of 1.4 passenger trips per revenue mile in 2009. This may be indicative of RMTD routes extending into low density, low productivity suburban areas, which results in a high number of revenue miles but a low number of trips.

Similar to trips per revenue mile, the Springfield and Peoria systems perform close to Rockford while the Ann Arbor and Lansing systems outperform the other six. **Figure 7-8** displays passenger trips per revenue mile for the eight agencies and the peer mean.





Figure 7-8 – Passenger Trips per Revenue Mile Peer Comparison



Farebox Recovery

Farebox Recovery is the percentage of total operating cost covered by fare revenues. It is directly related to the agency’s number of paying passengers and its operating costs. An agency with low operating costs and many paying passengers would thus have a high farebox recovery.

RMTD ranks seventh out of the eight peer agencies, with a calculated farebox recovery ratio of 9.1%. Only SMTD in Springfield has a lower farebox recovery. This result indicates that RMTD’s costs are high compared to the number of passengers that ride the system.

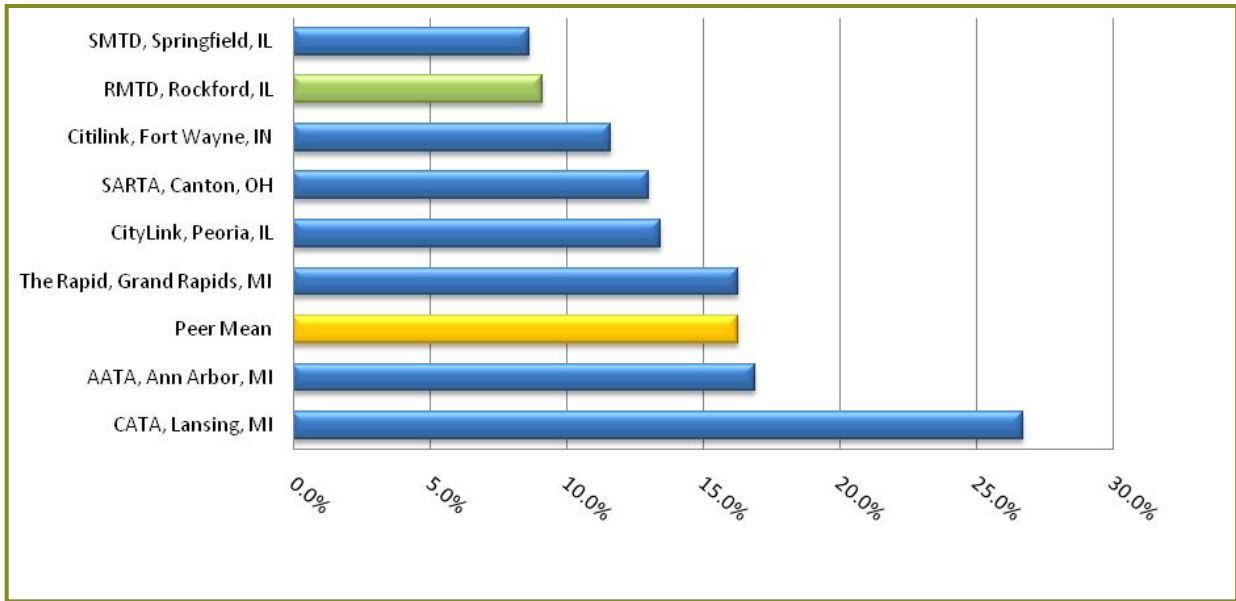
By comparison, the performance of three agencies and the peer mean are above 15 percent. However, CATA in Lansing performs above 25 percent for farebox recovery (no doubt aided by Michigan State students), so it may be considered an outlier. **Figure 7-9** displays farebox recovery for the eight agencies and the peer mean.







Figure 7-9 – Farebox Recovery Peer Comparison



Individual RMTD Route Performance

The study team estimated route performance for individual RMTD routes based on this study’s survey results. Boardings are passenger survey counts at each bus stop for an average weekday and Saturday. The study team estimated revenue hours and miles based on the published timetables for the average weekday and Saturday used in the passenger survey. Finally, the study team based cost on the average weekday and Saturday revenue hours x \$117.30 (RMTD’s reported cost per revenue hour in 2009). The study team only considered RMTD’s weekday routes during this analysis.

**Table 7-3** shows a wide disparity in the three categories. The cost per passenger trip ranges from \$3.03 to \$20.36, with Route 20 appearing to be an outlier at \$140.76 per passenger trip. With RMTD’s system-wide average at \$6.27 per trip, there are nine routes that perform worse than that number on the chart.





Table 7-3 – Individual Route Performance

Route	Cost per passenger trip	Boardings per rev hr	Boardings per rev mi	Rank: Cost per boarding	Rank: Boardings per rev hr	Rank: Boardings per rev mi
1	\$5.91	19.8	3.3	3	3	4
2	\$3.03	38.8	6.2	1	1	1
3/13 Interlined	\$8.27	14.2	2.4	5	5	5
4/12	\$16.84	7.0	1.1	10	10	10
5/6	\$8.74	13.4	2.3	6	6	6
7	\$8.81	13.3	1.4	7	7	7
11	\$12.69	9.2	1.2	9	9	9
14	\$6.01	19.5	3.4	4	4	3
15	\$4.29	27.3	3.4	2	2	2
16	\$11.82	9.9	1.3	8	8	8
17	\$18.05	6.5	0.9	11	11	11
20	\$140.76	0.8	0.1	13	13	13
22	\$20.36	5.8	0.6	12	12	12

Boardings per revenue hour range from 0.8 on Route 20 to 38.8 on Route 2. The system-wide average is 18.7, indicating several productive routes and nine unproductive ones.

Boardings per revenue mile range from 0.1 to 6.2, with a 1.4 average. The rankings shown at the right in **Table 7-3** indicate that, the same routes that perform well (or poorly) in the other categories also perform well (or poorly) for boardings per revenue mile. The following routes have been performing poorly--Routes 4/12, 16/17, 20, and 22.

Recommended service standards and a review policy can be found in **Appendix 3**.





## 8. RMTD FUTURE SERVICE DEMAND

This section analyzes the potential for future service demand in Boone and Winnebago Counties, entailing the combination of multiple sub-tasks related to the Rockford metropolitan area’s census data, population and employment growth, demographic trends, and ridership profiles and attitudes. Potential demand is a combination of three factors:

- Where will people originate? (i.e., Where is the population growing?);
- Where will people go? (i.e., Where is employment growing?); and,
- Who will take public transit? (i.e. What types of people take public transit and where are their numbers growing?)

The study team explores the potential growth of these three areas in this section, along with an assessment of how this potential can benefit RMTD’s potential ridership.

### New Origin Locations

Since most trips begin from home, the study team used population data as a proxy for estimating trip origins. RMAP provided dwelling unit data for the Years 2000 and 2040 (**Figure 8-1**). The Year 2000 data came from the U.S. Census. The study team projected dwelling units based on expected growth rates within Boone and Winnebago Counties and multiplied it by each county’s average occupancy rate (2.71 in Winnebago County, 2.43 in Boone County) to calculate the Year 2040 population.

Figure 8-1 – 2040 Population Density

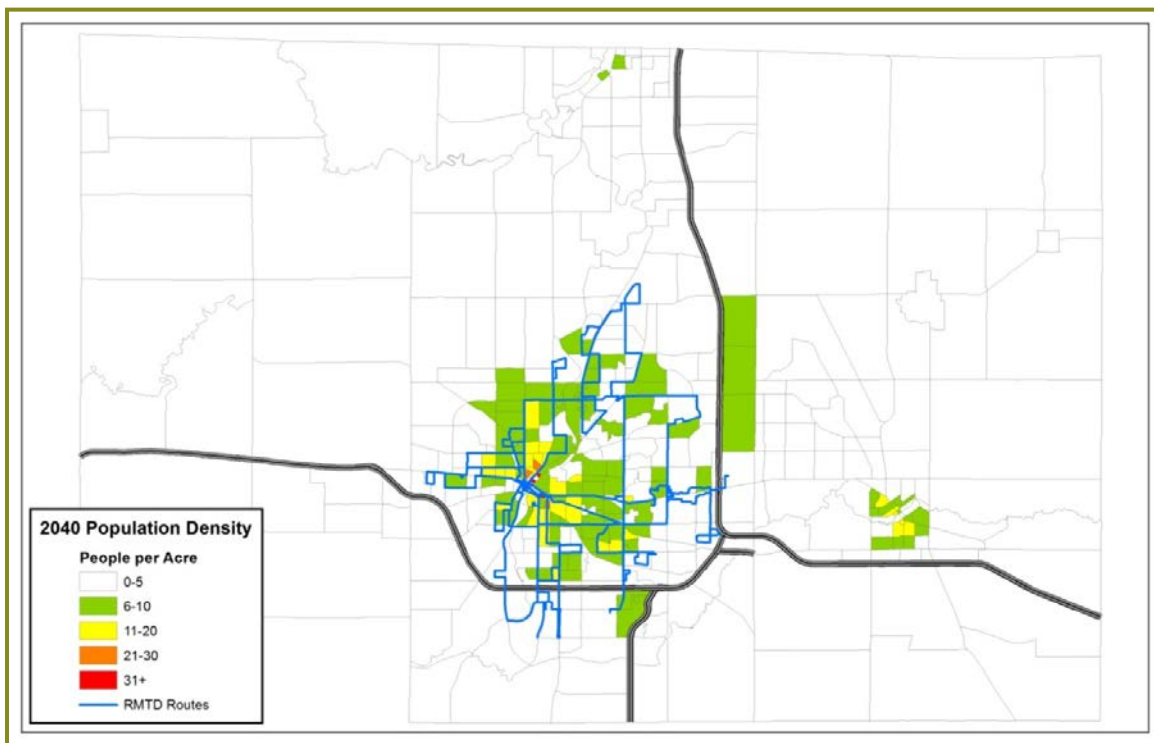
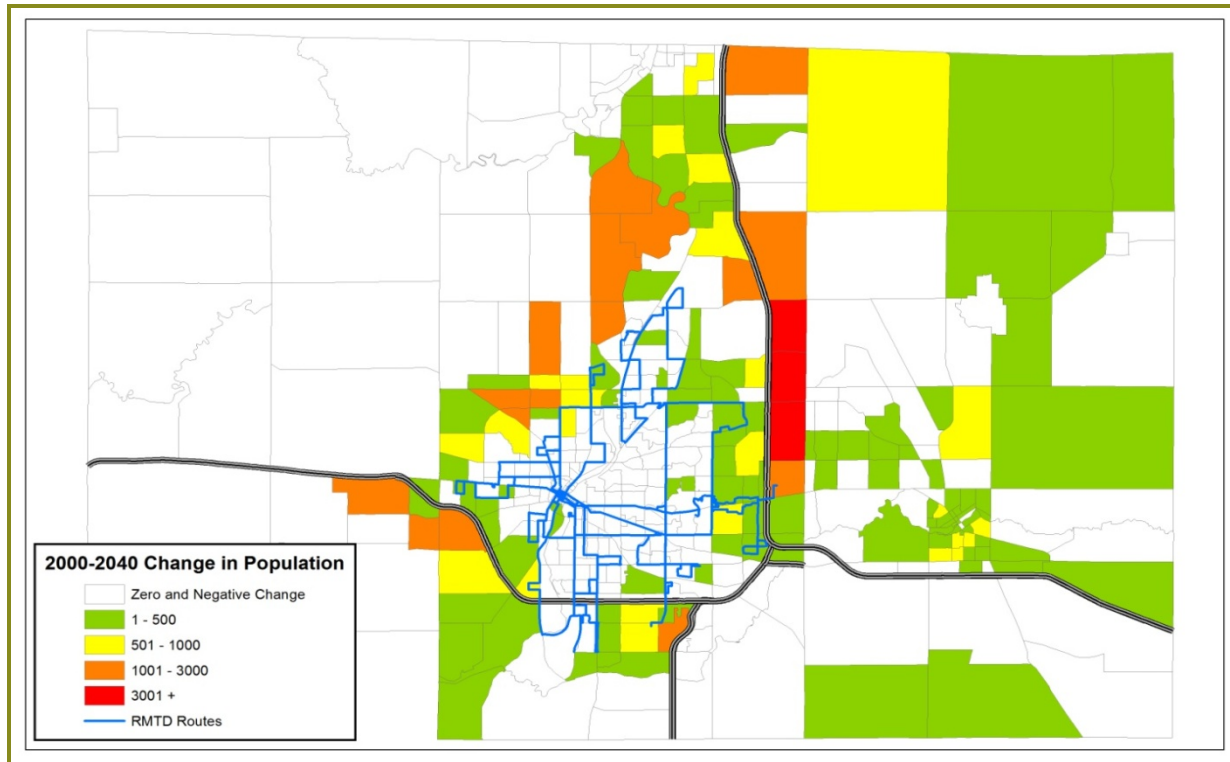




Figure 8-2 shows the projected change in population from 2000 to 2040. Most of this change will likely occur in the metropolitan area’s outer edges, with the highest expected population growth occurring in far northeastern Rockford, adjacent to the Illinois Tollway. Other areas with expected growth are along the North Main Corridor; west of the Village of Roscoe; northwest of Riverside Drive; and west along Cunningham Road towards the Village of Winnebago.

Figure 8-2 – 2000-2040 Change in Population



Notably, none of these high growth areas are within RMTD’s current service area. To serve these areas, RMTD could extend its local routes to these areas. This is somewhat risky because new population growth typically occurs in suburban subdivisions with less street connectivity and large setbacks. RMTD could also provide express park-and-ride service from these high growth areas into Rockford’s job centers. This option may make more sense if job centers are concentrated enough to make park-and-ride viable for commuters. These services are typically viable when employment centers have more than 20 jobs per acre; when trip length is more than 15 miles; and/or when parking in the employment center is not free.

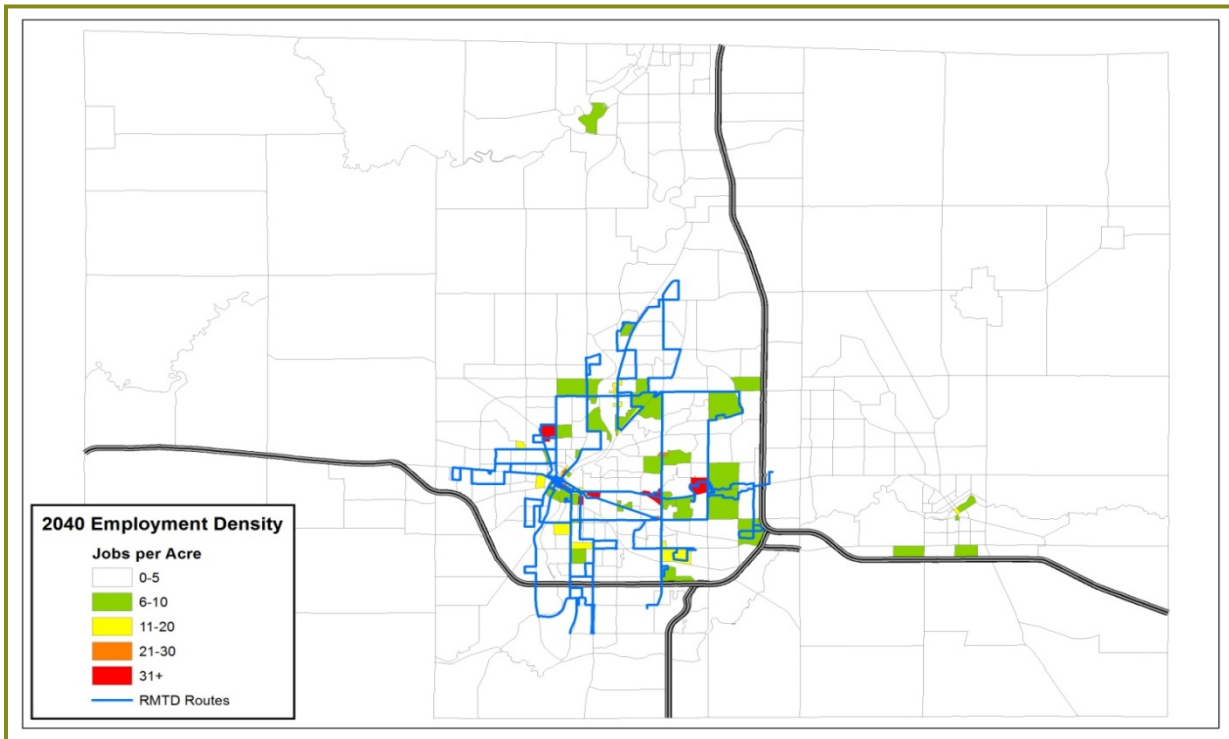




## New Destination Locations

Most transit trips are work trips and are more heavily biased towards work because of concentrated employment centers downtown. The study team therefore used employment growth to estimate trip destinations. RMAP provided employment data for the years 1999 and 2040. The 1999 data was from the U.S. Census while the 2040 data was a RMAP projection (**Figure 8-3**).

Figure 8-3 – 2040 Employment Density

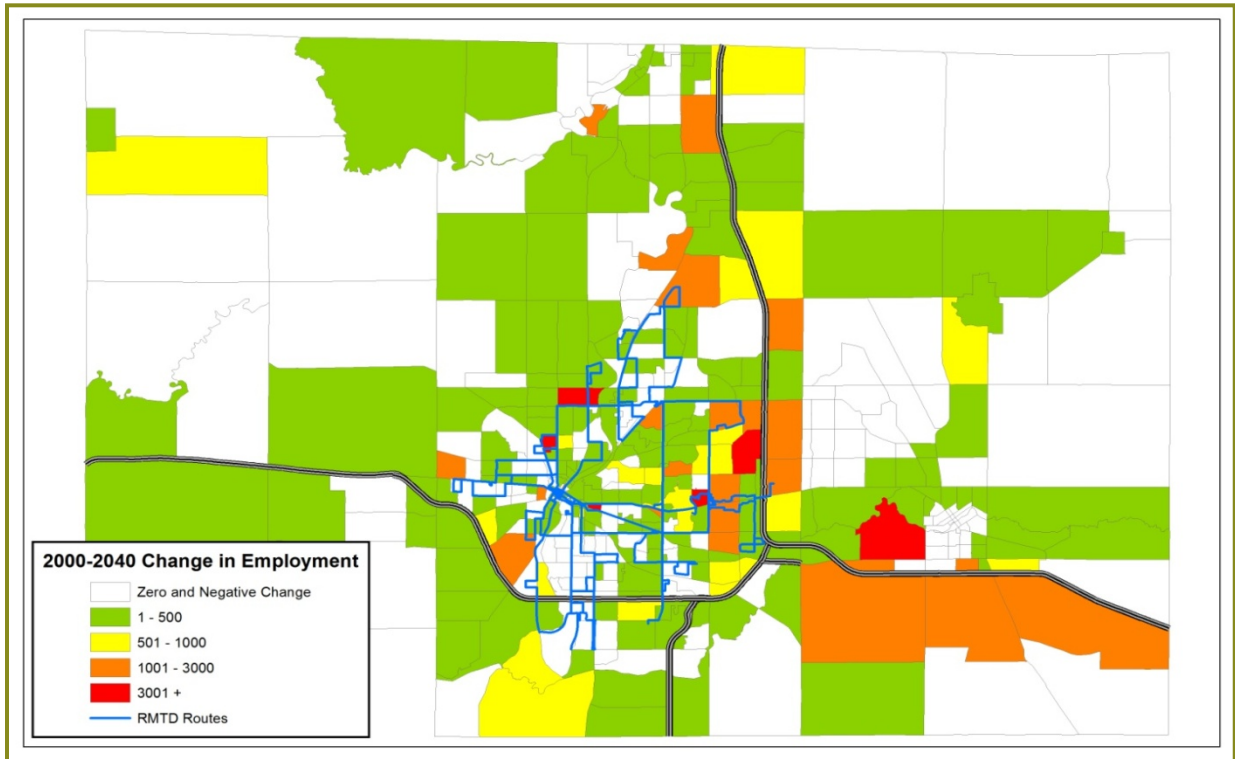


**Figure 8-4** shows the projected change in employment from 2000 to 2040, including significant growth in the following areas: the area around Rockford Memorial Hospital on the city’s northwest side; Mulford Village; the area around Swedish-American Hospital; the area centered on Riverside and North Main; the northeast corner of Rockford bordered by Spring Creek, Riverside, Mulford, and the Illinois Tollway; and the area centered on IL 173 and North 2nd Street in Machesney Park. Most of these areas are within RMTD’s existing service area, except for the last two mentioned. RMTD may want to increase peak-period service where it already operates and extend service to those areas where it currently does not.





Figure 8-4 – 2000-2040 Change in Employment



## Future Markets

RMTD has traditionally focused on urban riders, most of whom generally have low incomes and few transportation choices. They use RMTD for their non-walking trips, including work, shopping, and recreation. Given their limited choices, they are unlikely to change their travel habits in the future.

However, RMTD has three other markets expected to grow in the future, including choice riders from suburban neighborhoods, the elderly, and college students. Each one is detailed here.

### Choice Riders from Rockford’s Outer Fringes and the Suburbs

Forecasted population growth in Rockford’s outer fringes and suburbs and the city’s retention of concentrated employment centers may grow this ridership market. These riders may especially use RMTD, if gas prices remain high, traffic congestion continues to increase, and/or parking is scarce in job centers. In the future, RMTD may want to introduce express bus services to concentrated employment centers to give choice riders a one-seat ride to their jobs.

### Elderly

The elderly potentially form a second major ridership market. Many of them will reduce their driving as they age and take RMTD to maintain their independence. The elderly population will dramatically increase over the next 10 to 15 years as members of the baby boomer generation reach age 65. They





are also interested in “aging in place,” that is, remaining in their current location instead of moving out-of-state or into retirement communities.

RMTD can thus expect ridership increases in the elderly transit market. Most of these people will want transit service during off-peak hours on both weekdays and weekends. RMTD should design this service to provide access to retail and other services, like grocery stores, department stores, and the post office. RMTD may not have to provide long operating hours for these services, since many elderly people may be able to adjust their schedules to meet transit operating times.

### College Students

College students form a third expected growth market for transit ridership. Demographically speaking, an “echo boom” exists, comprised of a large number of baby boomers’ children who are reaching college age. Student enrollment, especially at two-year colleges like Rock Valley College, has dramatically increased. Younger people generally, but particularly the college educated, have recently shown a growing interest in public transportation as part of a vibrant, urban lifestyle; as a way to save money (in many cases, avoiding car ownership altogether); and as an expression of environmental concerns. Increased interest in transit among younger people is expected to result in higher transit propensity among future populations.

### Expected Riders

The study team calculated these expected ridership increases using a very basic methodology of mode share and density. The denser the area, the greater likelihood of a higher transit mode share. They completed this analysis for population growth (to determine growth in trip origins) and employment growth (to determine growth in trip destinations). **Table 8-1** shows the mode share assumptions used to calculate the expected number of riders.

**Table 8-1 – Mode Share Assumptions for Expected Rider Calculation**

Population Density	Population Mode Share	Employment Density	Employment Mode Share
< 10 people per acre	0.5 %	< 10 jobs per acre	0.5 %
10.1 – 20 people per acre	1.0 %	10.1 – 20 jobs per acre	1.0 %
20.1 – 30 people per acre	2.0 %	20.1 – 30 jobs per acre	2.0 %
30.1+ people per acre	3.0 %	30.1+ jobs per acre	3.0 %

The study team calculated 2040 population and employment density TAZ using projections RMAP provided. They multiplied the assumed mode share by the projected net gain (or loss) of people to determine the net gain or loss of transit riders within each zone. The results, shown in **Table 8-2**, indicate an expected 342 additional riders originating from TAZs in Boone and Winnebago Counties.

The study team also expects 1,872 more RMTD riders going to the Rockford metropolitan area’s employment centers, given its projected 120,000 new jobs and 63,000 new residents by 2040. This area can thus expect more people commuting in from other counties for work.





Table 8-2 – Expected Additional 2040 Origin and Destination Trips

2040 Projection	
Origin Trips	342 riders
Destination Trips	1,872 riders

RMTD will need to provide more service to accommodate the forecasted 342 additional origin trips shown in **Figure 8-5**, particularly in northeastern Rockford, near the Illinois Tollway. The 1,872 destination trips (**Figure 8-6**) indicate RMTD may see an increased demand for park-and-ride and express services to serve people living in outer counties who will commute into the Rockford metropolitan area for work, particularly in the areas around State and Mulford, State and Alpine, and the Swedish-American and Rockford Memorial Hospitals.

Figure 8-5 – Projected 2040 Origin Trips

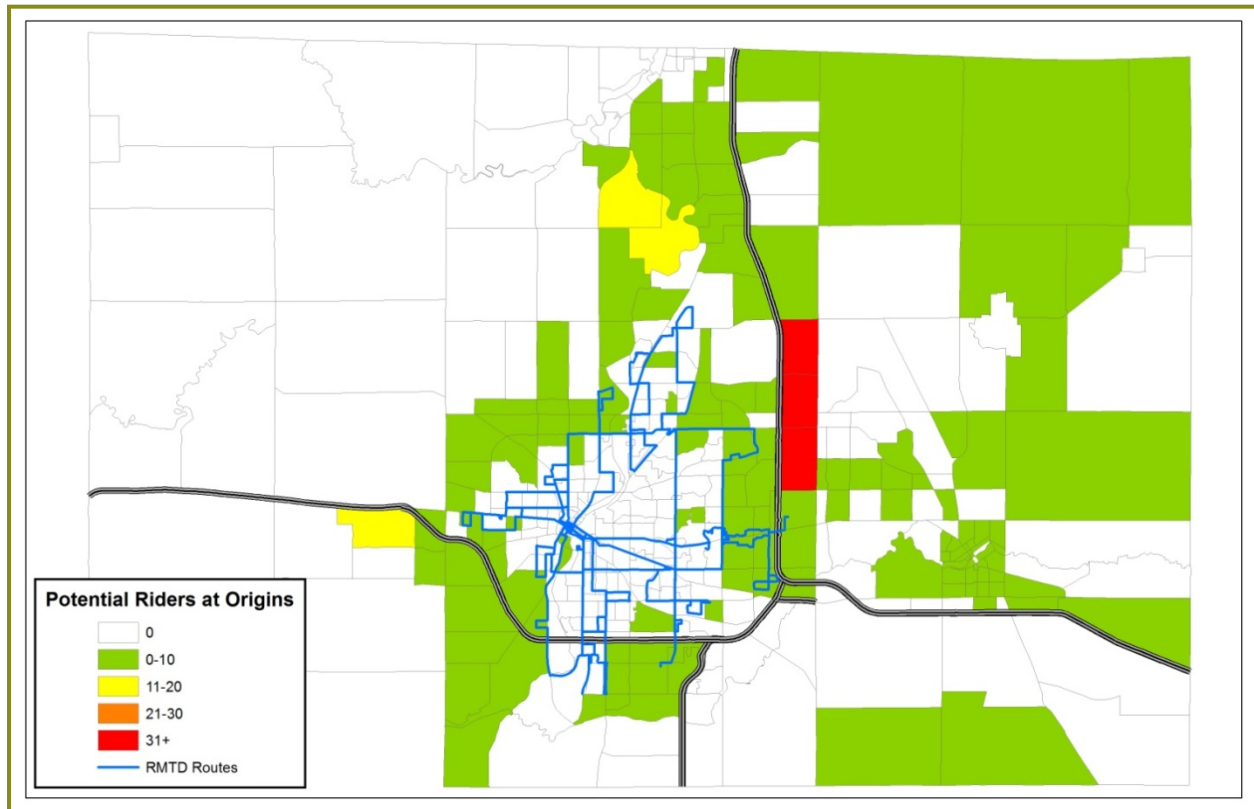
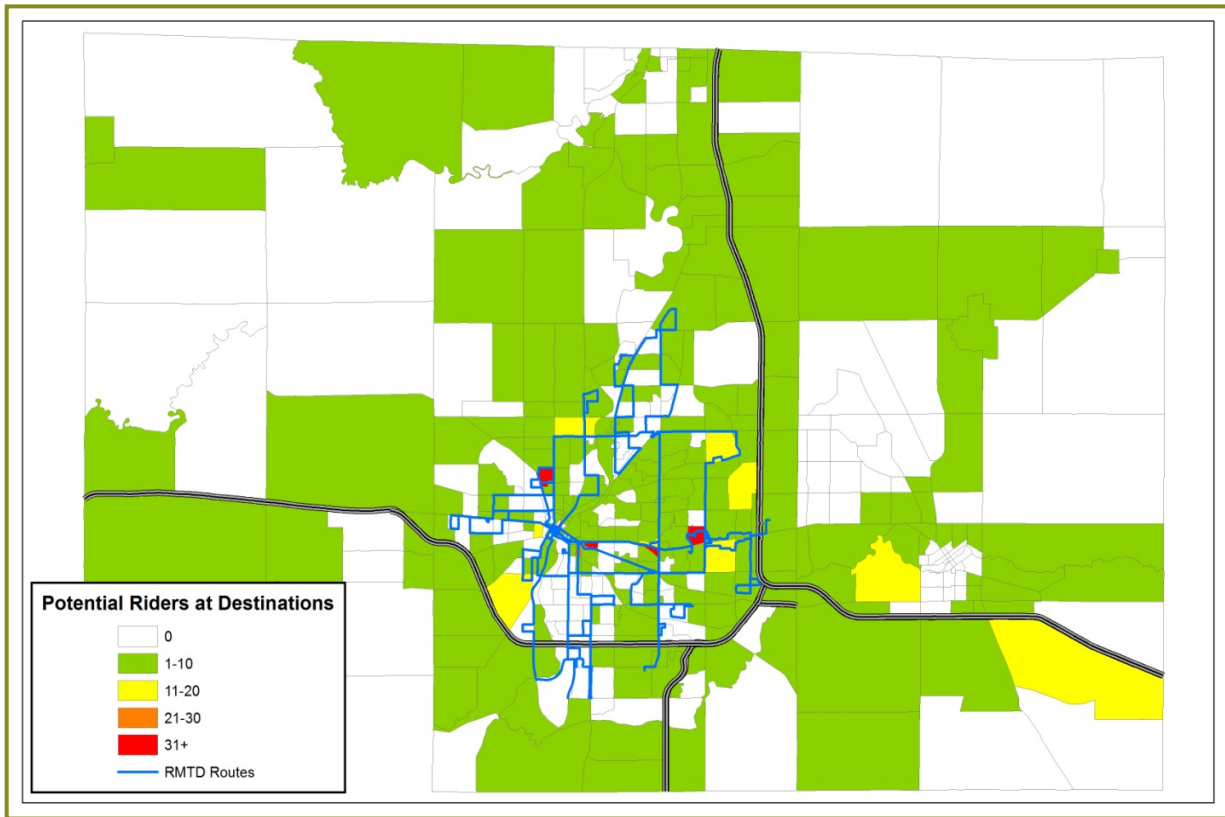






Figure 8-6 – Projected 2040 Destination Trips



## Comparison to Other Modes

The following is a brief discussion of alternatives to RMTD services.

### Automobile

The predominant travel mode in the U.S. is driving alone, especially for the journey to work, as reflected in the Bureau of Transportation Statistics' national data (**Table 8-3**). Nationally, carpooling comprises 10 percent of work trips, transit five percent, and walking approximately three percent. What stands out for transit is its dependability.

Carpooling most commonly consists of family members who commute together and/or take children to day care or school on the way to work. Other carpools serving work destinations are relatively structured ways to share costs. Most carpools depend upon workers sharing the same start and stop times and location, within a narrow time window, most days of the week. Some large employers have instituted backup systems (e.g. taxis) to accommodate working late and to maintain their carpool programs at a high level. These same employers may offer other inducements such as preferred parking. But, the overwhelming reason for ridesharing is sharing costs. Carpools are high maintenance and can break up for a variety of reasons. Transit, however, runs regardless of who boards on any given day. Transit riders are not dependent on other riders.





Table 8-3 – Principal Means of Transportation to Work (Thousands)

2009		
	Numbers	Percents
All workers	138,592	100.0
Automobile, total	119,393	86.1
Drives self	105,476	76.1
Carpool, total	13,917	10.0
2-person	10,813	7.8
3-person	1,822	1.3
4+ person <sup>a</sup>	1,282	0.9
Public transportation <sup>b</sup>	6,922	5.0
Taxicab	157	0.1
Bicycle or motorcycle	1,060	0.8
Walks only	3,966	2.9
Other means	1,176	0.8
Works at home	5,918	4.3

<sup>a</sup> For 2005 only, the *Carpool* categories are 2-person and 3+ person; 4+ person is not available as in other years.

<sup>b</sup> *Public transportation* refers to bus, streetcar, subway, railroad, and elevated trains.

#### SOURCES

1989-2005: U.S. Department of Housing and Urban Development, *American Housing Survey for the United States: 2005* (Washington, DC: 2006), table 2-24 and similar tables in earlier editions, available at <http://www.census.gov/hhes/www/ahs.html> as of Oct. 12, 2006.

2006-09: U.S. Department of Commerce, U.S. Census Bureau, *American Community Survey*, available at <http://factfinder.census.gov/> as of Oct. 22, 2010.

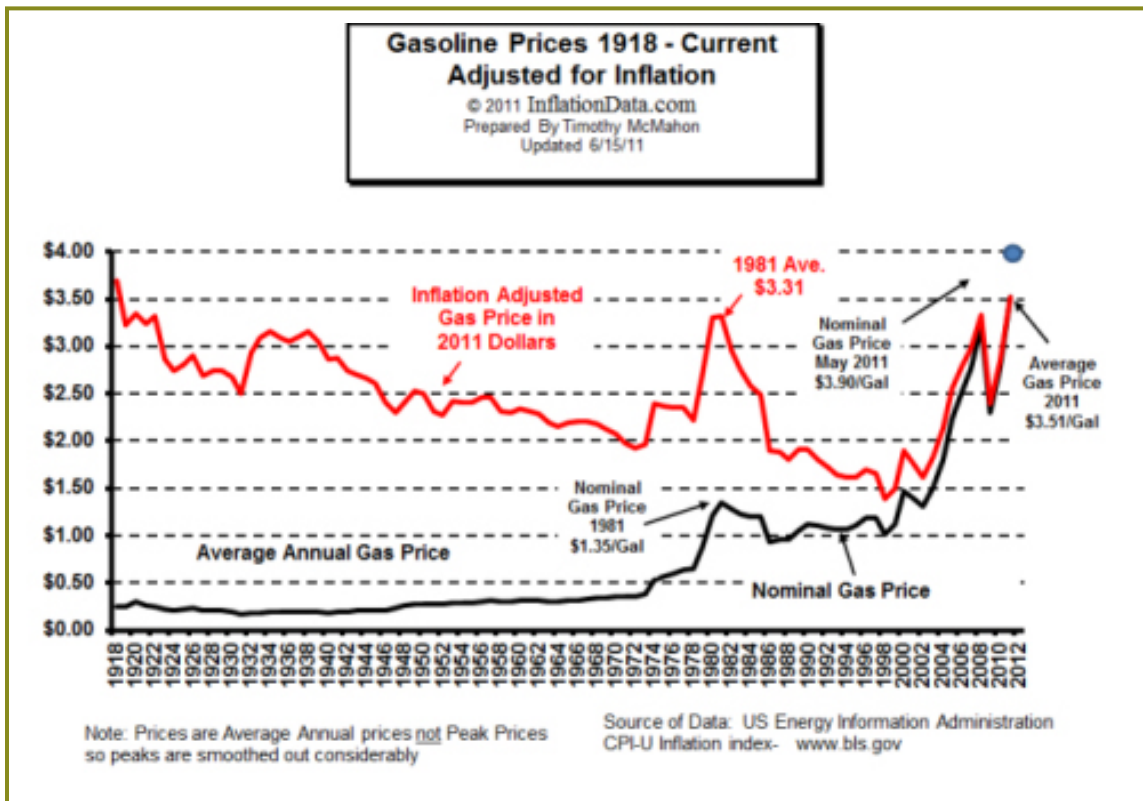
Carpooling and transit use over recent years has correlated to fuel cost and availability. Oil embargos spiked gas prices in 1973 and 1979 and dramatically pushed up carpool and transit during these periods (**Figure 8-7**). More recently gas prices have outpaced inflation as China, India, and others have increased the worldwide demand for fuel. Analysts disagree how well increasing demand will be met with increased production and increased fuel economy. Gasoline use in the U.S. has reached its peak in the belief of many, as efficiency outpaces increased demand.

It appears likely that transportation costs for autos will surpass general inflation given international demand. However, these same cost increases apply to transit diesel vehicles, so there are no clear answers on how these costs will influence future mode choices.





Figure 8-7 – Gasoline Prices 1918 to Current



The study team can compare national costs of transit versus auto use since the American Automobile Association annually prepares auto use cost data (**Table 8-4**). The top part of the table shows costs inclusive of all fixed costs, such as the purchase of the vehicle, taxes, depreciation, finance charges, registration, insurance, and license fees. For this report, the study team will use a cost of \$0.50/mile, which is consistent with recent federal reimbursements for using one’s car for government business. Of this total, some \$0.17-0.18 is the operating cost (as shown in the bottom portion of the table).

If a RMTD rider were making a six mile trip at the standard fare, the cost would be  $\$1.50/6 = \$0.25$  per mile. This is more than the operating cost of an auto trip on a per mile basis, but much less than the full cost, including all fixed costs. The transit trip would have to be almost nine miles to be competitive to the auto trip’s operating costs. But, this kind of formulation does not account for parking costs, the benefits of reducing congestion, and many other considerations that come into play in many urban situations. As shown here, trip-making behavior consists of many individual choices.





Table 8-4 – National Average Costs per Mile

National Average Total Ownership and Operating Costs per Mile:			
Miles per Year			
	10,000	15,000	20,000
Small sedan	56.4¢	43.3¢	36.6¢
Medium sedan	72.9¢	56.2¢	47.6¢
Large sedan	92.6¢	70.2¢	58.6¢
Composite National Average	73.9¢	56.6¢	47.6¢
Average Operating Costs Only per Mile:			
Vehicle Type			
	Small sedan	Medium sedan	Large sedan
Gas and Oil	9.24¢	11.97¢	12.88¢
Maintenance	4.21¢	4.42¢	5.0¢
Tires	0.65¢	0.91¢	0.94¢
Cost per Mile	14.1¢	17.3¢	18.8¢

### Walking and Bicycling

Walking has a distance limitation of approximately one mile and is somewhat weather dependent. Some people will drive instead if the weather is inclement and if a car is available. Transit ridership forecasts are typically more conservative using ¼ mile as the maximum walk distance to a transit stop.

Various sources indicate the maximum commute distance for bicycle trips is about five miles. One obstacle to this mode is proper facilities. Bicyclists often prefer the same commuting routes as vehicles, leading to conflicts, but the Bureau of Transportation Statistics' data show that fatalities over the last 20 years have been relatively flat and injuries have declined.

Increased walking and bicycling appear to be trends governments have reinforced through improved community livability initiatives and infill growth into older communities. Nevertheless, large percentage shifts in the base have little effect on the overall predominance of auto use. The important point moving forward is to create livable communities where the opportunities for walking and bicycling are provided.

Given rising obesity rates, governments have undertaken programs to increase walking and bike riding. An example is the U.S. Department of Transportation's (USDOT's) Safe Routes to Schools program, along with many other efforts at the state and local levels, such as the City of Rockford's effort to develop bike routes. USDOT enhancement grants are often made for bicycle and pedestrian facilities. And, most new roadway projects include non-motorized facilities. Transit systems have added bike racks to bus, extending the "walk" distance to bus routes. RMTD has recognized the value of this addition and now has bike racks on buses.





## 9. FARES AND FAREBOXES

This section includes a fare analysis and an evaluation of the current RMTD farebox hardware.

### Fare Analysis

**Table 9-1** shows RMTD’s current fare structure, which was instituted on May 1, 2009. The standard, adult cash fare for people 12 years old and older is \$1.50. Children under 5 accompanied by an adult ride free. Children between 5 and 11 and students 20 years old and younger with a valid school or RMTD photo ID ride for \$0.75. Senior citizens age 65 and over ride free with a valid RMTD photo ID. People with disabilities pay \$0.75 with a valid RMTD photo ID, unless they are enrolled in the Illinois Circuit Breaker program. If so, they ride for free.

RMTD has several multi-ride pass options, including an adult ten-ride ticket and a corresponding student/disabled/senior ten-ride ticket at \$15 and \$7.50 respectively. These tickets do not provide a volume discount but offer the convenience of purchasing ten trips in one transaction. RMTD also offers unlimited 7-day and 30-day ride passes. Transfers are free and valid for one hour from the time issued. In addition a \$.25 zone fare applies to boardings and alightings in the Cherry Valley Zone.

**Table 9-1 – RMTD Fares**

Fare Category	Fare
<b>Cash Fares</b>	
Adults (12 years & older)	\$1.50
Children (under 5 must be accompanied by an adult)	Free
Children (age 5 thru 11)	\$0.75
Students age 20 years and younger* *To qualify for the student fare, a student must be able to show a valid school ID or valid RMTD photo ID	\$0.75
Disabled Citizens (with valid RMTD photo ID)	\$0.75
Disabled Citizens enrolled in Illinois Circuit Breaker program (with valid RMTD photo ID)	Free
Senior Citizens (age 65 and over with valid RMTD photo ID)	Free
<b>Multi-ride Tickets</b>	
Adult Ten-Ride Ticket	\$15.00
Student, or Disabled/Senior Citizen Ten-Ride Ticket	\$7.50
7 Day Unlimited Ride Saver Pass	\$16.00
30 Day Unlimited Ride Saver Pass	\$55.00
(Not transferable. Unlimited Ride passes may only be used by the purchaser. Valid only on RMTD)	
<b>Transfers</b>	
Transfers are good for one hour and should be used on the first bus passing the transfer point.	Free
Transfers are issued anywhere two RMTD bus routes meet or cross over.	
<b>Zone Fares</b>	
Any passenger boarding or alighting in the designated Cherry Valley Zone will be asked to pay the additional Zone Fare. Bus passes not accepted in the Zone Fare.	\$0.25





RMTD's fares generally are at or above its peer transit agencies. RMTD's regular adult fare is \$0.50 higher than the five other Illinois systems and \$0.25 higher than Ft. Wayne, Indiana, and Cedar Rapids, Iowa. The fares for people who are elderly or disabled are half the regular fare, in line with Federal Transit Administration (FTA) guidance. Similarly, the cost for a paratransit trip is double the regular fare – equal to the maximum fare under FTA guidance.

Like other systems in Illinois, RMTD is part of the Illinois Circuit Breaker Program, which is designed to reduce costs for eligible elderly and disabled persons. The Illinois Council on Aging states that, "If you have a qualifying disability and meet the income eligibility requirements of the Circuit Breaker Program, you may be eligible for free rides on all fixed-route regularly scheduled buses, trains, and public transit systems."

The study team does not recommend a fare increase at this time, but is recommending RMTD consider a single-day unlimited pass to benefit those who are financially unable to buy an unlimited weekly or monthly pass and those who are visiting for a day or two.

With the addition of the East Side Transfer Center and routes serving only one transfer center, RMTD should consider making two transfers free with a fare purchase rather than the existing policy of one free transfer. Without a second free transfer, passengers transferring downtown or via Routes 16 or 17 will be required to pay two fares to access locations served by new routes originating at the East Side Transfer Center. For example, a passenger originating along Route 1 West State Street, transferring either downtown to Route 11 East State Street or to Route 16/17 and then going to the East Side Transfer Center to get on the CherryVale Express to the mall. This passenger would be required to pay a second fare to get on the CherryVale Express, not just the zone fare.

**Appendix 4** has the complete fare analysis.

## Farebox Hardware Evaluation

RMTD has recently replaced all but eight of its GFI CENTSaBILL fareboxes with GFI Odyssey fareboxes. GFI developed the CENTSaBILL farebox in 1980 and continues to manufacture and sell it today. It is a registering farebox. Passengers deposit their fare, the farebox registers the fare amount, and the driver validates it using the farebox's buttons to indicate a fare category.

The Odyssey has been billed as a state of the art bus fare collection system since GFI introduced it in 2000. It automatically validates and processes coins, bills, magnetic farecards, and smart cards. It accepts 12 different coin or token types, \$5, \$10, and \$20 bills, and a variety of fare media including magnetic fare cards and smart cards. It can also accept proximity smart cards with an optional smart card reader and accepts and issues electronic transfers.

Currently, either type of farebox can report data for the day based on fares paid and fares by category. However, the Odyssey fareboxes can read fare media without the driver's help, record real time data and time stamp each transaction, and tell passengers to take their change or alert them when their pass





or transfer is not valid. The Odyssey fareboxes thus enable bus drivers to concentrate on their driving more and lessen opportunities for confrontation between them and their passengers.

RMTD will use its Odyssey fareboxes to issue and accept electronic transfers to help eliminate fraudulent transfer use and allow RMTD to track its transfers. RMTD can use this transfer data to determine which routes it may interline or link together. RMTD will also use its Odyssey fareboxes to publish ridership reports not currently available using its CENTSaBILL fareboxes. It makes it easier to do quick totals and more narrowly query the data.









## 10. OPERATING SCENARIOS

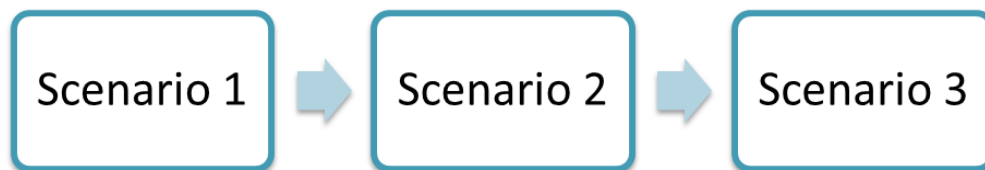
The study team investigated three funding scenarios as potential alternatives. Scenario 1 assumes RMTD has approximately \$700,000 less in its FY 2012 budget than currently budgeted. It assumes RMTD would face an approximately \$700,000 decrease in operating funds, given local funding decreases over two consecutive years. To maintain service levels and coverage, many of the service modifications proposed in Scenario 1 would be made to improve efficiency.

Scenario 2 assumes RMTD has the same operating budget for FY 2012 as currently budgeted. It assumes the operating budget will remain the same as budgeted for FY 2012. Since operating costs will continue to increase even if operations remain the same, the efficiency improvements made under Scenario 1 would still be required under Scenario 2.

Scenario 3 assumes RMTD will have more funding than is presently available. It assumes RMTD has more funding than is currently available and, as such, includes recommendations for additional services that would benefit the system and its riders.

Because many of the changes are recommended regardless of funding, these scenarios can be thought of as building off of one another. Scenario 1 is the base scenario of changes. Scenarios 2 and 3 then add additional services (both additional hours and additional routes) to the system. **Figure 10-1** illustrates the relationship. **Figures 10-2** and **10-3** show the proposed alignment gains and losses, for both weekday and night-weekend service, that are recommended regardless of funding.

Figure 10-1 – Service Scenario Hierarchy



**Table 10-1** shows the revenue hours calculated by time period for existing conditions and Scenarios 1 through 3. The study team took the total number of estimated revenue hours and multiplied them by the RMTD FY 2012 cost of \$126.36 per revenue hour cost for each scenario. They calculated the difference from the existing cost to determine how much above (or below) the existing baseline each scenario cost. Please note that the Loves Park/Machesney Park contribution to the system is capped at the FY 2011 contribution of \$343,000 in all scenarios. Detailed calculations of miles, hours, and operating cost are located in **Appendix 6**.





Figure 10-2 – Proposed Segment Gain/Loss (All Scenarios)

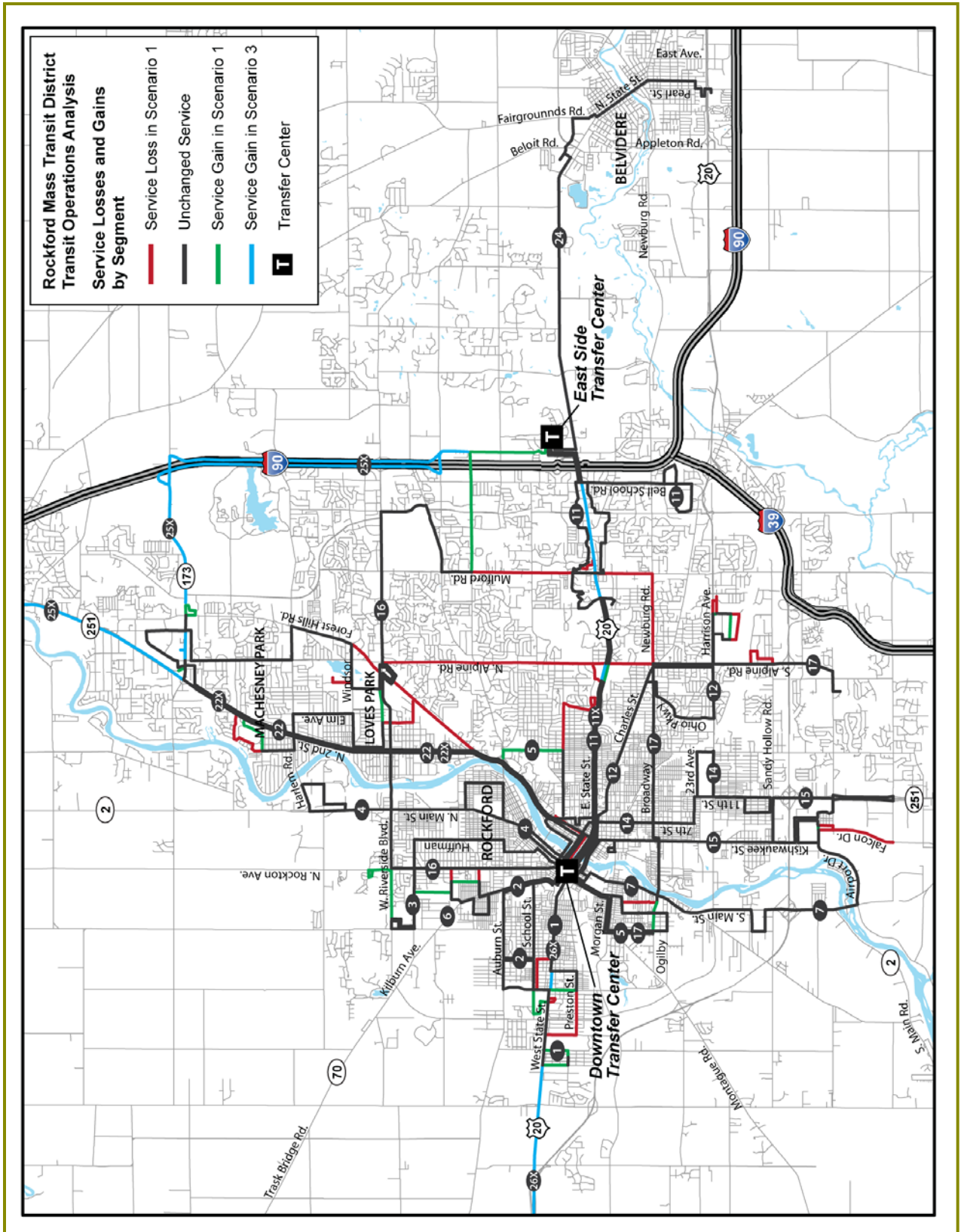




Figure 10-3 – Proposed Night and Sunday Segment Gain/Loss (All Scenarios)

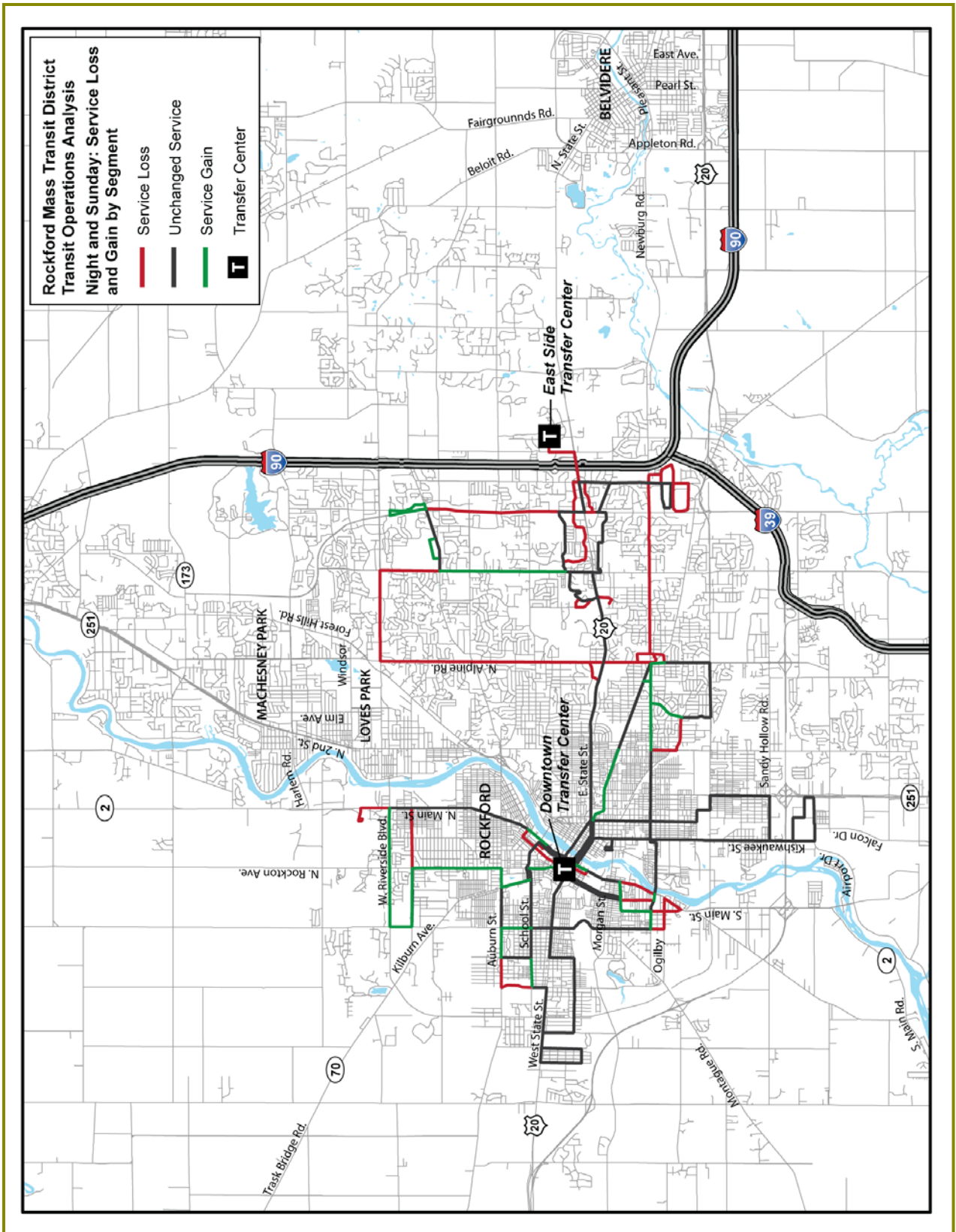




Table 10-1 – Revenue Hours and Total Cost by Scenario

Revenue Hours	Existing	Scenario 1	Scenario 2	Scenario 3
M-Fri Daytime	73,338	66,836	74,486	128,520
M-Fri Nighttime	7,650	6,120	5,100	510
Saturday	10,859	12,797	12,797	21,325
Sunday	2,600	2,600	2,600	2,600
Total Hours	94,447	88,353	94,983	152,955
Total System Cost	\$11,934,365	\$11,164,247	\$12,002,014	\$19,327,419
Cost to Loves Park/Machesney Park	\$343,028	\$343,028	\$343,028	\$343,028
Cost to Rockford	\$11,591,337	\$10,821,219	\$11,658,986	\$18,984,391
Change in Cost to Rockford		-\$770,118	\$67,649	\$7,393,054

## Funding Scenario 1 – Reduced Funding

Funding Scenario 1 makes the following changes to save approximately \$770,000. However, if RMTD implements this scenario, RMTD would recognize true costs once it developed run cuts and driver blocks.

Proposed service characteristics for all time periods of Scenario 1 are shown in **Table 10-2**.

### General Changes

These changes are common to all three scenarios.

#### Eliminate extra peak buses from all routes systemwide

RMTD currently operates additional trips on Routes 4, 5, 6, 12, 14, and 15. Based on general observations and the conducted ridership survey, RMTD does not seem to gain many riders from operating these additional trips. The study team therefore recommends their elimination.

#### Monday-Saturday Daytime Service will operate on a 60-min pulse to the Downtown Transfer Center

RMTD's current operational philosophy is for routes to operate at 30, 45, and 60-minute frequencies based on their routing and length. The agency also operates crosstown routes so that riders do not need to transfer downtown to other routes. Generally, this approach does not work unless the system operates high-service frequencies that result in low wait times for transfers.

RMTD's low and mismatched frequencies result in many trips with long wait times. The recommended solution is for all routes<sup>1</sup> to operate on a 60-minute "pulse," meaning that all routes meet at the Downtown Transfer Center once an hour. While some riders will not want to go downtown to transfer, this type of system provides the most benefit for the greatest amount of RMTD riders.

<sup>1</sup> Routes 2 and 11 are proposed to operate on a 30-minute frequency, but would still meet the pulse every hour.





Table 10-2 – Scenario 1 Service Summary

	Frequency			Service Span			Required Vehicles						
	M-F Daytime	M-F Nighttime	Saturday	Sunday	M-F Daytime	M-F Nighttime	Saturday	Sunday	M-F Daytime	M-F Nighttime	Saturday	Sunday	
<i>Regular Routes</i>													
1	West State	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
2	School Street	30	N/A	30	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
3	Huffman	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
4	N. Main	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
5	Clifton	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
6	Kilborn	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
7	S. Main	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
11	E. State	30	N/A	30	N/A	17.0	N/A	13.0	N/A	4	N/A	4	N/A
12	Charles	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
14	7th Street	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
15	Kishwaukee	60	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	1	N/A
16	Rockton/Riverside	60	N/A	60	N/A	16.0	N/A	12.0	N/A	2	N/A	2	N/A
17	Clifton/Broadway/Alpine	60	N/A	60	N/A	12.0	N/A	12.0	N/A	2	N/A	2	N/A
22	N. 2nd Street	60	N/A	60	N/A	12.0	N/A	12.0	N/A	1	N/A	1	N/A
LMC	Loves-Machesney Circulator	60	N/A	60	N/A	12.0	N/A	12.0	N/A	1	N/A	1	N/A
24	Belvidere	60	N/A	N/A	N/A	13.0	N/A	N/A	N/A	1	N/A	N/A	N/A
<i>Express Routes</i>													
		Trips											
11X	East State Express	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22X	North 2nd Street Express	5	N/A	2	N/A	2.5	N/A	2.5	N/A	2	N/A	1	N/A
25X	Beloit-Machesney-ESTC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26X	Winnebago-Rockford	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<i>Nighttime Routes</i>													
31	Auburn & Rockton	N/A	60	N/A	N/A	N/A	5.0	N/A	N/A	N/A	1	N/A	N/A
32	East State	N/A	60	N/A	N/A	N/A	1.0	N/A	N/A	N/A	2	N/A	N/A
33	W. State and Clifton	N/A	60	N/A	N/A	N/A	5.0	N/A	N/A	N/A	1	N/A	N/A
34	Harrison & Alpine	N/A	60	N/A	N/A	N/A	5.0	N/A	N/A	N/A	1	N/A	N/A
35	Kishwaukee and 7th	N/A	60	N/A	N/A	N/A	5.0	N/A	N/A	N/A	1	N/A	N/A
<i>Sunday Routes</i>													
41	Auburn & Rockton	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	N/A
40	East State	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
43	W. State and Clifton	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	N/A
44	Harrison & Alpine	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	N/A
45	Kishwaukee and 7 <sup>th</sup>	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	N/A





### Reconstituted Service for Loves Park and Machesney Park

RMTD currently provides service to Loves Park and Machesney Park via Route 22 North 2nd Street and Route 20 Alpine. However, neither route goes to downtown Rockford, thereby reducing opportunities for commuters originating in Loves Park and Machesney Park. It also reduces opportunities for riders from other parts of the Rockford Metropolitan Area to access Loves Park and Machesney Park. This lack of connections may have caused low ridership on both of these routes.

The study team recommends retaining Route 22 North 2<sup>nd</sup> Street and extending it to downtown Rockford to connect to the remaining RMTD system. The study team also recommends eliminating Route 20 and replacing it with a new circulator route entitled the LMC Loves-Machesney Circulator. This new route would serve the local portions of Routes 20 and 22, connecting residential areas of Loves Park and Machesney Park to important local destinations and allowing riders to transfer to either Routes 16 or 22. RMTD could brand the LMC Route as a distinct route, with perhaps different signage and a bus wrap. This branding would make the service more identifiable for riders in those areas.

This configuration will include a similar number of revenue miles and cost for both Loves Park and Machesney Park while also providing connectivity to downtown Rockford, other routes in the RMTD system, and important local destinations in Loves Park and Machesney Park.

### East Side Transfer Center

RMTD opened its East Side Transfer Center in the fall of 2011. The center is on the far, eastern side of Winnebago County and provides convenient transfers between the newly implemented Belvidere Route and RMTD's fixed-route system.

The study team recommends that Routes 11 and 16 meet the Belvidere Route at the East Side Transfer Center. Route 11 would give riders access to retail, office, and medical destinations on the East State Street corridor. The reconfigured Route 16 would let riders access Rock Valley College as well as other destinations on Riverside Boulevard. RMTD riders would be able to use both routes to access the Belvidere Route as well.

### **Individual Route Modifications**

These are route-specific modifications that make up Scenario 1. As indicated, these changes carry forward through Scenarios 2 and 3.

### Monday-Friday Daytime Service

- **Route 1 West State**

The study team recommends changing Route 1's alignment on the inbound trip. Beginning at West State and Springfield, this revised routing would include the VA Clinic and a one-way loop on School Street, Johnston Avenue, and Pierpont Avenue. This route would then retrace Pierpont Avenue, and continue on Preston and Horace to provide bi-directional service before using West State Street to return downtown. The study team recommends that RMTD run buses every 60-minutes to meet the pulse at the Downtown Transfer Center. Daytime service is proposed from 5:15 a.m. through 6:15 p.m.





- **Route 2 School Street**

The study team proposes using Kilburn Avenue between the Downtown Transfer Center and School or Auburn Streets and shortening this route's western portion to Johnston Avenue. Route 1 would serve Auburn High School. Daytime service would be from 5:15 a.m. to 6:15 p.m.
- **Route 3 Huffman**

Route 3 would no longer interline with Route 13, but would extend to Wesley Willows (a senior community) on Rockton Avenue. This route would use Schmitt Avenue and Embury Lane as the turnaround point and its buses would run every 60 minutes rather than every 90 minutes to meet the pulse at the RMTD Transfer Center. Daytime service would operate from 5:15 a.m. to 6:15 p.m.
- **Route 4 North Main**

No changes are proposed for this alignment. Daytime service would run from 5:15 a.m. to 6:15 p.m.
- **Route 5 Clifton**

The southern alignment would remain the same, but service would be extended to include a one-way loop (similar to part of Route 13) covering parts of Longwood, Rural, Parkview, North 2nd Street, Madison, and Jefferson. This new service would give Route 5 a 60-minute cycle time. The study team recommends 60-minute frequencies for this route with daytime service between 5:15 a.m. and 6:15 p.m.
- **Route 6 Kilburn**

The study team recommends RMTD extend this route to the Walmart at Riverside and Central via Kilburn and Central Avenues. The alignment on this route's northern end would include Edgemont, Glenwood, Searles, Halstead, and Central on an outbound trip to Walmart. The inbound trip would use Central, Halstead, Searles, and Glenwood to access Kilburn. The study team recommends reducing existing headways to 60 minutes. Daytime service would operate from 5:15 a.m. to 6:15 p.m.
- **Route 7 South Main**

The study team suggests RMTD eliminate the Falcon Drive segment on this route's southern end. This modification would provide enough time for buses to meet Amtrak trains when service is implemented. Amtrak is not expected to operate more than one or two trains in each direction. Daytime service would be from 5:15 a.m. to 6:15 p.m.
- **Route 11 East State**

The study team suggests eliminating the Morsay and Alpine deviations since there will be no Route 20 to transfer to on Alpine. This route would operate from 5:15 a.m. to 10:15 p.m. to provide connections to the East Side Transfer Center and Route 16.
- **Route 12 Charles**

The study team does not propose any changes to this route's alignment or service frequency. Daytime service is from 5:15 a.m. to 6:15 p.m.
- **Route 13 Rural**

The study team recommends eliminating this route because of low ridership and realigning the Longwood and Madison segments with Route 22.





- **Route 14 7th Street**

The study team proposes no changes to this alignment, but suggests eliminating peak period trips to provide only 60-minute headways. Daytime service is from 5:15 a.m. to 6:15 p.m.
- **Route 15 Kishwaukee**

The study team proposes no changes to this alignment, but suggests eliminating peak period trips to provide only 60-minute headways. Daytime service is from 5:15 a.m. to 6:15 p.m.
- **Route 16 Rockton/Riverside**

The study team proposes this route is no longer part of the Big Loop, but becomes a directional route primarily using Riverside Boulevard and ending at the East Side Transfer Center. Service will be on Rockton, Riverside, MacFarland, Spring Brook, Mulford, Spring Creek, and Lyford connecting to the East Side Transfer Center. The study team also proposes 60 minute headways between 6:15 a.m. and 10:15 p.m. The additional nighttime service would replace Route 36 Perryville, which would be eliminated, pending RMTD's acceptance of this recommendation.
- **Route 17 Broadway/Alpine**

This route would no longer form part of Big Loop, but would become a directional route traveling on Broadway and Alpine Road, terminating at RVC Jefferson. This route's southern portion would essentially follow the current Route 20, including the deviation on Harrison Avenue to the Post Office on Eastrock Drive. Service would operate on 60 minute headways between 6:15 a.m. and 6:15 p.m.
- **Route 20 Alpine**

The study team suggests eliminating Route 20 due to low ridership. A realigned Route 17 would cover this route's southern portion from Alpine to RVC Jefferson. The proposed Loves Park/Machesney Park Circulator would cover the northern portion of Alpine in Loves Park and Machesney Park.
- **Route 22 North 2nd Street**

The study team proposes extending Route 22 to connect downtown Rockford to Loves Park and Machesney Park via North 2nd Street. This will connect riders in these areas to all other routes in the RMTD system. They also propose interlining this route with the Loves Park/Machesney Park Circulator, changing the route number at the Machesney Mall. In downtown Rockford, Route 22 will access the Downtown Transfer Center via West State/North 3rd Street outbound, and West 2nd/West Jefferson inbound. The study team recommends 60 minute headways between 5:15 a.m. and 6:15 p.m.
- **Route 22X**

The study team does not propose any changes for this route.
- **Route 23**

The study team recommends eliminating this route given changes at Growth Enterprises.
- **LMC (Loves Park/Machesney Park Circulator)**

This newly created route would serve local destinations in Loves Park and Machesney Park and would operate in one-way clockwise loops. Starting at the Machesney Mall (and interlined with Route 22), the proposed alignment includes the North 2nd Street frontage road, Tampa Lane, Orlando Street, IL 173, Alpine Road, Harlem Road, Forest Hills Road, Windsor Road, Material Avenue, Walmart (transfer to Route 16), Riverside Boulevard, North 2nd Street, Windsor Road,







Elm Avenue, Harlem Road, Victory Lane, Machesney Road, and Mall Drive. This route would operate the same hours as Route 20 with daytime hours from 5:15 a.m. to 6:15 p.m.

Maps of the Scenario 1 Monday through Friday daytime service are shown as follows: system (**Figure 10-4**), changes in frequency (**Figure 10-5**), and changes in service span (**Figure 10-6**).

#### Saturday Service

The study team suggests all route alignments and services would be the same as Monday through Friday, with the following exceptions:

- On Saturdays, all routes would operate between 6:15 a.m. and 6:15 p.m.
- Route 7 would operate at 60-minute headways to promote consistency systemwide for all time periods.

#### Nights/Sunday Service

The study team recommends mostly small alignment changes to RMTD's nighttime and Sunday routes because they work well and provide basic coverage throughout the city. However, they would eliminate Route 36 Perryville, given its low ridership. They would also extend Route 16's operating hours to 10:15 p.m. to connect part of Perryville Road and Rock Valley College to RMTD's other nighttime routes at the Downtown Transfer Center.





Figure 10-4 – Proposed Scenario 1 Monday-Friday System

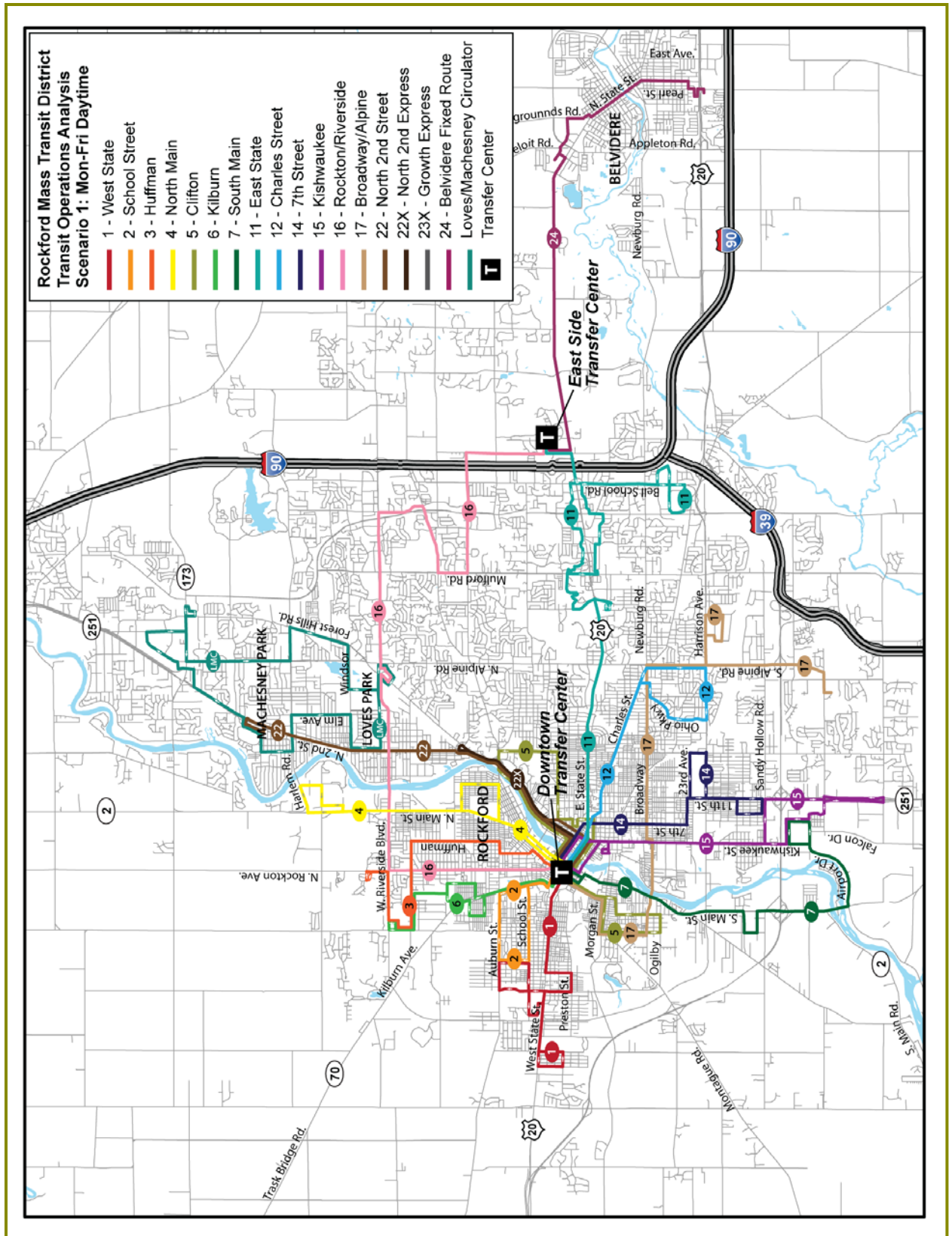




Figure 10-5 -- Proposed Change Existing to Scenario 1 Monday-Friday Service Span

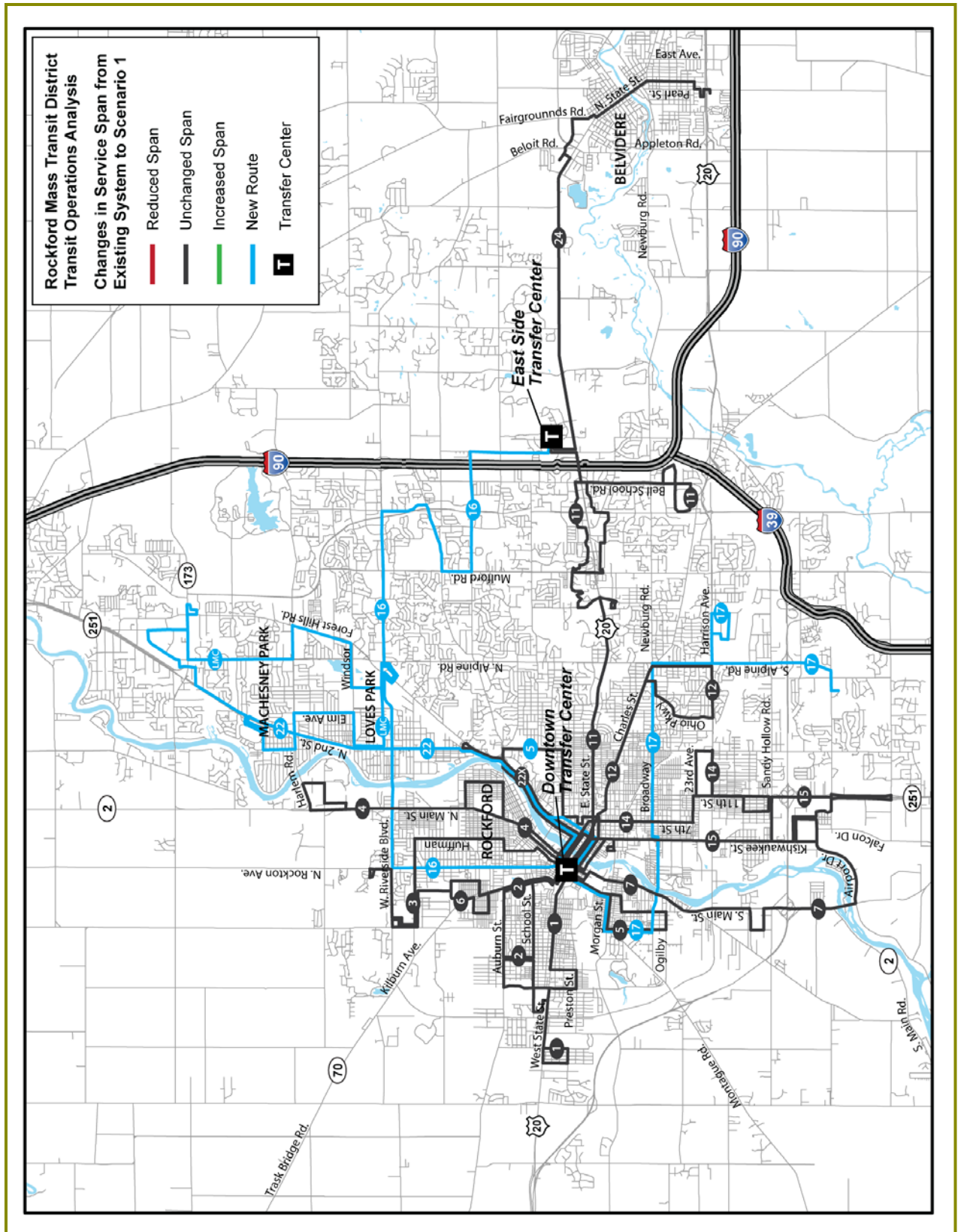
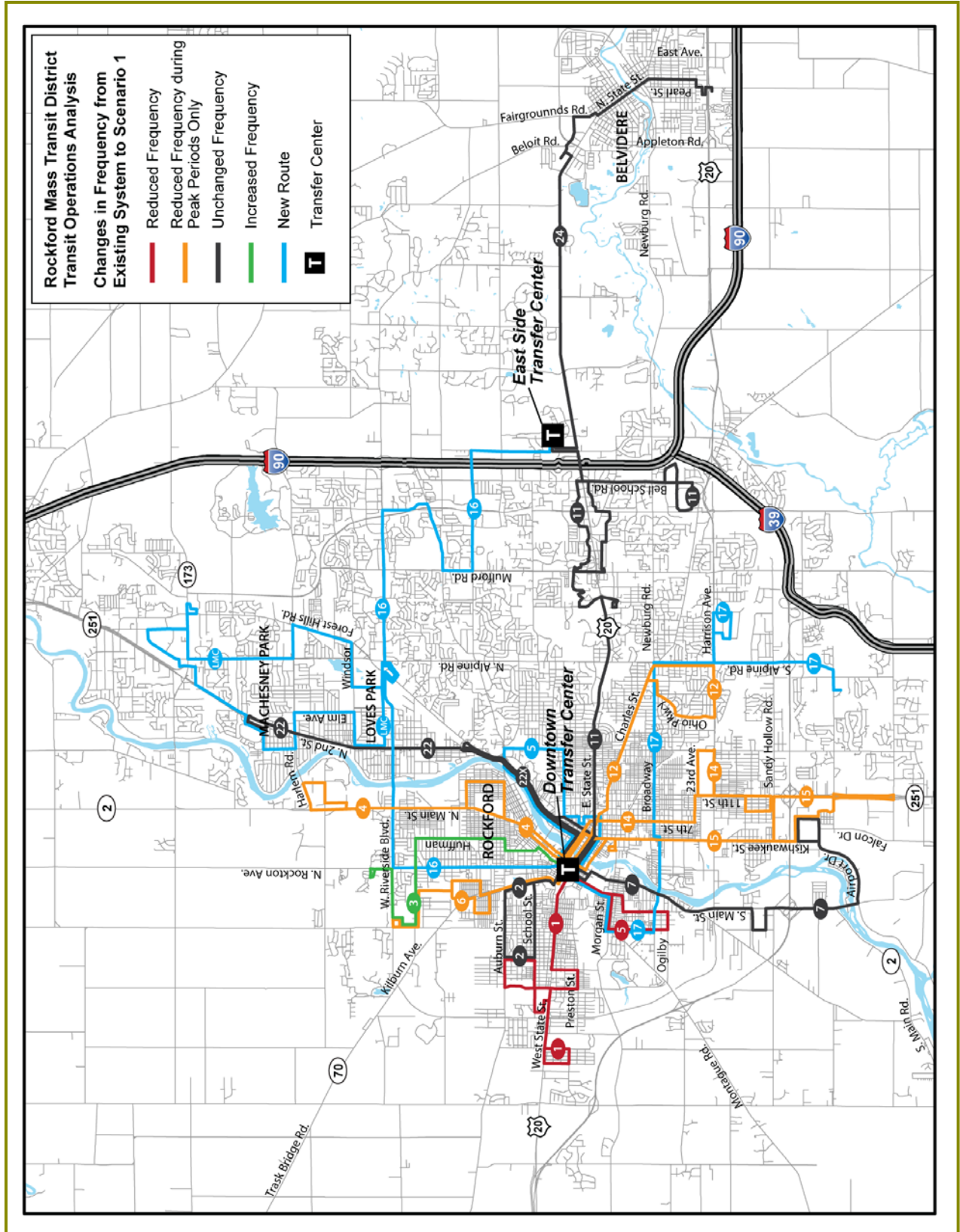




Figure 10-6 – Proposed Change Existing to Scenario 1 Monday-Friday Frequency





Other route alignment changes are described below:

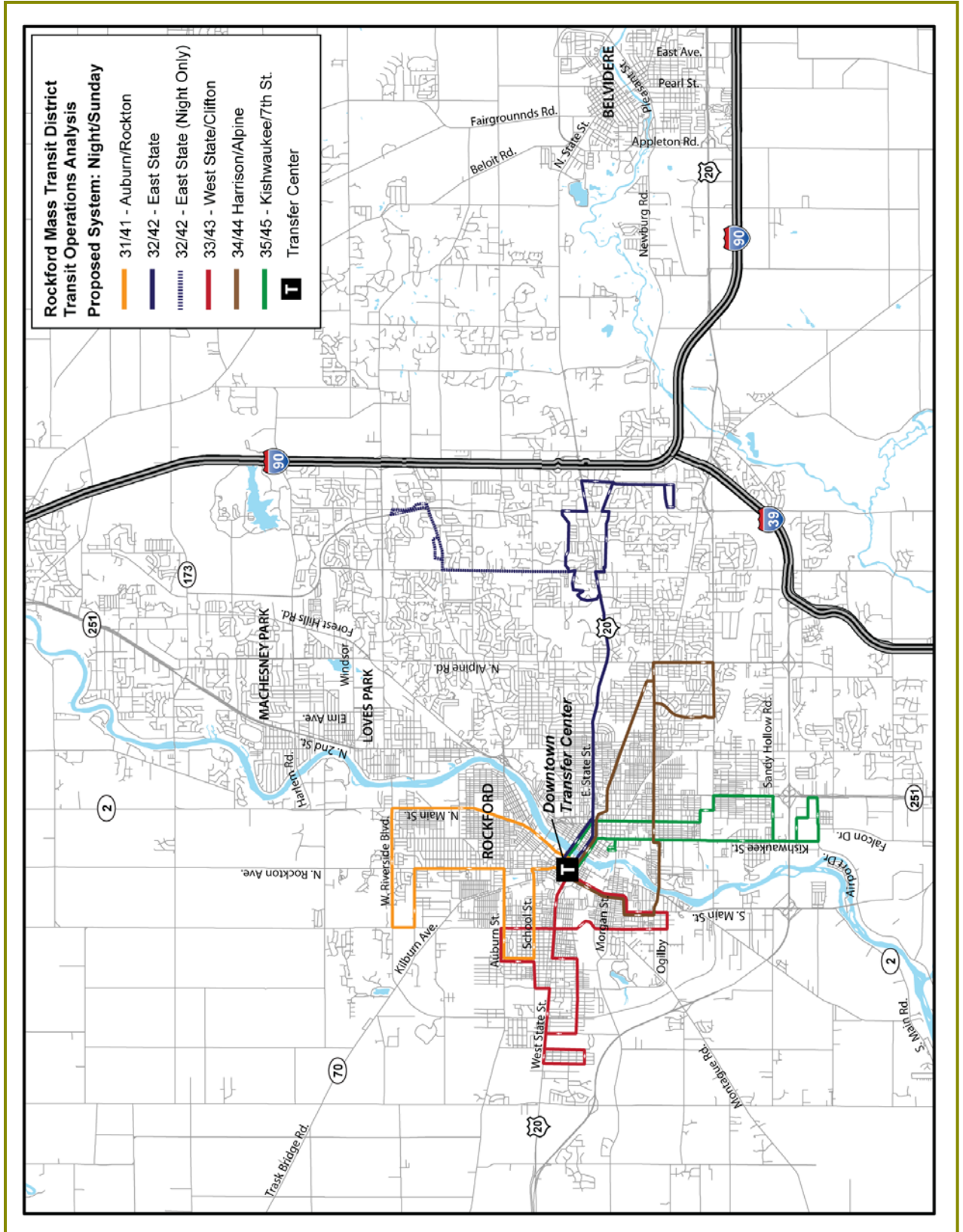
- **Route 31/41 Auburn/Rockton**  
The study team recommends that RMTD provide more service along School Street (outbound) and Auburn Street (inbound) and use Kilburn Avenue and Central Avenue to travel north rather than Rockton Avenue and Halstead Road. This would allow Route 31/41 to serve the high ridership Kilburn corridor and provide service to the Walmart at Riverside and Central. The inbound trip from North Towne Mall is on North Main Street and would not change.
- **Route 32/42 East State (Nighttime Only)**  
The study team proposes limiting Route 32/42 to only one hour at night because of Route 11's later hours in this Scenario and to a single East State night-route. On weekdays, this route would operate north on Mulford Road to connect to Rock Valley College.
- **Route 33/43 State/Clifton**  
Instead of heading south on Winnebago Street as this route does now, the study team recommends that buses on this route leave the Downtown Transfer Center and travel west on West State Street to Euclid Avenue. On the return trip, these buses would travel on Auburn Street, Kilburn Avenue, and Whitman Street to head back east. At North Main Street, buses would turn south and loop on South Main and Winnebago Streets before returning to the Downtown Transfer Center.
- **Route 34/44 Harrison/Alpine**  
The study team suggests RMTD route its buses south on Winnebago Street from the Downtown Transfer Center instead of South Main Street as it does now. After using the current routing on 15th Avenue/Broadway and looping through 20th/Wesleyan/Ohio/Harrison, the study team proposes having buses return to the Downtown Transfer Center on Charles Street instead of Broadway and Kishwaukee. These changes will provide a second nighttime connection to the Swedish American Medical Center and serve the full length of Charles Street.
- **Route 35/45 Kishwaukee/7th Street**  
The study team does not propose any changes to Route 35/45 since it serves high ridership areas on Rockford's south side.
- **Route 36 Perryville**  
The study team proposes eliminating Route 36 because of low ridership. Route 16, however, would provide evening trips to Rock Valley College.

Figure 10-7 shows changes to RMTD's Night/Sunday service.





Figure 10-7 – Proposed Scenarios 1-3 Night/Sunday System





## Funding Scenario 2 – No Change to Funding

Funding Scenario 2 assumes no change to RMTD’s current estimated FY 2012 budget, but increases operating hours for the routes shown in Funding Scenario 1. (**Table 10-3** shows these changes.) The increased operating hours would cost \$67,000 more than Funding Scenario 1, but could be cheaper if the study team and/or RMTD could find potential savings in the final run cuts.

### Monday-Friday Daytime Service

- Most routes would operate from 5:15 a.m. to 8:15 p.m. Monday through Friday;
- Route 11 would operate from 5:15 a.m. to 10:15 p.m. Monday through Friday;
- Route 16 would operate from 6:15 a.m. to 10:15 p.m. Monday through Friday;
- Route 17 would operate from 6:15 a.m. to 6:15 p.m. Monday through Friday;
- Route 22 would operate from 6:15 a.m. to 8:15 p.m. Monday through Friday; and
- LMC would operate from 6:15 a.m. to 8:15 p.m. Monday through Friday.

Maps of Scenario 2’s Monday through Friday daytime services are shown in the following Figures: system (**Figure 10-8**), frequency changes (**Figure 10-9**), and service span changes (**Figure 10-10**).

### Saturday Service

The study team proposes no changes from those listed in Scenario 1.

### Night/Sunday

The study team proposes no changes from those listed in Scenario 1.





Table 10-3 – Scenario 2 Service Summary

	Frequency			Service Span			Required Vehicles						
	M-F Daytime	M-F Nighttime	Saturday	Sunday	M-F Daytime	M-F Nighttime	Saturday	Sunday	M-F Daytime	M-F Nighttime	Saturday	Sunday	
<b>Regular Routes</b>													
1	West State	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
2	School Street	30	N/A	N/A	30	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
3	Huffman	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
4	N. Main	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
5	Clifton	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
6	Kilborn	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
7	S. Main	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
11	E. State	30	N/A	N/A	30	N/A	17.0	N/A	13.0	N/A	4	N/A	N/A
12	Charles	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
14	7th Street	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
15	Kishwaukee	60	N/A	N/A	60	N/A	14.0	N/A	12.0	N/A	1	N/A	N/A
16	Rockton/Riverside	60	N/A	N/A	60	N/A	16.0	N/A	12.0	N/A	2	N/A	N/A
17	Clifton/Broadway/Alpine	60	N/A	N/A	60	N/A	12.0	N/A	12.0	N/A	2	N/A	N/A
22	N. 2nd Street	60	N/A	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	N/A
LMC	Loves-Machesney Circulator	60	N/A	N/A	60	N/A	13.0	N/A	12.0	N/A	1	N/A	N/A
24	Belvidere	60	N/A	N/A	N/A	N/A	14.0	N/A	N/A	N/A	1	N/A	N/A
<b>Express Routes</b>													
11X	East State Express	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
22X	North 2nd Street Express	5	N/A	2	N/A	N/A	2.5	N/A	2.0	N/A	2	N/A	N/A
25X	Beloit-Machesney-ESTC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
26X	Winnebago-Rockford	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Nighttime Routes</b>													
31	Auburn & Rockton	N/A	60	N/A	N/A	N/A	N/A	N/A	4.0	N/A	N/A	1	N/A
32	East State	N/A	60	N/A	N/A	N/A	N/A	N/A	1.0	N/A	N/A	2	N/A
33	W. State and Clifton	N/A	60	N/A	N/A	N/A	N/A	N/A	4.0	N/A	N/A	1	N/A
34	Harrison & Alpine	N/A	60	N/A	N/A	N/A	N/A	N/A	4.0	N/A	N/A	1	N/A
35	Kishwaukee and 7th	N/A	60	N/A	N/A	N/A	N/A	N/A	4.0	N/A	N/A	1	N/A
<b>Sunday Routes</b>													
41	Auburn & Rockton	N/A	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	1
40	East State	N/A	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	2
43	W. State and Clifton	N/A	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	1
44	Harrison & Alpine	N/A	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	1
45	Kishwaukee and 7th	N/A	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	1







Figure 10-8 – Proposed Scenario 2 Monday-Friday System

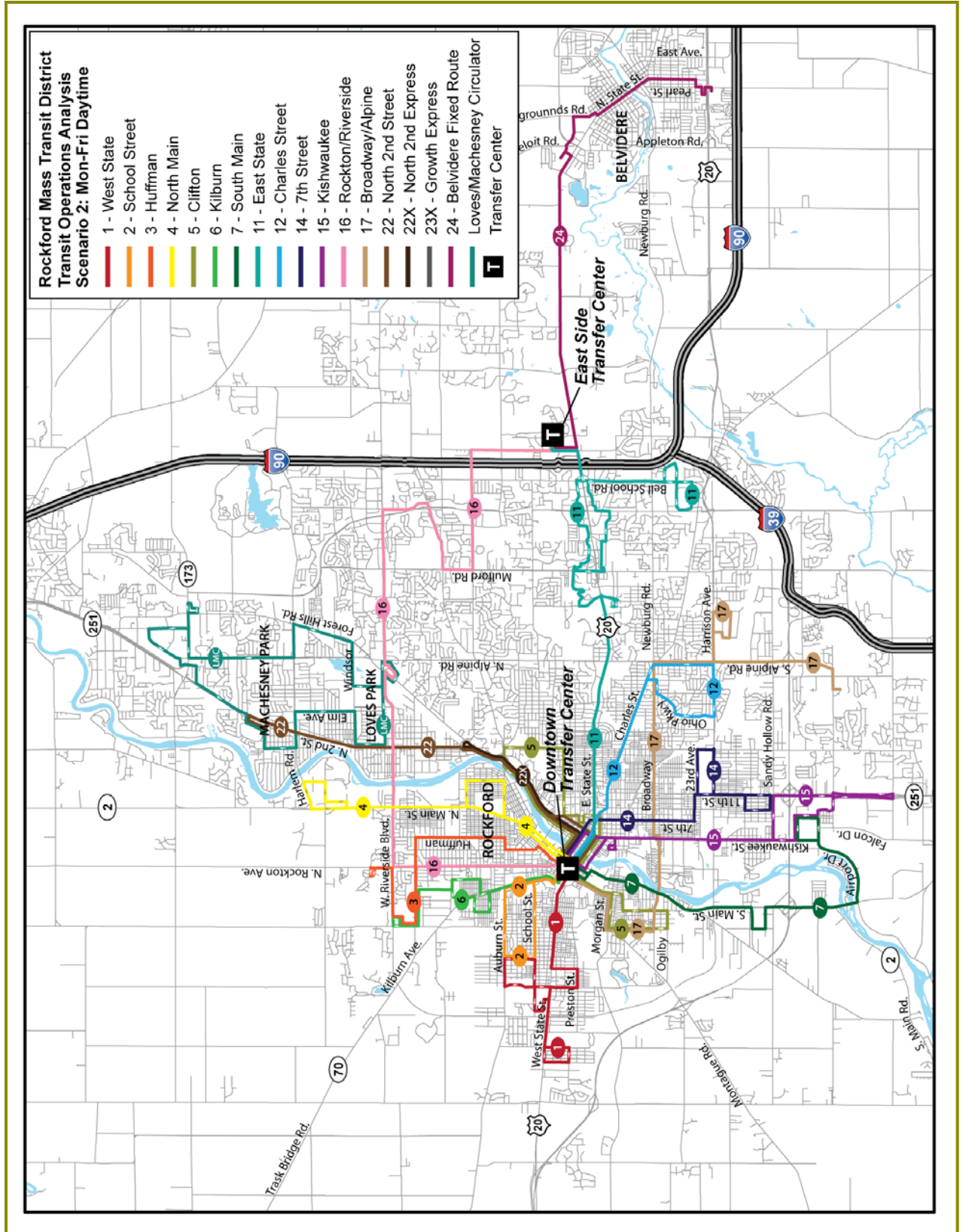




Figure 10-9 – Proposed Change Scenario 1 to 2 Monday-Friday Service Span

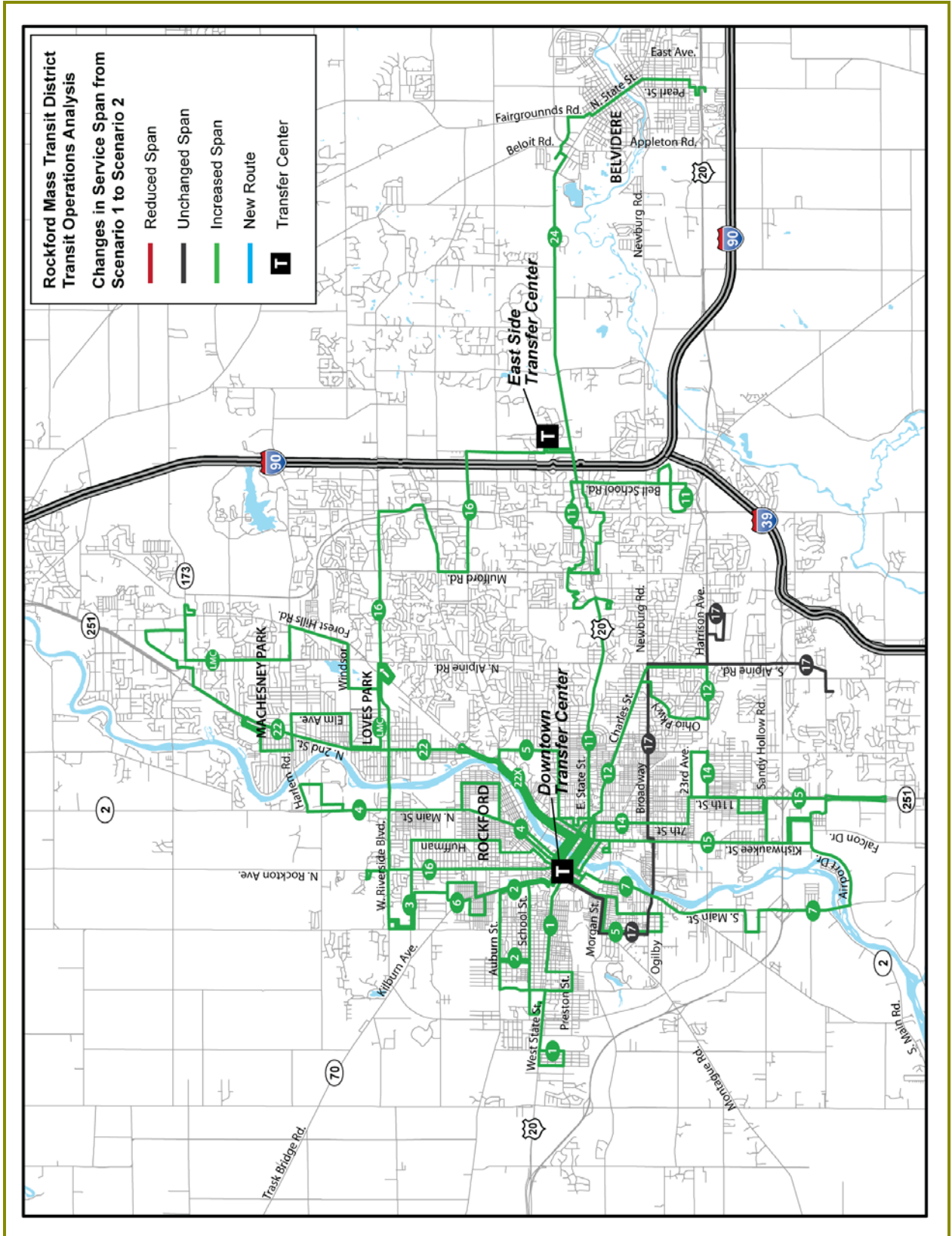
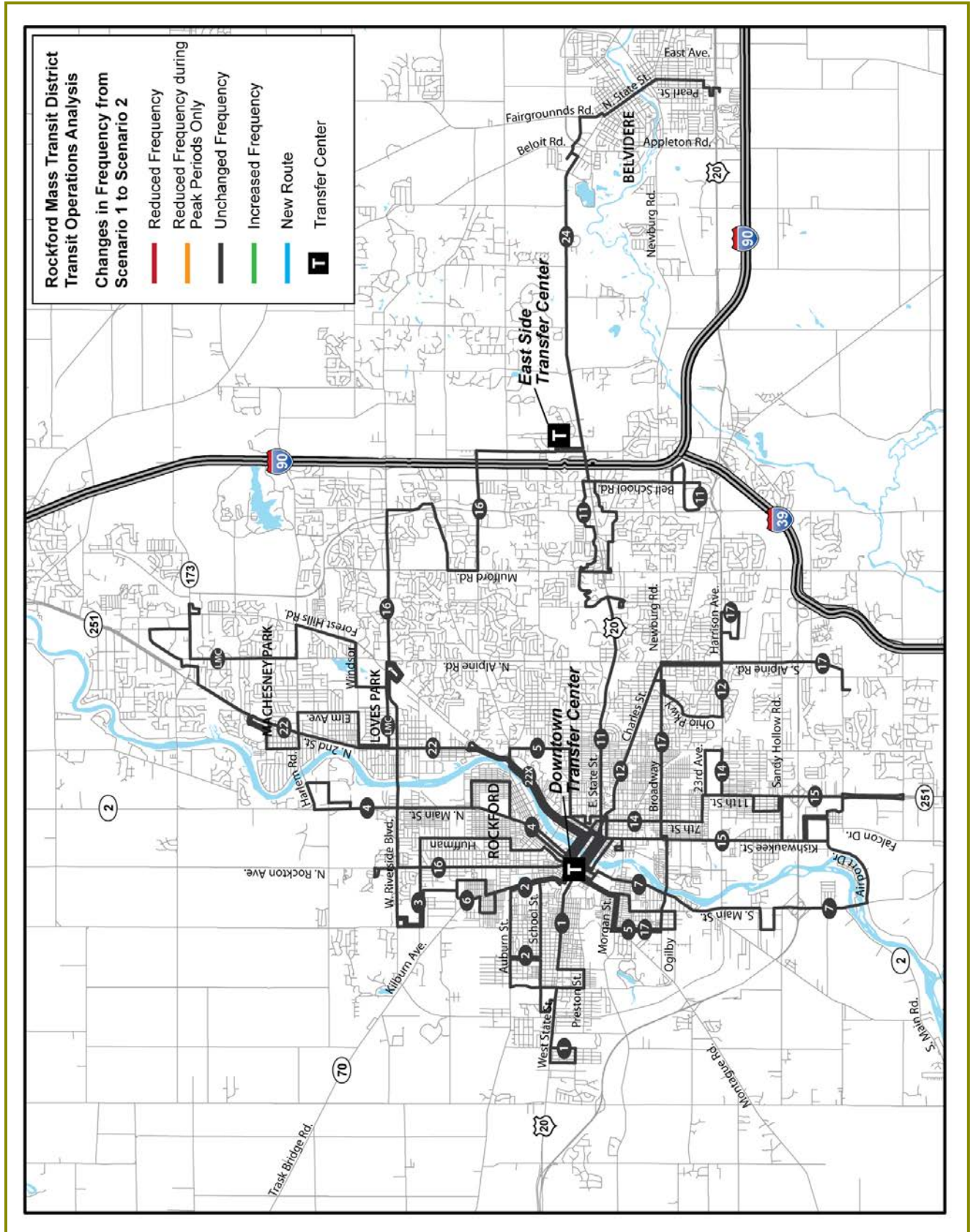




Figure 10-10 – Proposed Change Scenario 1 to 2 Monday-Friday Frequency





## Funding Scenario 3 – Increase in Funding

Funding Scenario 3 assumes RMTD would receive a revenue increase and therefore builds upon Scenario 2's recommendations. These recommendations cost approximately \$7.39 million and are designed to meet transit riders' unmet demand in the region. The City of Rockford would likely pay for most of this funding increase since Loves Park and Machesney Park's revenue contributions to RMTD are capped at \$343,000. However, because this scenario includes routes to Belvidere, Winnebago, and Beloit, these surrounding communities could contribute funds to potentially offset these costs.

**Table 10-4** shows proposed service characteristics for all time periods for Scenario 3.

### Monday-Friday Daytime Service

- **Increased Service Span**

Scenario 3 would extend the weekday operating hours for all daytime bus routes to 11:15 p.m. and replace all of the nighttime routes. This would drastically improve the experience for late-night shift workers and make later evening errands and recreational trips possible.

- **Increased Frequencies**

Scenario 3 would also increase frequencies on Routes 1, 6, 14, and 15 to create a 30-minute pulse for heavy ridership routes and a larger 60-minute pulse that includes all routes within the system. It would thus create a "30-minute network" within the system consisting of these four routes.

- **Additional Express Service**

Rockford's development pattern over the last 50 years has included an outward march of residential and commercial development to Rockford's north and east sides. The study team thus proposes the following additional express services:

- New Route 11X East State Express for morning and afternoon peak weekday trips (three trips in each peak direction);
- Extension of existing Route 22X to IL 173 for morning and afternoon peak weekday trips with additional trips for commuters into downtown Rockford (three trips in each peak direction); and
- New Route 26X Winnebago Express instituted between Winnebago and downtown Rockford for morning and afternoon peak weekday trips (three trips in each peak direction). From Winnebago, routing includes Elida Street and US 20 (West State Street). In downtown Rockford, this proposed route would operate east on West State Street, north on South 6th Street, and west on Jefferson Street before ending at the Downtown Transfer Center.

The two proposed express routes would provide fast trips for choice riders located in Rockford's suburbs. The key to serving these riders is trip speed, so traffic-signal priority may be important. Other improvements may include in-vehicle amenities like Wi-Fi, tabletops for laptops, and electrical outlets.





Table 10-4 – Scenario 3 Service Summary

	Frequency			Service Span			Required Vehicles						
	M-F Daytime	M-F Nighttime	Saturday	Sunday	M-F Daytime	M-F Nighttime	Saturday	Sunday	M-F Daytime	M-F Nighttime	Saturday	Sunday	
<b>Regular Routes</b>													
1	West State	30	N/A	30	N/A	18.0	N/A	17.0	N/A	2	N/A	2	N/A
2	School Street	30	N/A	30	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
3	Huffman	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
4	N. Main	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
5	Clifton	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
6	Kilborn	30	N/A	30	N/A	18.0	N/A	17.0	N/A	2	N/A	2	N/A
7	S. Main	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
11	E. State	30	N/A	30	N/A	18.0	N/A	17.0	N/A	4	N/A	4	N/A
12	Charles	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
14	7th Street	30	N/A	30	N/A	18.0	N/A	17.0	N/A	2	N/A	2	N/A
15	Kishwaukee	30	N/A	30	N/A	18.0	N/A	17.0	N/A	2	N/A	2	N/A
16	Rockton/Riverside	60	N/A	60	N/A	18.0	N/A	17.0	N/A	2	N/A	2	N/A
17	Clifton/Broadway/Alpine	60	N/A	60	N/A	18.0	N/A	17.0	N/A	2	N/A	2	N/A
22	N. 2nd Street	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
LMC	Loves-Machesney Circulator	60	N/A	60	N/A	18.0	N/A	17.0	N/A	1	N/A	1	N/A
24	Belvidere	60	N/A	N/A	N/A	18.0	N/A	N/A	N/A	1	N/A	N/A	N/A
<b>Express Routes</b>													
11X	East State Express	6	N/A	N/A	N/A	6.0	N/A	N/A	N/A	2	N/A	N/A	N/A
22X	North 2nd Street Express	6	N/A	N/A	N/A	6.0	N/A	N/A	N/A	2	N/A	N/A	N/A
25X	Beloit-Machesney-ESTC	60	N/A	N/A	N/A	2.0	N/A	N/A	N/A	2	N/A	N/A	N/A
26X	Winnebago-Rockford	6	N/A	N/A	N/A	6.0	N/A	N/A	N/A	2	N/A	N/A	N/A
<b>Nighttime Routes</b>													
31	Auburn & Rockton	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
32	East State	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
33	W. State and Clifton	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
34	Harrison & Alpine	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A	N/A
35	Kishwaukee and 7th	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Sunday Routes</b>													
41	Auburn & Rockton	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	N/A
40	East State	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1
43	W. State and Clifton	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	1
44	Harrison & Alpine	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	1
45	Kishwaukee and 7th	N/A	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A	N/A	8.0	1





- **New Regional Routes**

Scenario 3 includes new regional routes that will allow Rockford residents to connect to the region's other cities.

- Route 24 Belvidere is proposed to be a fully funded Monday through Friday route, with a service span matching all other routes and 60-minute headways.
- Route 25X Beloit-Machesney-East Side Transfer Center is a proposed 60-minute frequency, all-day route connecting the SMTD system in Beloit to job opportunities in Machesney Park and other RMTD routes at the East Side Transfer Center. Starting in Beloit, routing includes IL 251 (North 2nd Street), IL 173, I-90, Riverside Drive, and Lyford Road.

The following Figures show maps of the Scenario 3 Monday through Friday daytime service: system (**Figure 10-11**), frequency changes (**Figure 10-12**), and service span changes (**Figure 10-13**).

### Saturday Service

- **Consistent Service Span of 6:15 a.m. to 11:15 p.m.**

Saturday routes will mirror the nighttime service span of Monday through Friday routes.

- **Increased Frequencies**

Routes 1, 6, 14, and 15 will mirror the increased frequencies of Monday through Friday service with improvement to 30-minute frequencies.

### Night/Sunday Service

The study team does not propose any changes from those listed in Scenario 1.







Figure 10-12 – Proposed Change Scenario 2 to 3 Monday-Friday Frequency

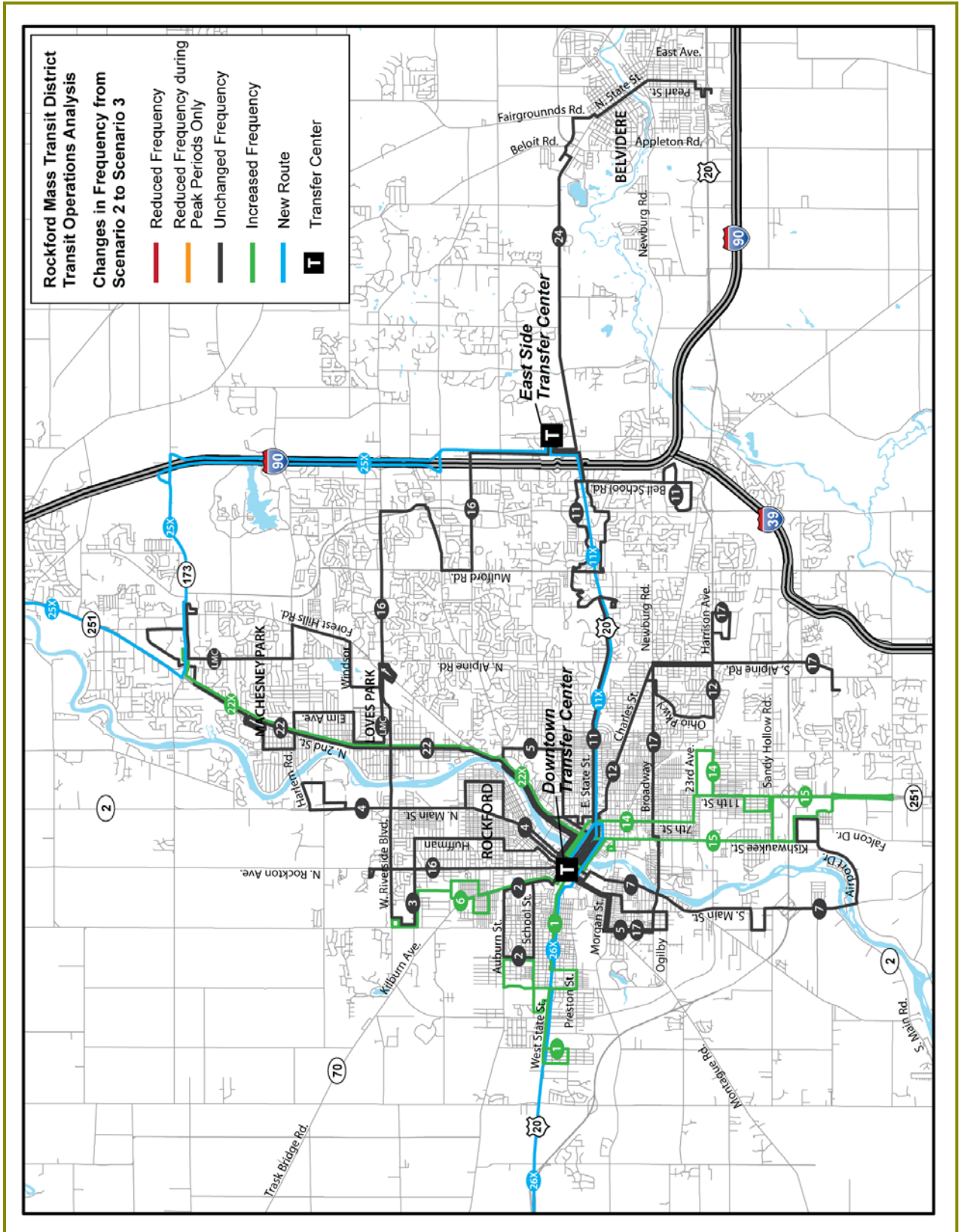
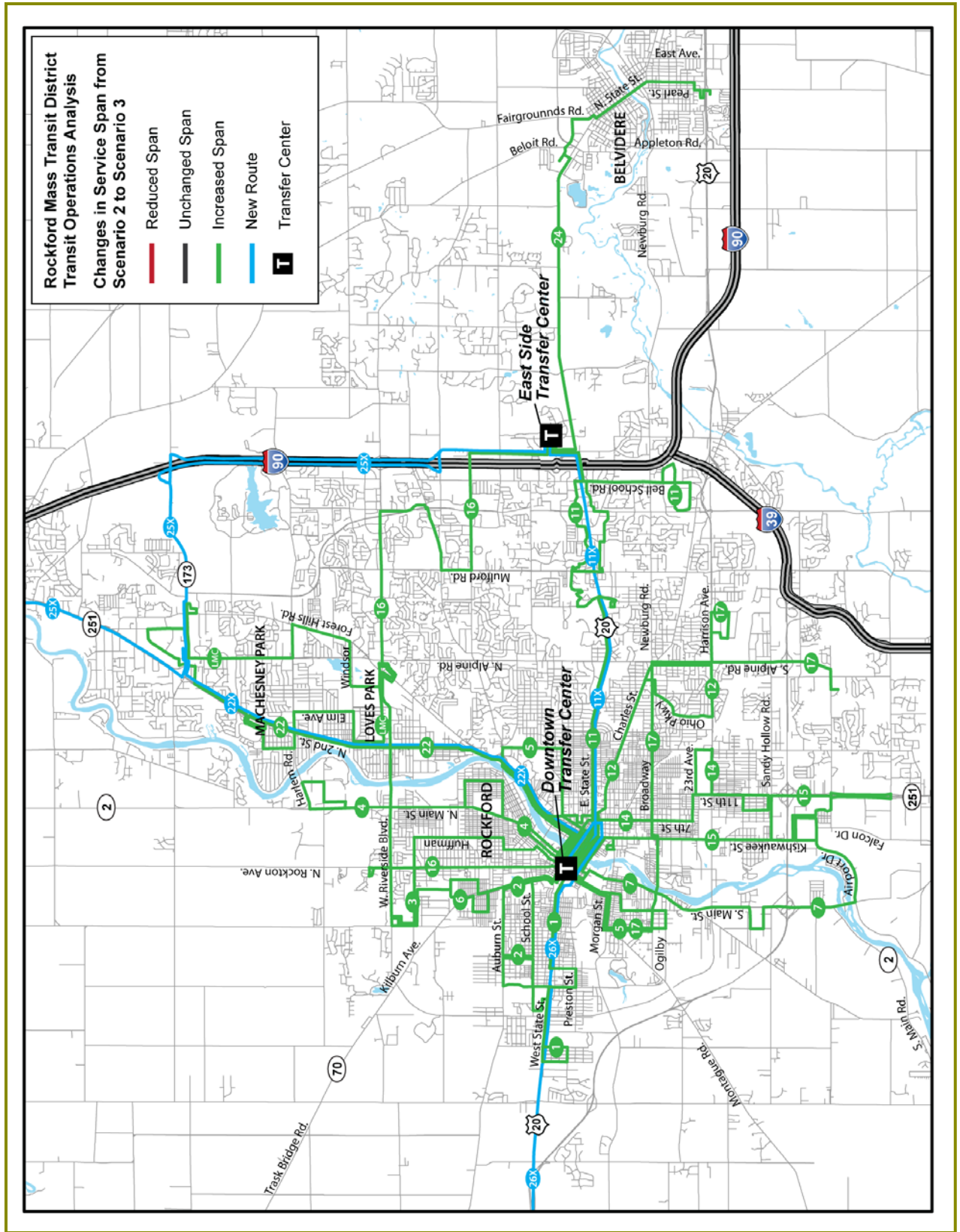






Figure 10-13 – Proposed Change Scenario 2 to 3 Monday-Friday Service Span







## 11. SERVICE RECOMMENDATIONS

This section of the report describes the preferred alternative. It is designed to fulfill Scenario 2. The RMTD budget will remain the same, thus allowing the system to operate a comparable number of revenue hours to those operated today. Its routing, however, differs from the Scenario 2 concept presented in the previous section of this report. After much consideration, RMTD staff concluded the routes should remain similar to those today with some minor routing modifications, efficiency improvements, and new routing to serve the East Side Transit Center. RMTD's ridership is increasing and there is no perceived need to "fix" something that seems to work for most riders.

In general, the proposed RMTD bus network remains fairly close to the existing network. Adjustments were made to individual routes to react to changing land use conditions in the region and to support the recently constructed East Side Transfer Center.

The study team recommends operating the RMTD bus network on a 60 minute pulse, meaning all routes meet once an hour at the Downtown Transfer Center to facilitate easy transfers between all parts of the system. Not all routes conform to the pulse, given the Rockford area's geographic limitations. Routes 5/13, 3/6, and 16/17 each have different frequencies. Some of the buses on these routes will therefore miss the pulse. Should circumstances change with any of these routes, the study team proposes RMTD adjust their cycle times and frequencies to meet the pulse. They also ask RMTD to eliminate flag stops and stop their buses only at signed locations. **Table 11-1** summarizes the proposed service on all RMTD routes.

**Appendix 7** at the end of this document includes maps and turn by turn directions for each route in the RMTD network, including individual route maps for each daytime, nighttime, and Sunday route in the network.

### Weekday Daytime Route Network

The following descriptions are the changes proposed for each of the 19 routes that will operate during the day Monday through Friday. **Figure 11-1** depicts the weekday daytime system map.

#### Route 1 West State

The study team recommends having Route 1's inbound buses travel north on Pierpont Street and use Auburn Street to get to Johnston Street. Currently, buses on Route 1 only travel to School Street before turning east to Johnston Street. This additional travel time will give this route a 60-minute cycle time, so its buses can meet most of the RMTD network each hour at the Downtown Transfer Center.





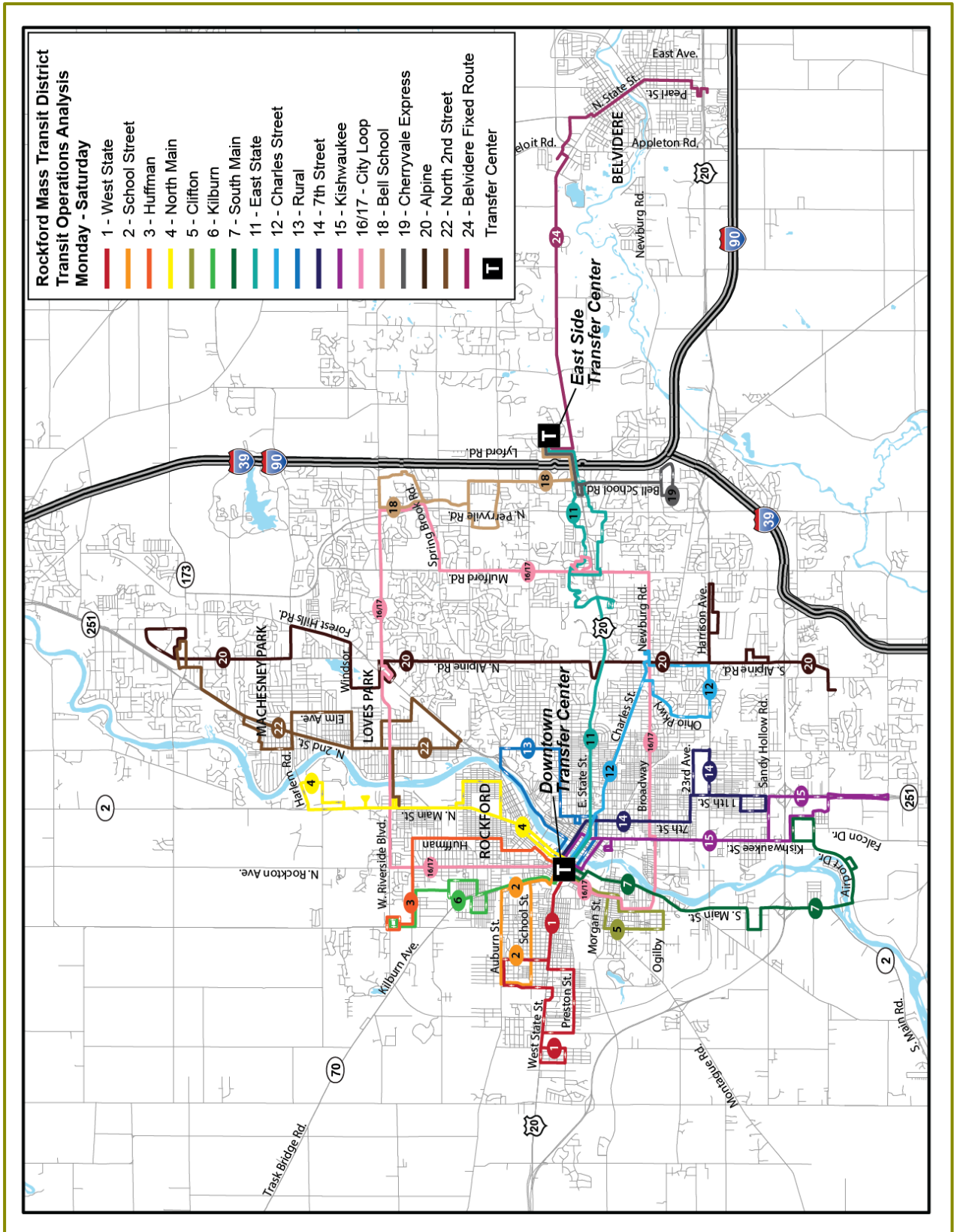
Table 11-1 – Proposed RMTD Network by Route and Time Period

	Weekday			Saturday			Sunday		
	Frequency	Start	End	Frequency	Start	End	Frequency	Start	End
1	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
2	30	5:15 AM	6:15 PM	30	6:15 AM	6:15 PM	N/A	N/A	N/A
3	90	5:15 AM	6:15 PM	90	6:15 AM	6:15 PM	N/A	N/A	N/A
6	90	5:15 AM	6:15 PM	90	6:15 AM	6:15 PM	N/A	N/A	N/A
4	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
5	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
7	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
11	30	5:15 AM	7:15 PM	30	6:15 AM	7:15 PM	N/A	N/A	N/A
12	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
13	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
14	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
15	60	5:15 AM	6:15 PM	60	6:15 AM	6:15 PM	N/A	N/A	N/A
16	45	5:15 AM	6:15 PM	45	6:15 AM	6:15 PM	N/A	N/A	N/A
17	45	5:15 AM	6:15 PM	45	6:15 AM	6:15 PM	N/A	N/A	N/A
18	60	6:45 AM	6:15 PM	60	7:15 AM	5:45 PM	N/A	N/A	N/A
19	60	6:15 AM	5:45 PM	60	6:45 AM	6:15 PM	N/A	N/A	N/A
20	60	5:30 AM	5:05 PM	60	9:30 AM	5:50 PM	N/A	N/A	N/A
22	60	5:45 AM	6:45 PM	60	9:20 AM	6:00 PM	N/A	N/A	N/A
31	60	6:15 PM	11:15 PM	N/A	N/A	N/A	N/A	N/A	N/A
32	60	6:15 PM	11:15 PM	N/A	N/A	N/A	N/A	N/A	N/A
33	60	6:15 PM	11:15 PM	N/A	N/A	N/A	N/A	N/A	N/A
34	60	6:15 PM	11:15 PM	N/A	N/A	N/A	N/A	N/A	N/A
35	60	6:15 PM	11:15 PM	N/A	N/A	N/A	N/A	N/A	N/A
36	60	6:15 PM	11:15 PM	N/A	N/A	N/A	N/A	N/A	N/A
41	N/A	N/A	N/A	N/A	N/A	N/A	60	9:15 AM	5:15 PM
42	N/A	N/A	N/A	N/A	N/A	N/A	60	8:15 AM	5:15 PM
43	N/A	N/A	N/A	N/A	N/A	N/A	60	9:15 AM	5:15 PM
44	N/A	N/A	N/A	N/A	N/A	N/A	60	9:15 AM	5:15 PM
45	N/A	N/A	N/A	N/A	N/A	N/A	60	9:15 AM	5:15 PM
	Weekday			Saturday			Sunday		
20X	Trips	5		Trips	4		Trips	N/A	N/A
22X	Trips	5		Trips	2		Trips	N/A	N/A





Figure 11-1 – Monday-Saturday Daytime Proposed System Map





### Route 2 School

The study team asks RMTD to change Route 2's alignment from Rockton Avenue to Kilburn Avenue. This will shorten the route 0.3 miles and improve its on-time performance. This route's cycle time (30 minutes) and frequency (30 minutes) will remain the same.

### Route 3 Huffman

The study team recommends interlining Route 3 with Route 6 Kilburn instead of Route 13 Rural. This will provide a bus connection every 45 minutes between the Downtown Transfer Center and the Central/Riverside Walmart, alternating between Routes 3 and 6. Route 3's frequency (90 minutes) and cycle time (45 minutes) will remain the same.

### Route 4 North Main

Route 4 will continue to operate with 60 minute headways during the day. RMTD has already programmed a total of six peak period extra trips for this route (three in the morning and three in the afternoon and evening) to help balance driver blocks.

### Route 5 Clifton

The study team proposes interlining Route 5 with a shortened version of Route 13 Rural. Each route would require 30 minutes to complete its part of the trip. This will result in a total cycle time of 60 minutes, with a single driver block serving both routes. Due to the larger ridership on Route 5 (compared to Route 13), the study team recommends the interlined route begin with Route 5 leaving the Downtown Transfer Center and end with Route 13 arriving at the Downtown Transfer Center.

### Route 6 Kilburn

The study team recommends extending Route 6 to the Central/Riverside Walmart. This route would remain the same from the Downtown Transfer Center to Glenwood Avenue/Searles Avenue, but would turn north on Searles Avenue, then west on Halstead Road, and north on Central Avenue to the Walmart. The return trip would return to Glenwood/Searles, where it would return to the Downtown Transfer Center using its current alignment.

As noted above, the study team recommends interlining Route 6 with Route 3. Each route will have a 45 minute cycle time and 90 minute headways, meaning one driver block will serve the combined route.

### Route 7 South Main

The study team proposes discontinuing service on Route 7's far southern end on Falcon Road between Airport Drive and Blackhawk Road due to low ridership. This change will minimally impact passengers while also helping to improve its on-time performance. Route 7 will continue to have a 60 minute cycle time and 60 minute headways. One driver block can operate this route.

### Route 11 East State

To improve its on-time performance, the study team proposes shortening Route 11 so it does not serve Bell School Road or CherryVale Mall. (The new Route 19 would serve these places instead.) Its cycle





time will remain at 120 minutes with 30 minute headways. This route would require four driver blocks most of the day.

### **Route 12 Charles**

The study team recommends having Route 12 only serve the Heartland/Colonial Village area once, during its outbound trip. After making the Alpine/Harrison/Ohio Parkway loop, this route's buses will return inbound using Parkside Drive to Charles Street. This would shorten travel times and improve on-time performance.

By serving Heartland/Colonial Village first, Route 12 maintains its time point with northbound Route 20 Alpine and provides a timely connection to Rockford Career College for riders originating further in on Charles Street or from other routes in the system.

### **Route 13 Rural**

The study team recommends realigning Route 13 Rural at its eastern end to complete the route in only 30 minutes and interline it with Route 5 Clifton. The realignment would occur at the corner of Rural Street and Parkview Avenue. Instead of continuing east on Rural, the route would turn north onto Parkside, then west on Spring Creek Road, and then south on N. 2nd Street to Y Boulevard where it would pick up the current alignment. This change would allow the route to serve P.A. Peterson Center for Health and the University of Illinois' College of Medicine at Rockford.

The interlined Routes 5 and 13 would have a 60 minute combined cycle time with 60 minute headways. A single driver block could operate both routes.

### **Route 14 7th Street**

The study team proposes no alignment or service changes for this Route.

### **Route 15 Kishwaukee**

The study team proposes no alignment or service changes for this Route.

### **Route 16 City Loop North**

The study team proposes no alignment or service changes for this Route.

### **Route 17 City Loop South**

The study team proposes no alignment or service changes for this Route.

### **Route 18 Bell School**

Route 18 Bell School is a new route proposed to operate from the East Side Transfer Center to Riverside Boulevard and Bell School Road, serving NCO on McFarland Road and the newly constructed cancer center at Spring Brook Road/Bell School Road. This Route would have a 30 minute cycle time and 60 minute headways. It would be interlined with Route 19 so that a single driver block could operate both routes.





### Route 19 CherryVale Express

Route 19 is a new route proposed to operate from the East Side Transfer Center to CherryVale Mall. It would replace part of the alignment Route 11 currently serves. It would have a 30 minute cycle time and 60 minute headways. It would be interlined with Route 18 so that a single driver block could operate both routes.

### Route 20 Alpine Crosstown

The study team does not propose any alignment or service changes for this Route.

### Route 20X Alpine Crosstown Express

The study team does not propose any alignment or service changes for this Route.

### Route 22 North 2nd Street

The study team recommends a small alignment change at Route 22's northern end. Currently, the route leaves Target on IL 173 and turns south on Alpine Road. The revised route would continue west across Alpine to the Home Depot, turn south in the parking lot, cross IL 173, and stay straight onto Orlando Street. The study team does not propose any service frequency or cycle time changes for this Route.

### Route 22X North 2nd Street Express

The study team does not propose any alignment or service changes for this Route.

### Route 23 Growth Enterprises

The study team recommends eliminating Route 23, given cutbacks and resulting low ridership at Growth Enterprises.

### Route 24 Belvidere

The study team does not propose any alignment or service changes for this Route. Furthermore, the study team does not include a discussion of its revenue hours and costs for the preferred alternative.

## Weeknight Route Network

The weeknight routes remain mostly the same, except for adjustments to Routes 34 and 36. **Figure 11-2** shows the weeknight system map. No cycle time or frequency changes would occur in the weeknight network. All routes would operate between 6:15 p.m. and 11:15 p.m. weeknights with 60 minute cycle times and 60 minute headways.

### Route 31 Auburn-Rockton

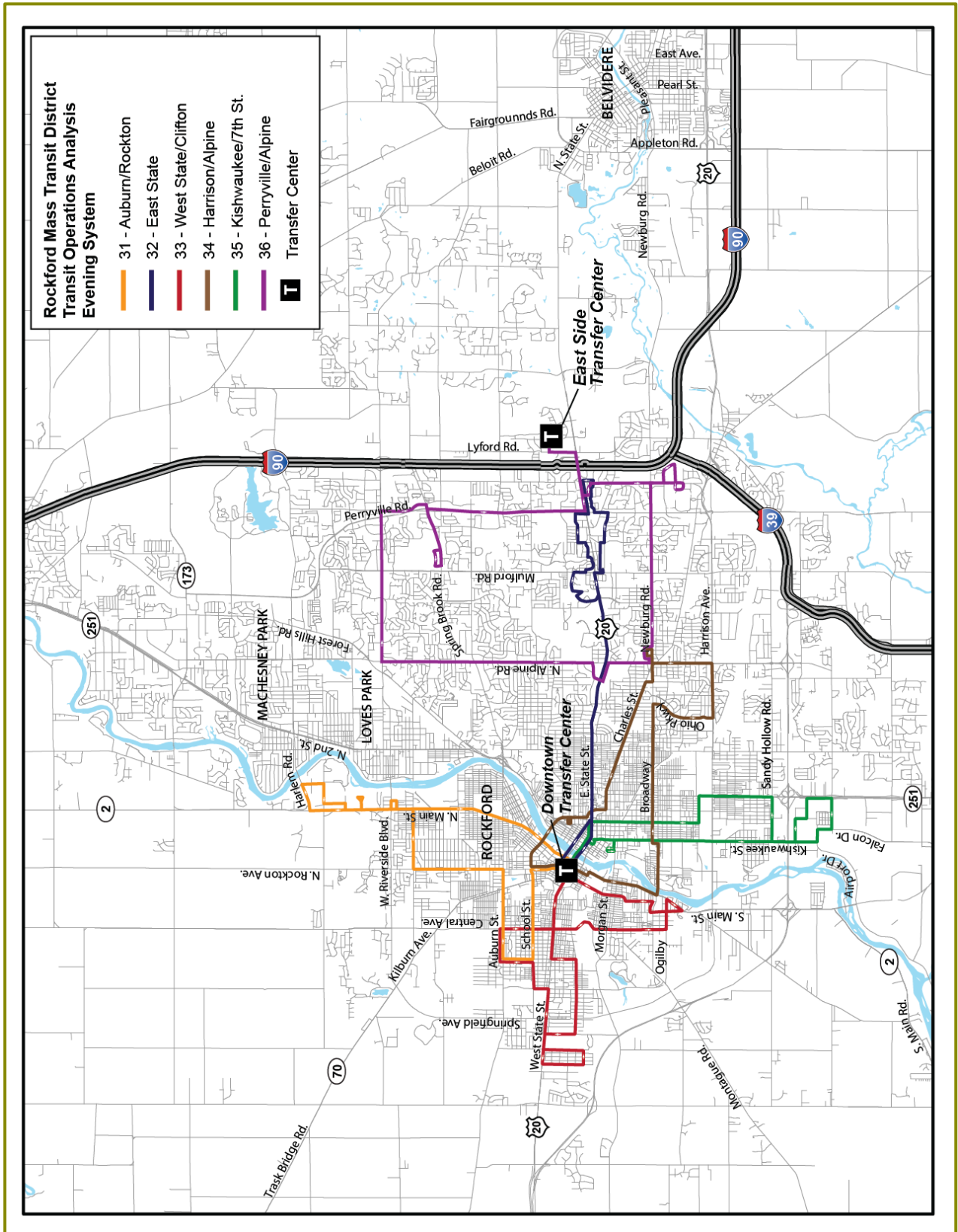
The study team does not propose any changes to this Route.







Figure 11-2 – Weeknight Proposed System Map





### Route 32 East State

The study team does not propose any changes to this Route.

### Route 33 West State-Clifton

The study team does not propose any changes to this Route.

### Route 34 Harrison-Alpine

Route 34 would have an alignment change on Charles Street when returning to the Downtown Transfer Center. Currently the route travels northbound on Charles, and then turns south on 20th Street, making its return trip to the Downtown Transfer Center via Broadway and Kishwaukee. The proposed alignment would continue northward on Charles Street to 9th Street/Longwood Street, then return to the Downtown Transfer Center using the Whitman Street Bridge and Winnebago Street.

The proposed route would add new night service to parts of Charles and Longwood Streets, while Route 35 Kishwaukee-7<sup>th</sup> Street would serve Kishwaukee.

### Route 35 Kishwaukee-7th Street

The study team does not propose any changes to this Route.

### Route 36 Perryville-Alpine

Route 36 would have a small alignment change near Rock Valley College and McFarland Road. Currently, the route travels east on Riverside Boulevard and then turns south on Mulford Road, serving Rock Valley College first and then NCO on McFarland Road. The realigned route would travel east on Riverside Boulevard, turn south on McFarland Road to serve NCO first, then travel back west on Spring Brook Road to serve Rock Valley College. Route 36 would then turn south on Perryville Road to return to its current alignment.

This change would create a more direct alignment to make Route 36 less confusing for passengers.

## Saturday Route Network

The study team recommends most of the weekday network for the Saturday network, so most of the alignment changes listed above would apply to the Saturday routes as well. There are three main route differences between the existing and proposed Saturday network:

- Route 7 would operate between 6:15 a.m. and 6:15 p.m., thus adding service to the South Main Corridor on Saturdays where none exists now.
- Route 18 would operate between the East Side Transfer Center and Bell School Road; and
- Route 19 would operate between the East Side Transfer Center and CherryVale Mall.

**Figure 11-1** depicts the Saturday route network, which would operate between 6:15 a.m. (instead of 5:15 a.m.) and 6:15 p.m.





Each of these improvements is covered in the daytime section above.

## Sunday Route Network

The Sunday route network will remain the same, with five routes in operation:

- Route 41 Auburn-Rockton
- Route 42 East State
- Route 43 West State-Clifton
- Route 44 Harrison-Alpine
- Route 45 Kishwaukee-7th Street

Alignment changes proposed for the Sunday network match those proposed for the weeknight network. Therefore, alignment changes are proposed for Route 44 Harrison-Alpine.

Additionally, the East State Route is recommended to simply be identified as Route 42, instead of Route 40 as it currently is. All of the Sunday routes match their weeknight routes in numbering, with the series in the 30s on weeknights and 40s on Sunday. However, the East State Route is designated as Route 32 on weeknights and Route 40 on Sundays. Making this change would add consistency and clear up any confusion riders may have about where the East State Route goes in the system.

**Figure 11-3** depicts the Sunday system map.

## Revenue Hours and Cost Estimate

The number of revenue hours and a cost estimate were prepared based on the proposed bus network outlined in the section above. Note that Route 24 Belvidere is not included in the revenue hour or cost estimate because it is paid for through other funds and thus does not impact RMTD's bottom line.

### Revenue Hours

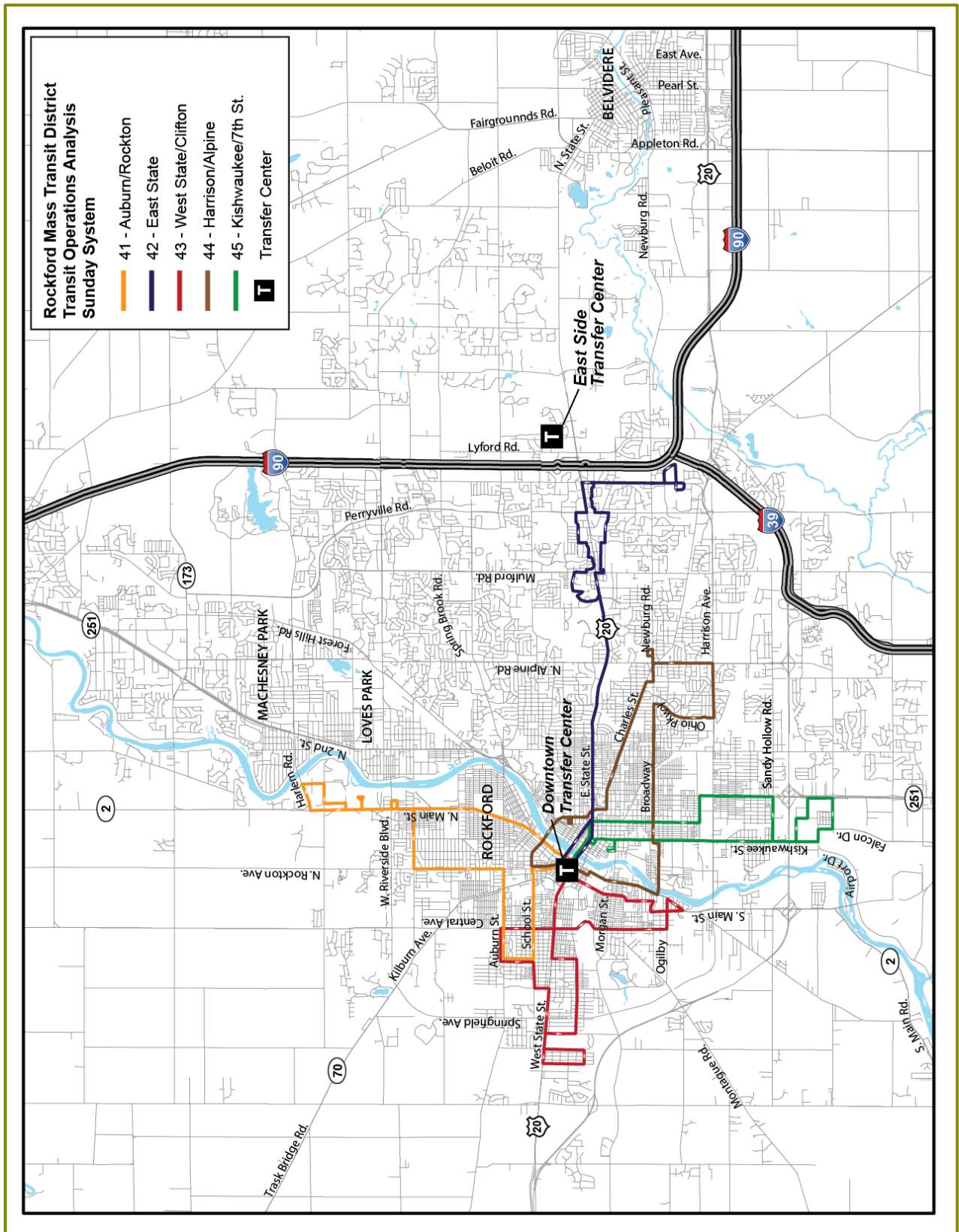
The study team estimated revenue hours by taking each route's proposed start and end times along with the number of required driver blocks to determine the number of revenue hours in service. This estimate was completed for four time periods: weekday daytimes, weeknights, Saturdays, and Sundays.

- Weekday Daytime: 284.2 daily revenue hours
- Weekday Nighttime: 32.0 daily revenue hours
- Saturdays: 238.2 daily revenue hours
- Sundays: 50.0 daily revenue hours





Figure 11-3 – Sunday Proposed System Map





To calculate annual revenue hours, the study team assumed RMTD annually operates on 255 weekdays, 52 Saturdays, and 52 Sundays. They also assumed RMTD does not operate on the following holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

The annual revenue hour estimates for the existing and proposed systems are presented in **Table 11-2**.

**Table 11-2 – Annual Revenue Hour Estimate for Proposed Network**

	Existing System	Proposed System	Difference
Weekday Revenue Hours	72,930	72,463	-468
Weekday Nighttime Revenue Hours	8,160	8,160	0
Saturday Revenue Hours	10,738	12,386	1,648
Sunday Revenue Hours	2,600	2,600	0
<b>Total Revenue Hours</b>	<b>94,428</b>	<b>95,609</b>	<b>1,181</b>

The reduction in daytime hours is due to the addition of Routes 18 and 19, which would end at the East Side Transfer Center a little earlier than at the downtown based routes. This results in a relatively small annual decrease of 468 revenue hours.

The increase in revenue hours occurs on Saturdays with the addition of Routes 7, 18, and 19. Adding these routes will annually result in 1,998 additional revenue hours and additional costs. RMTD decided to add these routes to provide a comprehensive Saturday network that allows riders to connect to all places they can get to on weekdays.

Overall, the preferred alternative would add a total of 1,181 revenue hours to RMTD’s bus system.

### Cost Estimate

The study team multiplied the total number of expected revenue hours (95,958) by \$127.91, which is RMTD’s estimated fiscal year 2014 cost per revenue hour to estimate the proposed bus network’s overall system cost. The cost per revenue hour is a fully burdened cost, meaning it includes all of the agency’s costs associated with putting an hour of service on the street.

**Table 11-3** shows the calculated cost of the proposed system.

**Table 11-3 – Annual Cost Estimate for Proposed Network**

	Existing	Proposed	Annual Difference
<b>Total System Cost</b>	<b>\$12,079,000</b>	<b>\$12,230,000</b>	<b>\$151,000</b>
State of Illinois Contribution	\$7,852,000	\$7,950,000	\$98,000
Loves Park Contribution	\$228,725	\$228,725	\$0
Machesney Park Contribution	\$113,987	\$113,987	\$0
Rockford Contribution	\$3,884,288	\$3,937,288	\$53,000





The study team estimates the entire system's costs to increase \$151,000. However, various entities are expected to share this cost. The study team assumed the State of Illinois would contribute 65 percent of the increased amount (or \$98,000 in this case) since 65 percent is typically what state governments have contributed in recent years.

The study team calculated costs for Loves Park and Machesney Park using RMTD's traditional formula for assessing cost to these places. This formula included a cost of \$68.19 per revenue hour and \$3.75 per revenue mile for each hour and mile of service within the borders of these places. Because service is not expected to change within Loves Park and Machesney Park, the contribution from each of these communities is expected to remain the same.

The remainder of the cost increase (\$53,000) would be the City of Rockford and RMTD's responsibility. Thus, the increase in revenue hours due to additional Saturday service results in an additional \$53,000 from the City of Rockford to provide this service.

Most recent changes or improvements to the RMTD system focus on Rockford's east side. The most notable is the addition of the East Side Transfer Center. Two new routes, Route 18 Bell School and Route 19 CherryVale Express are in the preferred alternative. Both transfer at the East Side Transfer Center and neither connects to the Downtown Transfer Center.

**Figure 11-4** shows the concentration of racial minorities in the RMTD service area. This analysis has been done by determining what percentage of the population at the Census Tract level is Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and other Pacific Islander. These groups combined make up 23.8 percent of the City of Rockford's population. The highlighted tracts have a combined minority percentage that is greater than 23.8 percent of the total population for that Tract. As shown, the racial minorities in Rockford are concentrated in the downtown area and radiate out to the north, west and south. **Figure 11-5** shows the concentrations of Hispanic or Latino population. This analysis was conducted in the same manner as the racial minority analysis. Rockford's Hispanic or Latino population is concentrated more in the west and south parts of the city, extending north from the Ulysses S. Grant Memorial Highway.

The preferred alternative routes are shown on **Figures 11-4** and **11-5** with the new routes specifically noted. As shown the new routing is not in a high density minority area nor is the East Side Transfer Center. The purpose of the East Side Transfer Center was to accommodate growth on Rockford's east side and to facilitate regional connections. The recently added Belvidere Route is an example of this. The East Side Transit Center and the new routes have no negative impacts on the minority community, but open up more parts of the community to all residents, not just those living in minority areas. Some efficiency improvements proposed to the existing service will make routes more convenient for those in minority areas such as service twice an hour to the Walmart near Central Avenue and Riverside Drive. Under the preferred alternative, Route 3 and Route 6 will serve this shopping destination, rather than just Route 3 under the existing routing.





Figure 11-4 – Minority Populations

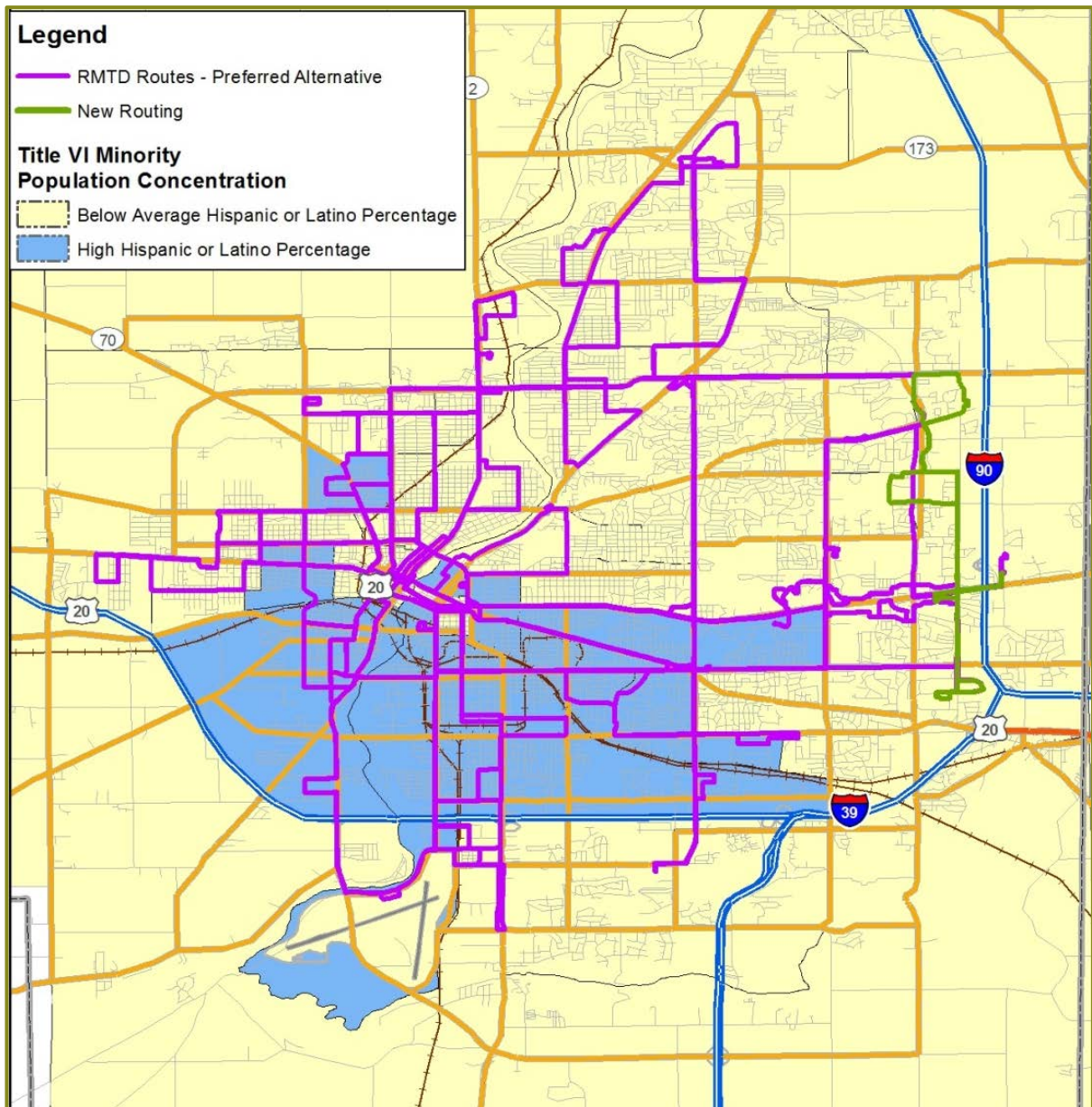
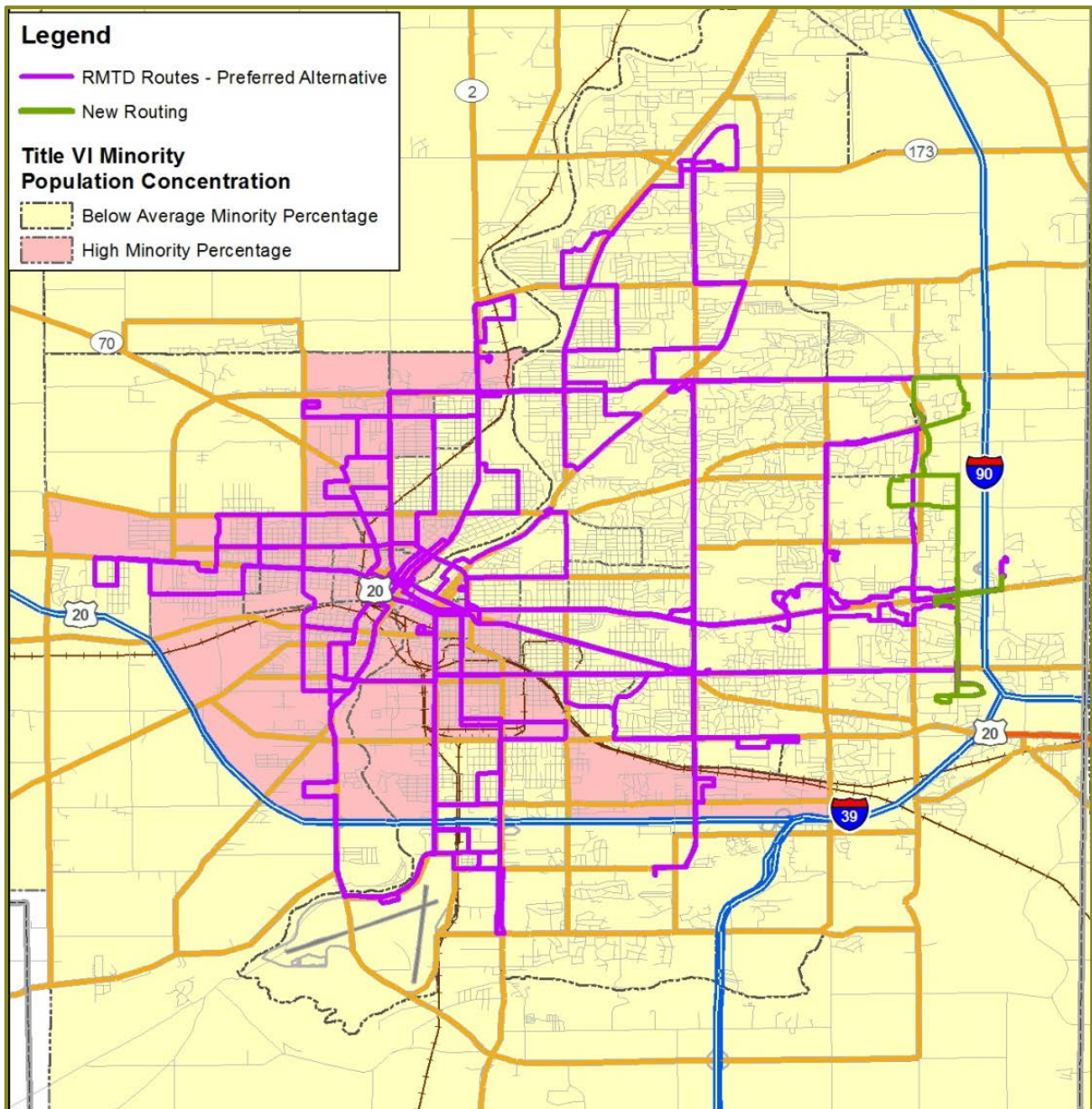




Figure 11-5 – Hispanic or Latino Population







## Shelters

The study team assumed RMTD would consider locating a bus shelter where there were more than 40 weekday boardings. Using data collected through their boarding and alighting counts, the study team identified the following locations by route for potential shelter locations.

- Route 1: Concord Commons;
- Route 2: Auburn High School and School Street at Jilson Avenue;
- Route 3: Halstead Road and Central Avenue; and,
- Route 11: Morsay Drive and Lynmar Court.

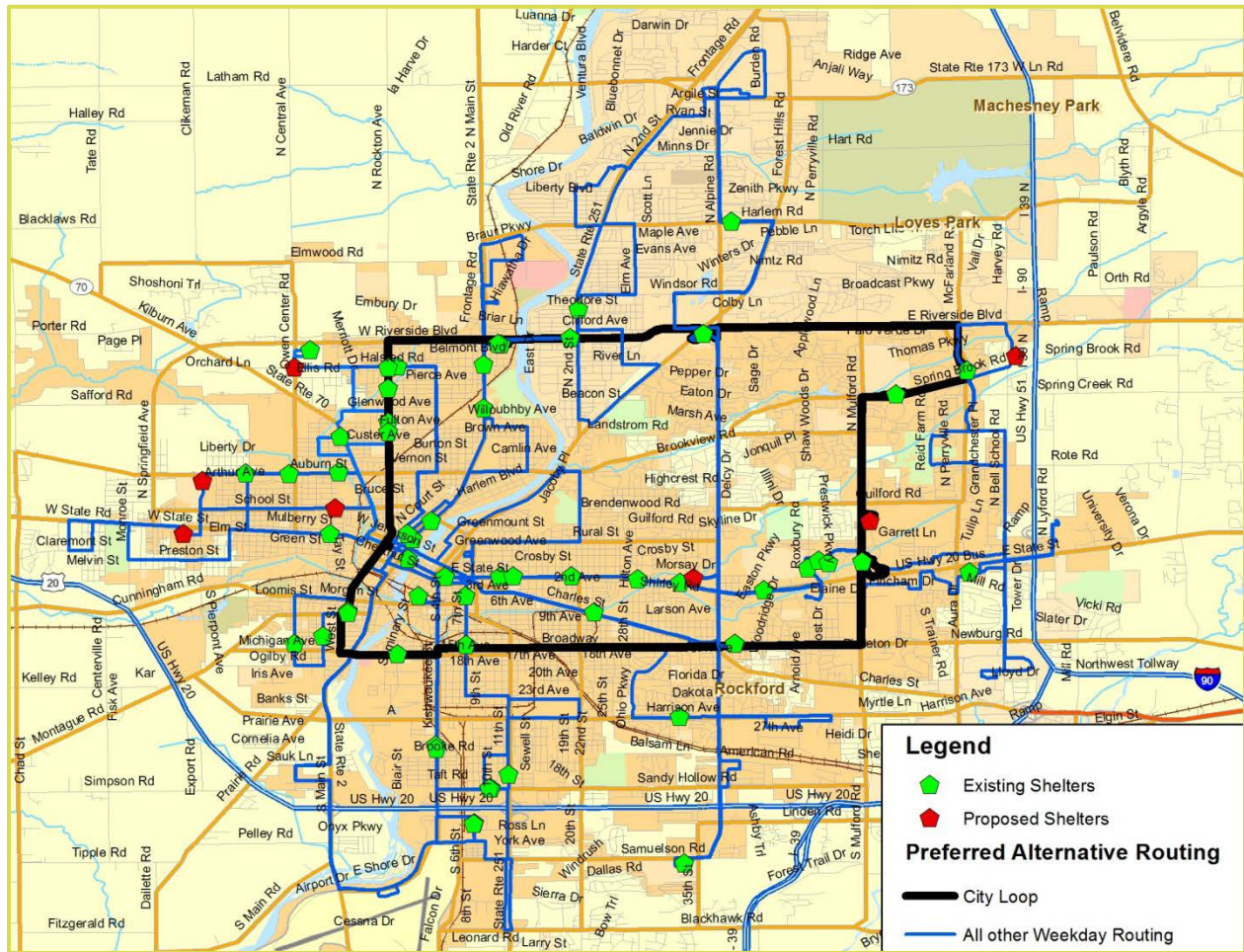
All other locations with more than 40 weekday daily boardings currently have a shelter.

Other logical locations for shelters are where Routes 16 and 17 intersect with other routes in the system. As shown in **Figure 11-6**, these locations currently have shelters. The next most logical location is at healthcare facilities. New healthcare facilities include the VA Clinic on Featherstone and the new cancer facility on Bell School Road. Thus, RMTD could install new shelters at the VA Clinic along Routes 16 and 17 and at the new cancer facility served by Route 18 Bell School. A larger version of Figure 11-6 can be found in **Appendix 9**.





Figure 11-6 – Existing and Recommended Shelters





## 12. IMPLEMENTATION

This section of the report has all the components necessary to implement the preferred alternative.

### Routes and Coverage

The new routing is very similar to the existing routing with the addition of two new daytime routes, Route 18 – Bell School and Route 19 – CherryVale Express. Also a new addition since the inception of the study is the currently operating Route 24 to Belvidere. In terms of geographic coverage, it remains the same with a slight increase in coverage to the east with the new East Side Transfer Center. The new weekday routing is shown in **Figure 12-1**; weekday night routing in **Figure 12-2**; and Sunday routing in **Figure 12-3**. The weekday routes are:

- Route 1 West State
- Route 2 School Street
- Route 3 Huffman
- Route 4 North Main
- Route 5 Clifton
- Route 6 Kilburn
- Route 7 South Main
- Route 11 East State
- Route 12 Charles
- Route 13 Rural
- Route 14 7th Street
- Route 15 Kishwaukee
- Route 16/17 City Loop
- Route 18 Bell School
- Route 19 CherryVale Express
- Route 20 Alpine
- Route 22 North 2nd Street
- Route 24 Belvidere Fixed Route

The weeknight routes remain basically the same as well, and they are:

- 31 Auburn/Rockton
- 32 East State
- 33 West State/Clifton
- 34 Harrison/Alpine
- 35 Kishwaukee/7th Street
- 36 Perryville/Alpine





Figure 12-1 – Monday-Saturday Daytime Proposed System Map

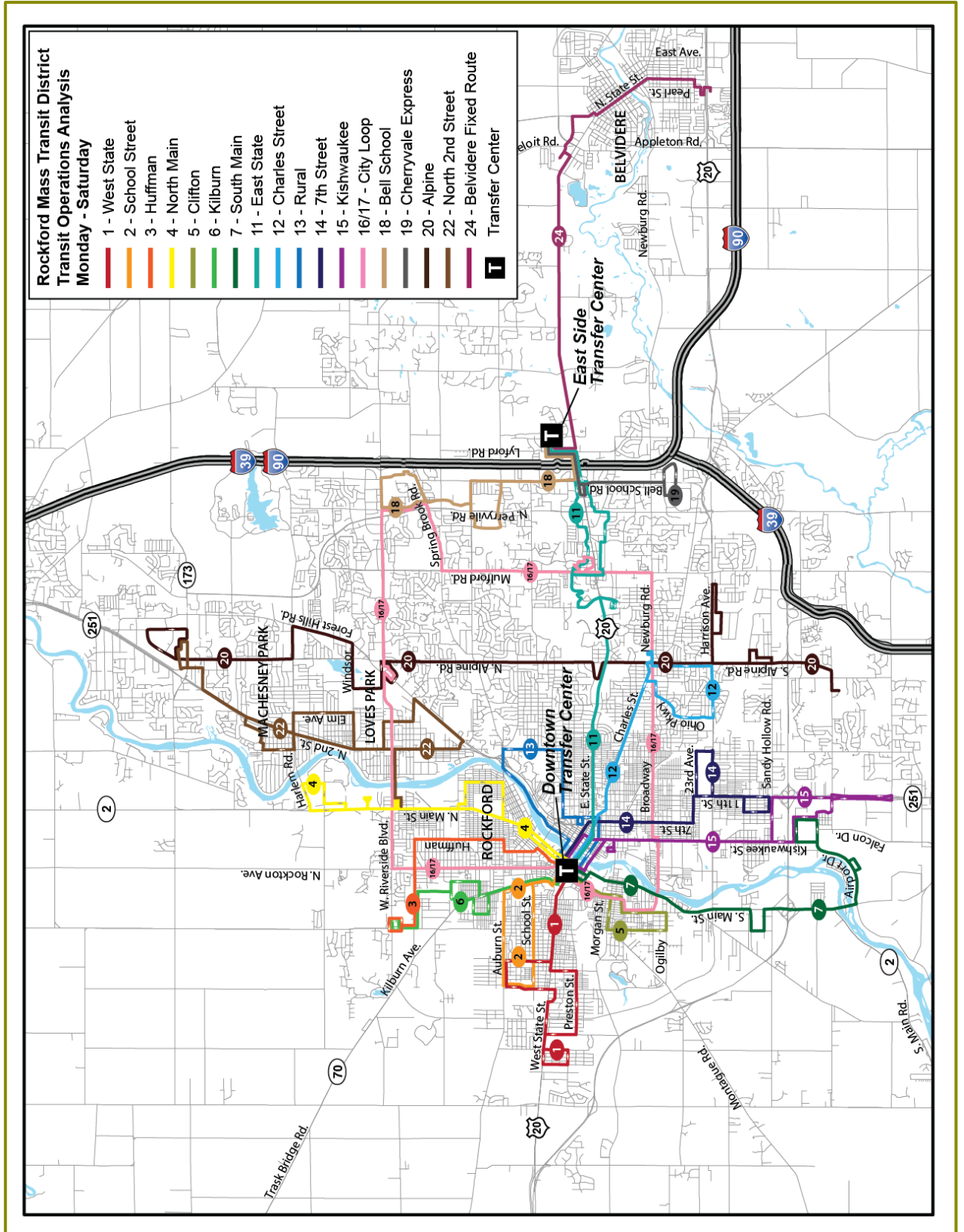




Figure 12-2 – Weeknight Proposed System Map

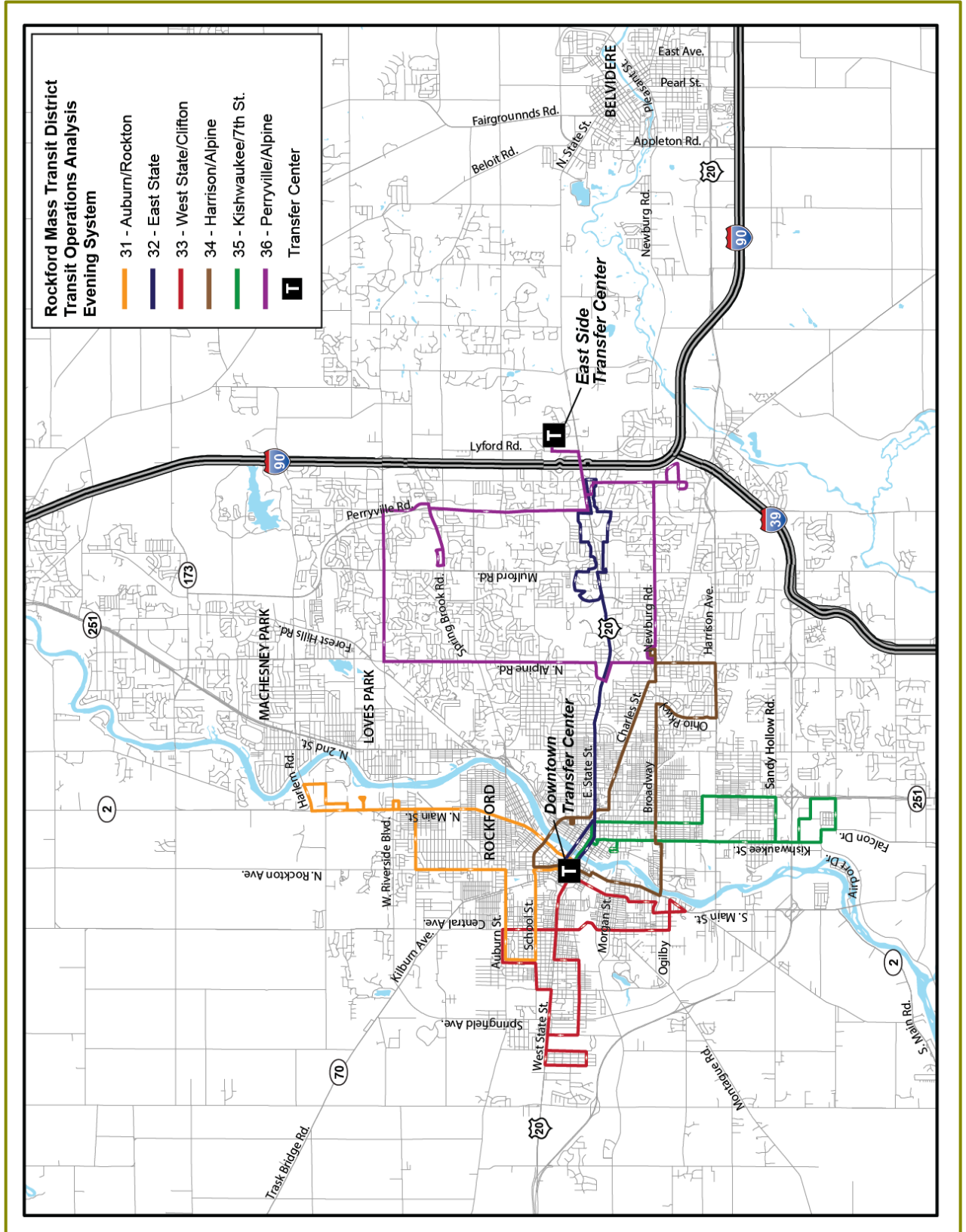
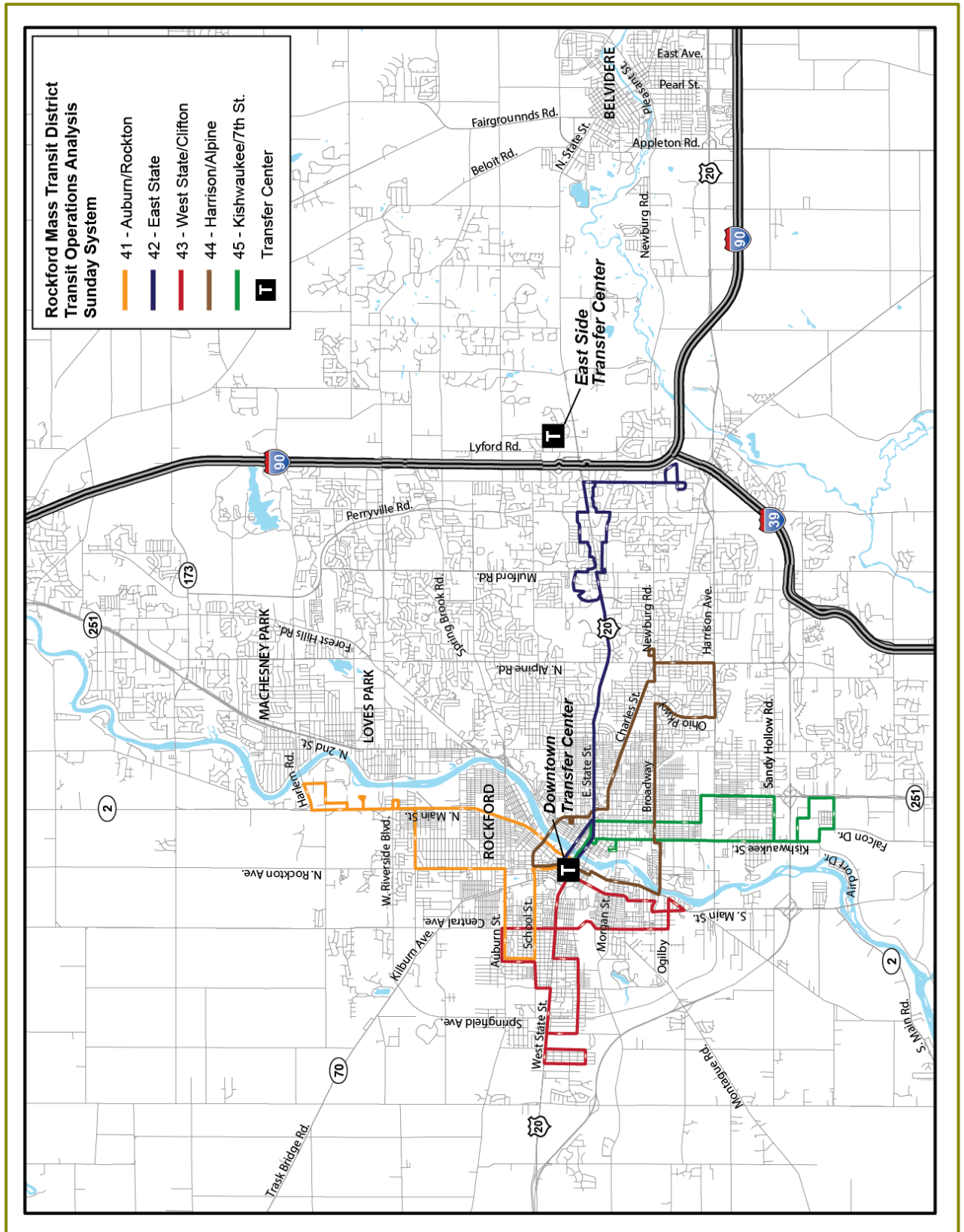




Figure 12-3 – Sunday Proposed System Map





The existing Sunday routes are also being carried forward:

- 41 Auburn/Rockton
- 42 East State
- 43 west State/Clifton
- 44 Harrison/Alpine
- 45 Kishwaukee/7th Street

Please refer to **Appendix 7** for detailed service maps and turn-by-turn routing instructions.

## Route Schedules

A run cut was developed for the preferred alternative and was used to develop detailed operating schedules and the operating cost estimates detailed in Task 4 of this report. Detailed operating schedules for weekdays, Saturdays, weekday nights, and Sundays are shown in **Appendix 10**.

## Capital and Operating Budgets

**Table 12-1** shows a five-year summary of capital and operating funds needed for the preferred alternative. The study team has calculated the operating budget for the preferred alternative in FY 2014 based on revenue service hours which the run cuts generated. Run cut paddles are available from RMTD, as noted in **Appendix 11**. The study team assumed this will be the service in place for the next five years and applied an annual inflation factor of four percent. In terms of capital expenses, the preferred alternative does not require any additional buses, so the study team has not included any capital funding for additional vehicles. However, the study team has recommended eliminating all flag stops and this may require installation of additional bus stop signs. Capital expenses of \$37,500 have been included in FY 2014 to cover installation of up to 250 additional signs at a cost of \$150 per sign.

**Table 12-1 – Preferred Alternative Five-year Capital and Operating Budget**

Operating Budget							
	Existing	Proposed FY 2014	Proposed FY 2015	Proposed FY 2016	Proposed FY 2017	Proposed FY 2018	Proposed FY 2019
State of Illinois Contribution	\$7,852,000	\$7,944,000	\$8,261,760	\$8,592,230	\$8,935,920	\$9,293,356	\$9,665,091
Loves Park Contribution	\$228,725	\$228,725	\$237,874	\$247,389	\$257,284	\$267,576	\$278,279
Machesney Park Contribution	\$113,987	\$113,987	\$118,546	\$123,288	\$128,220	\$133,348	\$138,682
Rockford Contribution	\$3,884,288	\$3,934,288	\$4,091,660	\$4,255,326	\$4,425,539	\$4,602,561	\$4,786,663
<b>Total System Cost</b>	<b>\$12,079,000</b>	<b>\$12,221,000</b>	<b>\$12,709,840</b>	<b>\$13,218,233</b>	<b>\$13,746,963</b>	<b>\$14,296,841</b>	<b>\$14,868,715</b>
Expected cost per revenue hour	\$127.92	\$127.92	\$133.03	\$138.35	\$143.89	\$149.64	\$155.63
Capital Budget							
Additional Bus Stop Signs	N/A	\$37,500					





## Service Expansion/Improvement Options

The service expansion and improvement options below are targeted at those using RMTD for work trips. These improvements could be made in the future as funding permits. Improving the service for work trips also improves it for those using the service for shopping, going to medical appointments, and accessing local educational facilities.

### Increased Weekday Service Span

Assuming RMTD has achieved the level of local coverage desired, RMTD would then improve the service span by expanding the weekday daytime service, routing this service to 11:15 p.m., and removing nighttime routes. This would drastically improve the experience for late-night shift workers and make later evening errands and recreational trips possible.

### Increased Frequencies

Improving frequencies is another improvement that could be implemented once complete geographical coverage of the city is achieved. Key routes for frequency improvements would be Routes 1, 6, 14, and 15. These changes would create two pulses within the system: a 30-minute pulse for the heavy ridership routes and a larger 60-minute pulse including all routes within the system.

### Additional Express Service

Rockford's development pattern over the last 50 years has included an outward march of residential and commercial development to Rockford's north and east sides. Extending an existing express route and implementing two new express routes would provide fast trips for choice riders living in Rockford's suburbs. The key to serving these riders is the trip's speed, so traffic-signal priority may be an important part of these services. Another improvement may be in-vehicle amenities like Wi-Fi, tabletops for laptops, and electrical outlets.

The study team, therefore, recommends RMTD do the following:

- Institute three trips in each peak direction for Monday through Friday morning and afternoon peak periods on the new Route 11X East State Express;
- Extend existing Route 22X to IL 173 for Monday through Friday morning and afternoon peak periods and add three trips in each peak direction into downtown Rockford; and
- Institute three trips in each peak direction for Monday through Friday morning and afternoon peak periods on the new Route 26X Winnebago Express between Winnebago and downtown Rockford. From Winnebago, routing would include Elida Street and US 20 (West State Street). In downtown Rockford, buses on this route would operate east on West State Street, north on South 6th Street, and west on Jefferson Street before ending at the Downtown Transfer Center.

### Saturday Service Improvements

As with weekday service, RMTD could extend Saturday daytime service from 6:15 a.m. to 11:15 p.m., resulting in Saturday routes mirroring the nighttime service span of Monday through Friday routes. RMTD could also increase frequencies to 30 minute intervals on Routes 1, 6, 14, and 15 to make them consistent with Monday to Friday service frequencies.







### New Regional Routes

Regional routes would allow Rockford residents to connect to the area's other cities. RMTD could implement a Route 25X Beloit-Machesney-East Side Transfer Center as a 60-minute frequency, all-day route connecting the SMTD system in Beloit to job opportunities in Machesney Park and to other RMTD routes at the East Side Transfer Center. Starting in Beloit, routing could include IL 251 (North 2nd Street), IL 173, I-90, Riverside Drive, and Lyford Road. RMTD could implement regional routes in the future as funding permits.

### Sampling Plan

**Appendix 12** contains a sampling plan analysis that verifies the continued validity of RMTD's March 2001 Sampling Plan. The sampling plan continues to meet and exceed the FTA's minimum levels of confidence (95%) and is less intensive than the minimum recommended FTA procedure.

