Draft

Summary Report

Commuter Bus Feasibility Study



Prepared by:

URS

and

Connetics Transportation Group

July 30, 2009


RED ROCK
CORRIDOR

1. Introduction

One of the short-term strategies recommended in the 2007 *Red Rock Corridor Alternatives Analysis* is to build a stronger transit base in the corridor by expanding bus service, increasing bus frequency and providing additional park-and-ride facilities. In October 2008, the Red Rock Corridor Commission began the *Commuter Bus Feasibility Study* to evaluate options for adding/expanding bus service and park-and-ride facilities along the Red Rock Corridor from Lower Afton Road in St Paul, Newport, Cottage Grove, Hastings, Prairie Island Indian Community and Red Wing to both downtown St. Paul and Minneapolis in a manner that supports the Commission's long-range vision for commuter rail service in the corridor. The project scope had four parts:

- Assess travel needs within the corridor
- Develop operating concepts to serve travel needs
- Evaluate operating concepts
- Develop recommended service plan with the following components:
  - Service delivery
  - Financial plan
  - Implementation plan

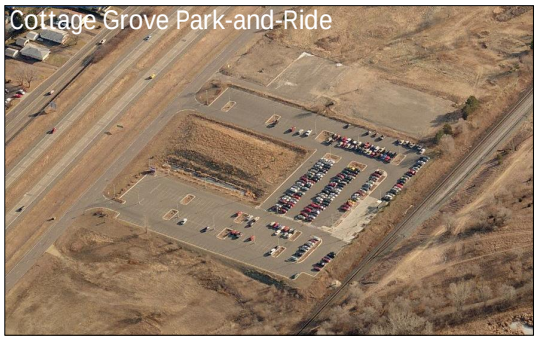
Over the course of the Study, six Technical Advisory Committee (TAC) meetings consisting of representatives from Corridor Counties and Cities, the Prairie Island Indian Community, the Metropolitan Council, Metro Transit and the Minnesota Department of Transportation (Mn/DOT) were held to develop and review potential operating alignments and segments. Initially, four scenarios were created. The first three only traveled as far as Hastings with variations in service span and intermediate stops. The fourth scenario was the longest, bringing service further south to Prairie Island Indian Community and Red Wing.

Ultimately, the stakeholders selected a modified version of the second scenario. This version provides eight daily trips (four in the morning and four in the afternoon) between Hastings and Minneapolis and six daily trips (three in the morning and three in the afternoon) between Hastings and St. Paul. This scenario was the most direct with no deviations off of TH 61. Projected ridership is 200 riders per day on the Minneapolis route and 160 riders per day on the St. Paul route. Annual ridership projections for the two routes are 91,800 passenger trips.

A service implementation plan has been developed that addresses management and oversight, fare policy and funding, marketing and branding, procurement, facilities development, and implementation schedule. This *Summary Report* presents the salient

points of the *Commuter Bus Feasibility Study;* details of the technical analysis completed for the Study are documented in Technical Memorandums 1 through 4, provided under separate cover.

1.1 Existing Corridor Conditions


Cottage Grove Park-and-Ride

- The Corridor is served by three transit routes. Metro Transit Routes 361 and 365 provide express service to downtown St. Paul and Minneapolis, respectively. Route 364 through the Metropolitan Transportation Services also serves downtown St. Paul via St. Paul Park and Newport.
- There are two existing park-and-ride lots along the Corridor. Access to the Cottage Grove park-and-ride lot is through the west TH 61 frontage road south of the 80th Street interchange. It has 490 parking spaces and is served by Routes 361 and 365. The Lower Afton park-and-ride is located at the southeast corner of Lower Afton Road and TH 61. It has 110 parking spaces and is currently over capacity.

1.2 Existing Transit Needs

Table 1 presents the range of existing potential transit ridership for the Red Rock Corridor using 2006 Longitudinal Employer-Household Dynamics (LEHD) data and a range of mode split values from the Northstar commuter coach service, Hiawatha LRT line, and Metro Transit's 2008 park-and-ride survey.

Table 1. 2006 Range of Potential Ridership by Origin[1]

Origin	Daily Transit-Trips to/from Downtowns					
	Low		Medium		High	
	Minneapolis	St. Paul	Minneapolis	St. Paul	Minneapolis	St. Paul
Lower Afton Road	180	100	220	140	240	220
Newport	140	60	160	80	180	120
St. Paul Park	80	60	100	80	120	120
Cottage Grove	400	200	460	300	520	440

[1] Estimated 2006 ridership by origin and destination is based on 2006 Longitudinal Employer-Household Dynamics data.

Origin	Daily Transit-Trips to/from Downtowns					
	Low		Medium		High	
	Minneapolis	St. Paul	Minneapolis	St. Paul	Minneapolis	St. Paul
Hastings	160	80	180	120	220	160
Prairie Island	20	20	20	20	20	20
Red Wing	40	0	40	0	40	20
Total	1,000	500	1,160	720	1,320	1,080

1.3 Case Studies

The Case Studies presented select characteristics of existing commuter bus services in peer U.S. cities to help guide the *Feasibility Study*. Highlights of lessons learned are:

- Define appropriate fare structure to encourage ridership.
- Design routes and locate park-and-ride facilities to optimize travel time.
- Provide direct service to multiple locations to optimize ridership.
- Operate buses from park-and-ride facilities where commuter rail stations will be located to maximize capital investment along with training patrons to use the facility in the interim, with the long-term focus of commuter rail service.

1.4 Alternatives Considered

Four scenarios were considered for proposed commuter bus service in the Corridor. Each of the four scenarios include a new park-and-ride facility in Newport (to be served by Route 364) to provide capacity relief for the Lower Afton Road park-and-ride and a new park-and-ride facility at the Hastings Depot. Table 2 summarizes select characteristics of each scenario.

Table 2. Description of Operating Scenarios

Scenario Description	Bus Trips per Day	Fleet Requirement: Peak [Total]	Estimated Gross Additional Ridership (Transit Trips)[2, 3]	Capital Cost:[4] Bus Purchase/ [Bus Leasing]	O&M Cost:[4] Bus Purchase/ [Bus Leasing]
1: Extension of Routes 361 and 365 to Hastings	Minneapolis: 10 St. Paul: 6	7 [9]	Minneapolis: 160/day[5] St. Paul: 80/day Total Annual: 61,200 Net Annual: 35,700	$8.38 million/ [$1.45 million]	$650,000 - $850,000 [$1,100,000 - $1,325,000]

2 Total Daily Transit Trips x 255 weekdays per year on average.

3 Based on Metro Transit's 2008 park-and-ride survey, which indicated that approximately 50 vehicles parked at the Lower Afton and Cottage Grove facilities had license plates originating south of Cottage Grove including Hastings and points south.

4 Year 2009 dollars.

5 The new bus trips from Hastings will have longer travel times relative to other scenarios due to the route deviation and stop in Cottage Grove.

Scenario Description	Bus Trips per Day	Fleet Requirement: Peak [Total]	Estimated Gross Additional Ridership (Transit Trips)[2, 3]	Capital Cost:[4] Bus Purchase/ [Bus Leasing]	O&M Cost:[4] Bus Purchase/ [Bus Leasing]
2: Introduce new commuter coach service to/from Hastings	Minneapolis: 10 St. Paul: 6	8 [10]	Minneapolis: 220/day[6] St. Paul: 160/day Total Annual: 96,900 Net Annual: 71,400	$11.40 million [$1.86 million]	$600,000 - $850,000 [$1,025,000- $1,375,000]
3: Scenario 2 plus midday service	Minneapolis: 12 St. Paul: 8	8 [10]	Minneapolis: 250/day[7] St. Paul: 200/day Total Annual: 114,750 Net Annual: 89,250	$11.59 million [$2.05 million]	$825,000 - $1,000,000 [$1,375,000- $1,550,000]
4: Scenario 3 plus service to Prairie Island Indian Community and/or Red Wing	Minneapolis: 12 St. Paul: 8	8 [10]	Minneapolis: 290/day[8] St. Paul: 220/day Total Annual: 130,050 Net Annual: 104,550	$12.28 million [$2.74 million]	$975,000 - $1,225,000 [$1,650,000 - $1,750,000]

1.5 Evaluation of Alternatives

Each of the four service plan scenarios were evaluated using the following criteria and for options with bus purchase and with bus leasing.

- O&M Cost Effectiveness
  - Cost per Passenger Trip
  - Cost per In-Service Hour
- Ridership Effectiveness
  - Riders per Bus-Trip
  - Riders per Bus Hour
- Annualized Cost per Passenger Trip
- Annual Operating Subsidy Required.

1.6 Recommended Scenario

Table 3 presents results for each effectiveness measure as well as a comprehensive ranking. The ranking system is based on a four-point system, with 1 being given to the highest-rated scenario for a specific measure and 4 to the lowest-rated scenario.

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6 Scenario 2 ridership estimate assumes medium-range estimate because of added connectivity via the future Central Corridor LRT line, scheduled to begin revenue service in 2014.

7 Scenario 3 ridership estimate assumes the midpoint between medium- and high-range estimates because of added connectivity provided by the future Central Corridor LRT line, scheduled to begin revenue service in 2014 and midday service.

8 Scenario 4 ridership is based on Scenario 3 plus potential ridership from the Prairie Island Indian Community and Red Wing.

- Scenario 2 is the recommended operating scenario. Discuss implementation of Scenarios 3 and/or 4 within the context of broader Corridor policies.
- Explore bus leasing for the initial introduction of commuter bus service in this corridor to reduce initial capital outlay; test service and facilitate service adjustments; and avoid long lead times typically associated with bus procurement.
- Develop Alternate Scenario 2 that reduces the number of trips between Hastings and Minneapolis and identify its potential operating efficiencies, summarized as follows:
  - Fleet Requirement – Seven peak/nine total from eight peak/10 total
  - Annual In-Service Hours – Reduced from 4,080 to 3,500
  - Potential Ridership Reduced – From 220 to 200 transit trips per day
  - Annual O&M Cost –Annual cost savings of $75,000 to $100,000 with bus purchase; $150,000 with bus leasing.
  - Annual Operating Subsidy – Potential reduction of $75,000 with bus purchase; just under $200,000 with bus leasing.

Table 3. Comprehensive Ranking of Scenarios

Effectiveness Measure	Scenarios With Bus Purchase				Scenarios With Bus Leasing			
	1	2	3	4	1	2	3	4
Cost per Passenger Trip	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Cost per In-Service Hour	3rd	4th	1st	2nd	3rd	4th	2nd	1st
Riders per Trip	4th	2nd	3rd	1st	4th	2nd	3rd	1st
Riders per In-Service Hour	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Annual Cost per Passenger Trip (O&M + Capital)	4th	3rd	2nd	1st	4th	1st	2nd	3rd
Annual Subsidy	2nd	1st	3rd	4th	2nd	1st	3rd	4th
Comprehensive Score	4th	1st	2nd	3rd	4th	1st	2nd	3rd

2. Implementation Plan

Based on the recommendation to proceed with Alternate Scenario 2, following is a summary of the proposed implementation plan for the Red Rock Corridor commuter coach service:

2.1 Management and Oversight

- Potential responsible agents:
  - *Metropolitan Council (Metro Transit)* – Metro Transit has in-house technical expertise to manage daily operations. There may be efficiencies provided when integrating the proposed service plan into its existing operations. However, its long-range plans and current funding commitments do not identify implementing the expansion of express bus service and construction of a new park-and-ride in Hastings between 2013 and 2030. If this option is pursued, then continued advocacy for and coordination with the Metropolitan Council are recommended on extending Routes 361 and 365 to Hastings, although this option will not guarantee that service will be expanded within the next 12 to 18 months, which is a goal of this Study.
  - *Red Rock Corridor Commission* – The Red Rock Corridor Commission ("Corridor Commission") could be the responsible agent and take the lead in implementing the preferred expanded service scenario. The Corridor Commission would be responsible for obtaining funding for both the capital and operating expenses, is similar to the existing arrangement for Route 888 commuter coach service (Elk River) through the Northstar Corridor Development Authority's contract with Laidlaw. Under this option, the Corridor Commission will need to determine if the preferred operating service scenario will be implemented for a short term period as a demonstration project (typically from 1 to 3 years) or as a permanent service that will need to be funded on an annual basis.

The following information assumes that the Corridor Commission could be the responsible agent and take the lead in implementing the preferred expanded service scenario.

Daily Operations Management

- Funnel coordination of all functions through one designated governmental entity.
- Day-to-day staff time would be most intense before service start-up, tapering down to 30 to 50 percent afterwards.

- Pre-start-up responsibilities: service contract development and procurement; vehicle and equipment procurement; facilities development; and preparation of a marketing plan. Post-start-up: service contract management service monitoring. Some functions may be provided by the contracted service provider, depending on the provisions in the service contract.

Service Contracting and Staffing

- Recommended contracting the service in the short-term to minimize initial capital outlay and desire to implement service within 12 to 18 months.
- Staffing requirements to be part of service contract and will include these functions: Administrative (e.g. Accounting, Human Resources); Operations (e.g. operators and supervisors); and Maintenance (e.g. mechanics).

2.2 Fare Policy and Funding

Fare Policy

- Proposed one-way cash fare: Hastings to St. Paul - $3.25; Hastings to Minneapolis - $4.75.[9]
- Considerations:
  - *Fare reciprocity* with other regional providers to ensure full system integration.
  - *Cash handling* using the regionally-approved electronic farebox.

[9] These proposed fares will be reviewed as part of the next steps towards service implementation, and will be done to ensure that proposed fares can be properly accommodated within the regional fare system.

Potential Funding Sources

The subsidy calculations in this *Study* assume that discounted fares result in a net collection of 70 percent of the defined cash fares, resulting in a net subsidy requirement of $788,100. To cover this gap, Table 4 the following potential funding sources are identified for consideration:

Table 4. Summary of Potential Funding Sources

Potential Funding Source	Can be Used for:		Funding Source	Comments
	Capital?	Operating?		
CMAQ	Yes	Yes	Federal, with local match requirement	Next opportunity to apply is in 2011 for project implementation in 2015 or 2016. Funding may be used for demonstration projects for up to three years in duration.
CTIB	See Comments.		Local (5 Twin Cities Counties)	Limited funds are available. Washington County has some flexibility to use its share of the funds for the next three years.
Mn/DOT Bridge Replacement Funds	See Comments.		State	Requires direction from the State Legislature or special appropriations as part of the next bonding bill.
Greater Minnesota Transit Grants	Yes	Yes	Federal (formula funds) and State	Cities and counties outside the seven-county Twin Cities metropolitan area are eligible, such as the City of Red Wing. Includes FTA Section 5311 funds.
Local Government General Funds	See Comments.		Local	Potential funds include TIF and bonds, whose uses vary.
Regional Transit Capital Communities	Yes	Yes	Local	Formerly known as the Transit Taxing District. Joining the RTCC (i.e. the City of Hastings) does not guarantee transit service or facilities through this tax levy.
Chapter 152 Statewide Transit Enhancement Funds	Yes	Yes	State	Mn/DOT's *2009-2028 Statewide Highway Investment Plan* includes $50 million for statewide transit facility improvements as specified in 2008 Chapter 152 legislation. Mn/DOT will issue solicitations in August 2009. Applications due in September 2009. Maximum individual award is $6 million.[10]
Public Transportation on Indian Reservations (5311(c))	Yes	Yes	Federal	Created through SAFETEA-LU and funded as a takedown under Section 5311 program. Based upon an annual national competitive selection process by FTA.[11]

[10] Source: *Minnesota Statewide Transportation Plan 2009-2028*, Minnesota Department of Transportation.

[11] Source: http://www.fta.dot.gov/printer_friendly/grands_financing_3553.html.

2.3 Procurement Process

Prior to the start-up of service, the Corridor Commission will need to enter into a procurement process for vehicles and equipment, and/or service:

Vehicle and Equipment Procurement

- *Considerations regarding vehicle purchase* –Lessens annual contract costs for O&M, but requires more capital outlay at project initiation. Requires more lead time for through competitive bid process that may delay service implementation. Entails long-term investment and commitment from the Corridor Commission. Should the service not meet ridership expectations, the Commission would be shouldered with nine transit coaches and no place to use them.
- *Service contract procurement* – Allow for ssufficient lead time to support pre-bid communications, evaluation, interviews, awards and actual project start-up upon selection.
- *Procurement process* – Initiating a vehicle, equipment, and/or service procurement process requires advance planning by the sponsoring governmental entity.

2.3 Other Implementation Considerations

Operations Plan Refinement

Refinement of Alternate Scenario 2 service plan is required prior to service implementation. Enhancements to the service plan will address schedule and running times, ridership forecasts, and financial assumptions. Updates should capture any refinements related to project definition (e.g. change in proposed service levels, travel times, fares).

Marketing Plan

Potential riders must be aware of the service and its advantages. Develop a marketing strategy to ensure widespread acknowledgement and acceptance of the service amongst users and non-users alike.

Facilities Development

Facilities will potentially require the most lead time out of all of the pre-startup activities for the project. The next step towards service implementation also needs to determine ownership and maintenance responsibility related to new facilities that include costs.

- *Hastings Depot Park-and-Ride* – The initial segment of the Red Rock bus service will originate at a newly developed park-and-ride facility in Hastings. The proposed site (owned by the City of Hastings) is situated along the west side of the Hastings Train Depot, located three blocks east of TH 61. Given the site's proximity to the existing railroad Corridor, this location is ideal for long-term park-and-ride investment. The parking area can transition from a bus-oriented operation to a commuter rail operation with minimal adjustments and cost outside of the initial outlay.
- *Downtown Minneapolis and St. Paul Facilities* – Coordinate existing and future downtown layover facilities and bus stops with Metro Transit (e.g Minnesota's Union Depot).
- *Lower Afton Road Park-and-Ride* – The current proposed service plan for Red Rock commuter bus service does not assume service a stop at this facility. A future stop here will require discussions with Metro Transit.
- *Maintenance Facility* – With bus leasing, vehicle maintenance should be included as part of any potential contractor's bid.

Service Monitoring Requirements

A service monitoring program is essential for the Corridor Commission to determine the project's long-term sustainability. Ultimately, this program will track daily, monthly and annual ridership and determine if the service is meeting the projected ridership goals.

Future Service Expansion

Other service scenarios were considered in this study that reflected more robust service (e.g. midday trips) and a route extension to the Prairie Island Indian Community and Red Wing. Evaluation of Scenarios 3 and 4 indicates that such service is not warranted at this time. Another potential transit market is the I-494 Corridor between Normandale Boulevard and the Mall of America/Minneapolis-St. Paul International Airport. The I-494 Corridor is outside the Red Rock Corridor, so it was not analyzed to the same degree as the four service plan scenarios. The service monitoring program described earlier in this section and documented customer requests should be used to gauge potential future expansion of Red Rock commuter bus service.

2.5 Implementation Schedule

Red Rock Corridor Commission as Responsible Agent

The process of selecting a contract service provider and completing pre-start-up service tasks cannot begin in earnest until key policy decisions are made by the Corridor Commission. To facilitate these decisions, a series of workshops are suggested as follows, with specific sub-topics for discussion:

- Workshop #1 – Management/Oversight
  - How will the service be funded?
  - Who will be the designated governmental entity responsible for day-to-day operations, including the selection of a Project Manager?
  - Will the service be implemented for a short-term period as a demonstration project or as a permanent service that will require ongoing funding?
  - Are buses going to be purchased or part of a service contract?
  - What functions are to be contracted out vs. directly operated?
  - If any functions are to be directly operated, what are the local government staff requirements?
- Workshop #2 – Funding/Fare Policy
  - What are the established fares?
  - Will discounted fares be offered?
  - What reciprocal fare arrangements will be made with other regional service providers?
  - Where will additional funding be obtained to cover anticipated costs?
- Workshop #3 – Service/Equipment Procurement
  - What is the scope of services/equipment to be described in the RFP?
  - What start-up service tasks should be included in the scope?
  - What performance incentive clauses should be included?
  - What should be the method of payment?
  - What administrative requirements will be included?
  - What criteria shall be used for evaluating proposals?
  - What is the scheduled procurement process?
- Workshop #4 - Marketing
  - Who will be responsible for preparing a marketing plan?
  - What is the designated budget for marketing tasks?
  - Who will be responsible for implementing the marketing plan?

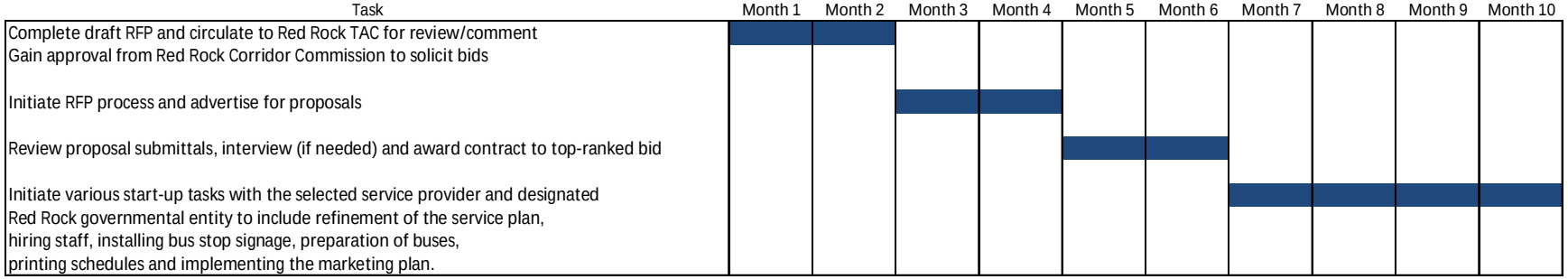
Figure 1 presents the anticipated time required for each start-up task, based on solidified funding commitments.

Metropolitan Council (Metro Transit) as Responsible Agent

If the Metropolitan Council (Metro Transit) is the responsible agent, a series of meetings will be required with the Corridor Commission to reach agreement on issues such as:

- Potential requirement of expanding the RTCC to include Hastings and any additional potential funding requirements for the service.
- Specific bus routing and schedules
- Schedule for constructing the Hastings park-and-ride lot
- Schedule for implementing bus service
- Marketing activities and responsibilities for those activities
- Ridership monitoring requirements and service performance standards.

Figure 1. Implementation Timeline for Option 2
(Red Rock Commission as the Responsible Agent, Contracting the Service)[12]



[12] This Study recommends solidifying funding commitments first before embarking on this implementation schedule.

Technical Memorandum #1:

TRANSIT NEEDS ASSESSMENT

Commuter Bus Feasibility Study



Prepared by:

URS

July 2009

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1. Introduction

The purpose of the memorandum is to estimate the range of current potential riders of a Red Rock Commuter Coach bus operating on Trunk Highway (TH) 61 and Interstate 94 (I-94) between downtown Minneapolis, downtown St. Paul and Red Wing, with potential, intermediate stops at the University of Minnesota, Snelling Avenue, the State Capitol, Lower Afton Road, Newport, St. Paul Park, Cottage Grove Hastings, the Prairie Island Indian Community and Red Wing. This memorandum supplements the ridership forecasts developed as part of the 2007 *Red Rock Corridor Alternatives Analysis* (AA). The potential range of transit ridership presented in this document is based on 2006 Longitudinal Employer-Household Dynamics (LEHD) data.

2. Existing Service in the Corridor

Currently, express bus service is provided in the Corridor by Routes 361, 364 and 365, to downtown St. Paul and downtown Minneapolis, respectively. Routes 361 and 365 serve the Cottage Grove and Lower Afton Road park-and-ride lots. Route 361 is more of a local route, stopping in Cottage Grove, Newport and St. Paul Park. In downtown St. Paul, Route 361 travels along Fifth and Sixth Streets picking up and dropping off passengers at all stops. In the morning, most Route 365 buses will stop upon request at the Heron Station for transfer to the University of Minnesota. In downtown Minneapolis, Route 365 travels along Sixth and Seventh Streets, picking up and dropping off passengers at all stops.

3. Methodology

Potential transit stations were divided in to two sub-groups: origin stations and destination stations. Origin stations are stations closer to where potential riders live who would then take the bus to their place of employment at a destination station. For the purpose of this analysis, origin catchment areas include Lower Afton Road, Newport, St. Paul Park, Cottage Grove, Hastings, Prairie Island, and Red Wing, while destination catchment areas are Downtown Minneapolis, University of Minnesota, Snelling Avenue, State Capitol Area, and downtown St. Paul. Additionally, potential ridership to Near Northeast Minneapolis, located just across the Mississippi River from downtown Minneapolis, is examined as a possible destination. However, this would likely not

require a separate transit stop, but an employment center easily accessible via transfer from downtown Minneapolis.

3.1. Potential Riders

To determine how many potential riders may use a commuter bus service, it is important to understand how many people currently commute from the areas around the origin stations to the destination stations. This analysis uses the 2006 LEHD data. This is the most current information that is available from the U.S. Census Bureau, and allows the ability to estimate the number of people who live in an origin area and work in a destination area.

To determine the origin catchment areas in the corridor, the existing transportation network was examined to determine if another transportation corridor would be more likely to attract a trip from the area to the downtown areas. **Figure 1** shows the origin catchment areas. As shown in **Figure 1**, the catchment areas further to the south are larger than those proximate to the downtowns. This is because the residents who live closer to the downtown areas have a wider variety of routes and competing transportation alternatives. Residents who live further from downtown have fewer transportation corridors to choose from to get to the downtowns. It is assumed that if they would drive past the station on their way to work that they should be included in the catchment area for each of the stations.

The destination catchment areas are much smaller than the origin catchment areas. They were based on employment concentrations and are generally walkable. The larger employment centers in the core of Minneapolis and St. Paul were broken into smaller parts to determine where within the large employment centers people are traveling. The employment core of Minneapolis was divided into downtown Minneapolis, University of Minnesota, and near Northeast Minneapolis. The St. Paul core area was divided into the State Capitol Area and downtown Saint Paul. The destination catchment areas generally have a radius of less than a half mile, which is considered a reasonable walking distance to rapid transit. The exception to this is the downtown Minneapolis catchment area. It is a larger geographical area than the catchment areas to more closely match the common

definition of downtown Minneapolis and due to a large volume of transfer potential within downtown.

Using geographic information systems (GIS), the catchment areas for each of the stations was determined. This was done at the Census block level. The LEHD data provided the number of people who live in one station catchment area and work in another. **Table 1** shows the number of people who live in the catchment area of an origin station and work in the catchment area of a destination station.

Table 1
Number of People who Live in the and Work in the Red Rock Corridor[1]

Residence by Catchment Area	Employment by Catchment Area					
	Downtown Minneapolis	University of Minnesota	Near Northeast Minneapolis	Snelling Avenue	State Capitol	Downtown St. Paul
Lower Afton Road	240	100	10	90	150	420
Newport	170	70	0	20	80	220
St. Paul Park	110	40	0	30	80	230
Cottage Grove	520	120	30	120	260	860
Hastings	270	70	10	50	120	330
Prairie Island Indian Community	10	10	0	0	0	10
Red Wing	50	10	0	0	10	30
Total	1,360	420	40	300	690	2,080

3.2. Commute Mode Share

In 2006, approximately 4,890 people who live in the corridor commuted to one of the potential destinations. However, this does not mean that all 4,890 people would switch to transit if it were available. In an attempt to determine how many of the commuters would use transit, a similar analysis of the using 2004 LEHD data was applied to the Northstar Corridor where existing commuter bus service exists. The Northstar Corridor is a commuter rail corridor with service starting in 2009. Several of the future commuter rail

[1] *Numbers may not sum due to rounding.*

stations and/or communities along the corridor have express bus service to downtown Minneapolis. The Northstar Corridor has bus service to four park-and-ride lots in Elk River, Ramsey, Anoka, and Coon Rapids. **Table 2** presents the results of this analysis of the Northstar Corridor.

Table 2
Northstar Corridor Bus Commuters to Downtown Minneapolis Using 2004 LEHD Data[2]

	Downtown Minneapolis	University of Minnesota	Near Northeast Minneapolis	Total Minneapolis Core
Coon Rapids	1,750	240	60	2,050
Anoka	270	30	20	330
Ramsey	350	70	30	450
Elk River	700	100	30	830
Total	3,080	440	130	3,660

The park-and-ride lot in Ramsey (served by Ramsey Star Express Route 856) provides nonstop service to downtown Minneapolis. The Northstar Commuter Coach (Route 888) from the Elk River park-and-ride lots stops at the Coon Rapids park-and-ride then continues directly to downtown Minneapolis. Metro Transit Route 851 provides service from park-and-ride lots in Anoka and Coon Rapids before continuing to downtown Minneapolis. In October of 2007, these three routes had a combined average daily unlinked trips of 1,630 unlinked trips. Assuming that every person who rode the bus to downtown in the morning rode the bus north in the evening, then on average 815 people commute using one of these three routes a day. Put another way, about 22.3 percent of those who live in the Northstar Corridor and work in downtown Minneapolis commute by bus. This is significantly higher than the average transit commute shed for the Twin Cities metro region, which is 4.5 percent.[3] However, it is comparable to the transit commute mode share for downtown Minneapolis workers of 25.1 percent.[4] The transit

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2 *Numbers may not sum due to rounding.*
3 *http://www.metrocouncil.org/planning/transportation/Audit2005/Chapter5.pdf.*
4 *http://www.metrocouncil.org/planning/transportation/CTPP2000/CTPP2000_Downtowns.pdf.*

commute mode share for downtown St. Paul workers is about half that of downtown Minneapolis at 12.8 percent.[3]

3.3 Red Rock Commute Mode Share

For the purpose of this analysis, three separate transit commute mode share values will be used to predict the potential range of transit riders in the corridor, described as follows:

- The **high mode share** assumes that the proposed Red Rock commuter bus service will have the same commute mode share as currently exists in the downtowns.
- The **medium mode share** assumes the transit mode share for those traveling to Minneapolis from the Red Rock Corridor will be the same as currently exists in the Northstar Corridor. For those traveling to St. Paul, the transit commute mode share was assumed to increase moderately from the current mode share in the Corridor.
- The **low mode share** uses the transit mode share assumes the existing transit commute mode to St. Paul and Minneapolis for the Routes 361 and 365, respectively.[5]

Table 3
Commute Mode Share Estimates for the Red Rock Commuter Coach Ridership

Commute Mode Share	High	Medium	Low
To St. Paul	12.8%	9.0%	5.9%
To Minneapolis	25.1%	22.3%	19.5%

Residents in the southern portion of the corridor have the option of driving further than utilizing the Hiawatha Light Rail Transit (LRT) to complete there commute. It is likely that due difference is the type of service provide that by LRT and commuter bus that some residents will choose to drive further to use the LRT. In an attempt to control for this, it was assumed that 20 percent of the residents who live in the Hastings, Prairie

[5] *This was determined by Metro Transit based on the 2004 LEHD data, 2006 park-and-ride data, and the number of bus trips for each route.*

Island, and Red Wing catchment area who work in Minneapolis that will use transit will choose to use the Hiawatha LRT instead of a commuter bus in the Red Rock Corridor.

4. Results

By applying the range of transit commute mode shares described in the previous section, we developed a range of estimates for the number of patrons of a commuter coach service within the Red Rock Corridor, presented in **Tables 4, 5,** and **6**. Based on this methodology, the range of potential transit patronage is from 1,080 to 1,700 trips per day in 2006. As a comparison, in April of 2008, the average daily trips on Routes 361 and 365 was 280 and 510, respectively.[6]

Based on the experience within the Northstar Corridor, the introduction of commuter coach service within the Red Rock Corridor is likely to increase transit ridership to the downtown cores. With the anticipated increase in traffic congestion on TH 61 in 2030[7], no significant capacity improvements to the corridor and likely increases in parking costs in the two downtown cores, a commuter coach service will provide commuters with an additional travel option.

An important factor that was not included in this analysis is transit fare. The October 2007 Northstar Commuter Coach ridership figures reflected different fares, depending on distance from downtown Minneapolis. The fare was $2.75 from the Anoka and Coon Rapids park-and-ride lots while the fare was $4.50 from the Elk River and Ramsey park-and-ride lots. In February 2008, the fare at the Ramsey park-and-ride lot was decreased to $2.75, resulting in an increase in average daily ridership by 33 percent for that month. (See **Figure 2**.)

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6 *Routes 361 and 365 are express routes between Cottage Grove and Lower Afton to downtown St. Paul and downtown Minneapolis, respectively. Source: Metro Transit.*

7 *Source: Metropolitan Council 2030 Transportation Policy Plan.*

Table 4
High Estimate of Red Rock Commuter Coach Trips[8]

Residence by Catchment Area	Employment by Catchment Area					
	Downtown Minneapolis	University of Minnesota	Near Northeast Minneapolis	Snelling Avenue	State Capitol	Downtown St. Paul
Lower Afton Road	120	50	0	20	40	110
Newport	90	40	0	10	20	60
St. Paul Park	60	20	0	10	20	60
Cottage Grove	260	60	10	30	70	220
Hastings	110	30	0	10	30	80
Prairie Island Indian Community	0	0	0	0	0	0
Red Wing	20	10	0	0	0	10
Total	650	200	20	80	180	530

Table 5
Medium Estimate of Red Rock Commuter Coach Trips[9]

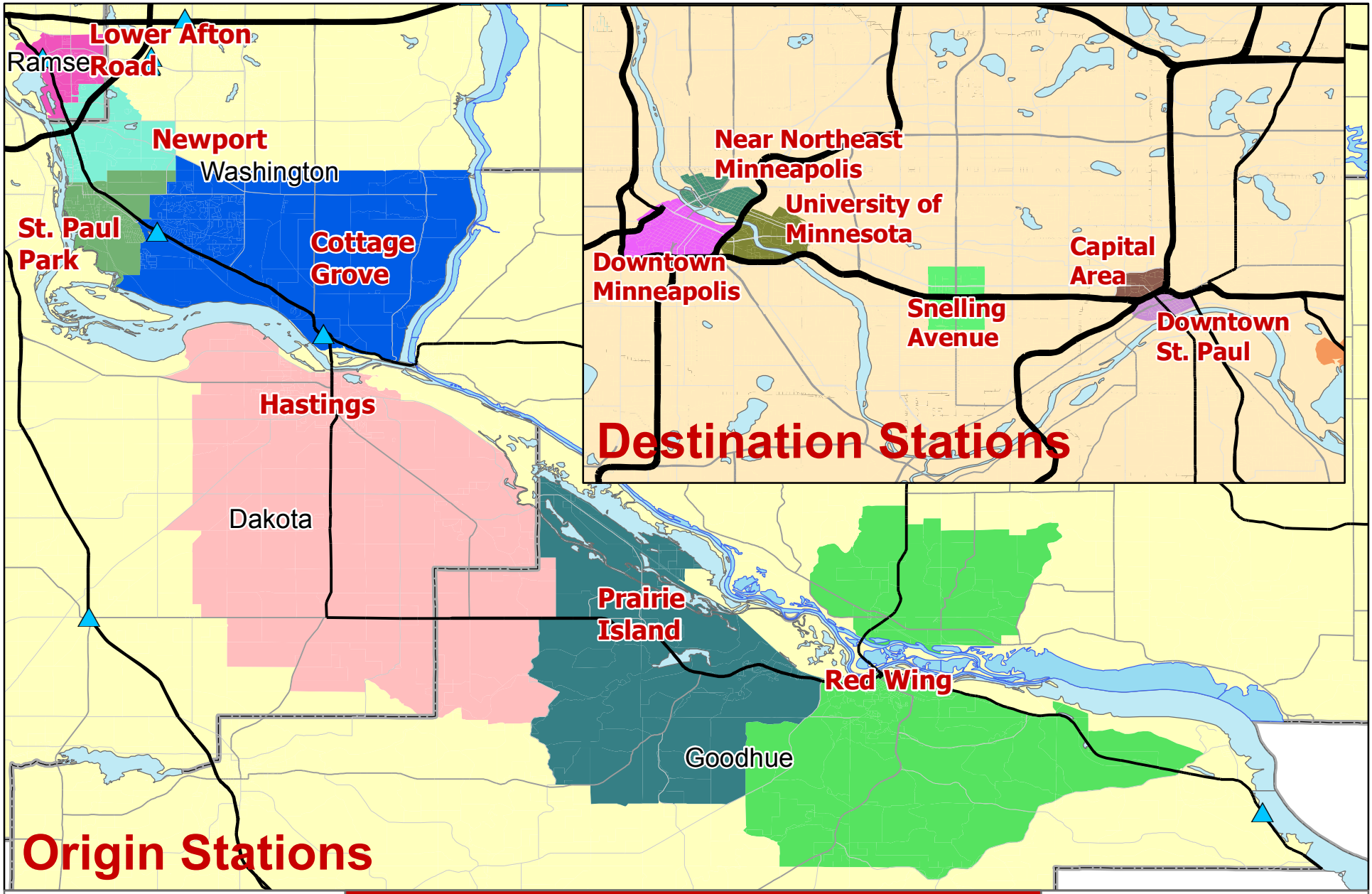
Residence by Catchment Area	Employment by Catchment Area					
	Downtown Minneapolis	University of Minnesota	Near Northeast Minneapolis	Snelling Avenue	State Capitol	Downtown St. Paul
Lower Afton Road	110	40	0	20	30	70
Newport	80	30	0	0	10	40
St. Paul Park	50	20	0	0	10	40
Cottage Grove	230	60	10	20	50	150
Hastings	90	20	0	10	20	60
Prairie Island Indian Community	0	0	0	0	0	0
Red Wing	20	10	0	0	0	0
Total	580	180	20	50	120	370

[8] *Numbers may not sum due to rounding.*
[9] *Numbers may not sum due to rounding.*

Table 6
Low Estimate of Red Rock Commuter Coach Trips[10]

Residence by Catchment Area	Employment by Catchment Area					
	Downtown Minneapolis	University of Minnesota	Near Northeast Minneapolis	Snelling Avenue	State Capitol	Downtown St. Paul
Lower Afton Road	90	40	0	10	20	50
Newport	70	30	0	0	10	30
St. Paul Park	40	10	0	0	10	30
Cottage Grove	200	50	10	10	30	100
Hastings	80	20	0	10	10	40
Prairie Island Indian Community	0	0	0	0	0	0
Red Wing	20	0	0	0	0	0
Total	510	160	20	40	80	250

[10] *Numbers may not sum due to rounding.*



URS

0 2.5 5 10 Miles

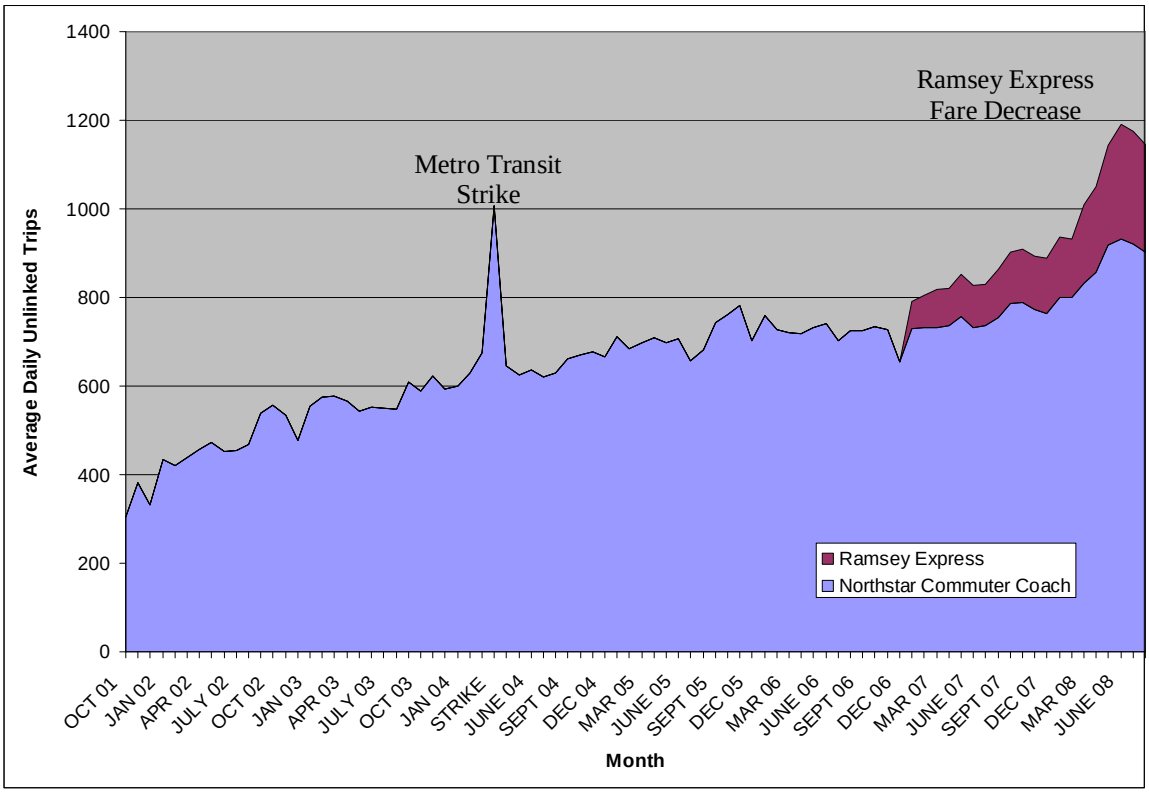
Red Rock Commuter Coach

Catchment Area for Stations

Source: Mn/DOT, ESRI, Metro GIS, and MN DNR

Figure 1

Figure 2
Average Daily Ridership in the Northstar Corridor[11]



[11] *Metro Transit does not report monthly average daily trips for individual routes. Therefore, this figure does not include Route 851. The spike in ridership in Spring 2004 during the Metro Transit strike reflects the increase in the number of riders who switched from Route 851 to the Northstar Commuter Coach during the strike.*

Technical Memorandum #2:

CASE STUDIES

Commuter Bus Feasibility Study



Prepared by:

URS

July 2009

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Introduction

With the slowing economy, rising gas prices and lengthening commutes, more and more communities around the country are relying on commuter buses to provide outer ring suburban and exurban residents with access to employment opportunities in the urban core[1]. The purpose of this technical memorandum is to present select characteristics of existing commuter bus services in peer U.S. cities to help guide the Red Rock Corridor Commuter Bus Feasibility Study in determining its preferred service plan as part of the first step in building transit ridership within the corridor. These characteristics include route length, ridership, cost, operating environment (e.g. regular lanes, High Occupancy Vehicle lanes (HOV), Bus Only Shoulders (BOS)) travel time, funding source, governance, and lessons learned during implementation. Following are a list of peer systems selected for the Red Rock Corridor Commuter Bus Feasibility Study and a summary description of each.

- Denver, CO – Front Range Express (FREX)
- Nashville, TN – Relax-and-Ride between Gallatin and Hendersonville and Murfreesburo
- Dallas, TX – Denton County Express
- Atlanta, GA – Xpress System
- Minneapolis, MN – Northstar Commuter Coach, Ramsey Star Express and Metro Transit Route 288.

[1] *Gordon, Peter, Bumsoo Lee, Harry W. Richardson, 2004. Travel Trends in U.S. Cities: Explaining the 2000 Census Commuting Results. Lusk Center for Real Estate, University of Southern California, Los Angeles, CA. Available a: http://www-rcf.usc.edu/~pgordon/pdf/commuting.pdf*

Denver, CO – FREX

Front Range Express (FREX) operates along the I-25 corridor connecting Colorado Springs and Denver, just over 75 miles each way. The trip takes approximately two hours and fifteen minutes. The corridor connects the two largest metropolitan areas in Colorado.[2] FREX began service in 2004 with a Congestion Mitigation and Air Quality (CMAQ) grant from the federal government. When the grant expired in 2006 the service was continued with the support from the State of Colorado, Pikes Peak Rural Transit Authority, and communities.



Service Description

FREX provides service to employment centers in both Denver and Colorado Springs. As a result, morning and afternoon service is provided in each direction. FREX offers 12 roundtrips in the morning and 12 roundtrips in the afternoon. FREX is currently examining options to park buses in Denver during the day in order to reduce operating expenses. FREX vehicles are owned and operated by Mountain Metropolitan Transit or City of Colorado Springs Transit Department. FREX provides just over 190,000 unlinked trips annually with an annual operating budget of $1.5 million.

Type of Vehicle and Stations

FREX operates low floor buses with high-backed, cushioned seats, individual reading lights, air vents, free wireless internet, and bicycle racks. FREX operates from five park-and-ride lots located along I-25, some the park-and-ride lots have bus shelters while others are simply a shopping center parking lot.

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[2] *U.S. Census Bureau, Population Division, 2001. Metropolitan Areas Ranked by Numeric Population Change: 1990 to 2000. Available at http://www.census.gov/population/www/cen2000/briefs/phc-t3/index.html.*

Operating Environment

FREX operates in mixed traffic for about 76 miles, primarily along I-25.

Lessons Learned

It costs $3.00 more each way to take the bus from Colorado Springs to Denver than from Monument to Denver. Monument is 15 miles closer to Denver than Colorado Springs, and they are finding a large number of passengers are driving the extra 15 miles to save six dollars a day roundtrip in bus fare. Mountain Metropolitan Transit and the City of Colorado Springs Department of Transportation are considering revising the fare structure to account for high operating costs. It is possible that they will modify the fare difference to account for the various park-and-ride locations to encourage those who live in Colorado Springs to take the bus in Colorado Springs.

FREX is also exploring the possibility of route restructuring, including parking some of their buses in Denver during the day and having drivers ride back to Colorado Springs as passengers to save on operating cost.

Another important lesson learned was that although the low-floor buses make for faster boarding and alighting, they also make for a rougher ride relative to an over-the-road coach, for example. Together with the long travel one-way time between Colorado Springs and Denver (approximately 90 minutes), the rough ride has led to some passenger frustration

Nashville, TN – Relax-and-Ride

Nashville's Regional Transit Authority (RTA) provides two commuter bus routes – to Murfreesburo and to Gallatin via Hendersonville. RTA is an unfunded agency supported by member communities, including 29 cities and nine counties.

Murfreesburo is located approximately 35 miles southeast of downtown Nashville and is home to Middle Tennessee State University, which provides a large reverse commute from Nashville. The Murfreesburo route began operation in 1997 it current provides over 96,000 unlinked trips a year, while the Gallatin-Hendersonville route began operation in September 2008, at the current ridership levels it will provide service to 27,000 unlinked

annually. Gallatin is located approximately 30 miles northeast of downtown Nashville while Hendersonville is about 18 miles northeast. Prior to this route, the Nashville Metropolitan Transit Authority (MTA) operated a route with service to Hendersonville. The Nashville MTA then discontinued service to Hendersonville in August 2008 due to overcrowding of buses prior to entering its primary service area. MTA is the primary transit provider in the Nashville area it's primary service area is, similar to the Twin Cities metropolitan area's Metro Transit taxing district[3].

An important note when examining ridership figures for the Murfreesburo Relax-and-Ride is that all state employees in Tennessee ride pubic transit at no cost to the employee. The RTA and the State are still working out the details of arranging this for the Gallatin-Hendersonville service. The RTA expects that buses will operate at capacity when the fare collection equipment is installed on the Grey Line Buses by December 2008. The RTA is working with Vanderbilt University to provide discounted or free rides to its employees.

Service Description

The Murfreesburo commuter bus has four morning routes to Nashville and two reverse commute morning routes to Murfreesburo. In the afternoon, there are five routes to Murfreesburo and one reverse commute bus to Nashville. The Gallatin-Hendersonville route operates two morning buses into Nashville and two buses back in the evening.

Type of Vehicle and Station

The RTA contracts the service to different bus companies. The Murfreesburo route is operated by MTA. This route uses buses from the MTA fleet, which consists of standard 40-foot buses. The Gallatin-Hendersonville route is contracted to Grey Lines, a sightseeing tour bus company, and the service is provided with coach buses equipped with high-backed seats, bathrooms, and televisions. Relax-and-Ride utilizes existing

[3] *Primary service area is similar to the Metro Transit's transit taxing district. Hendersonville is located outside of the MTA's primary service area; however, it was generating enough ridership that buses were full before they entered the primary service area. This meant that only standing room on the buses was left for transit patrons within the MTA's taxing district and led to their frustration and sense of unfairness in providing service.*

parking lots of retailers such as Wal-mart, K-mart, and Kohl's for its park-and-ride lots. These parking lots do not provide passenger amenities.

Operating Environment

Relax-and-Ride operates primarily in mixed traffic. The Murfreesburo Route travels along Murfreesburo Road and I-24, with stops at six park-and-rides along the way the route is 44 miles, the total travel time is an hour and 15 minutes. The Hendersonville-Gallatin route travels along US 31 and I-65 into Nashville the route is 31 miles with stops at two park-and-ride lots, the travel time is one hour 37 minutes. Along a portion of I-65, it uses HOV lanes in the Nashville area.

Lessons Learned

Working with employers to provide free and discounted fares can substantially boost ridership. Collaborating with educational intuitions in the non-downtown end of the trip can reduce deadheading.

Dallas, TX – Denton County Express

The Denton County Express started service in 2006 and operates between the suburb of Denton and downtown Dallas. The Denton County Express provides service 138,000 unlinked trips annually. It is operated by the Denton County Transit Authority (DCTA). The DCTA is currently designing the region's first commuter rail line to connect Denton with the Carrolton Transit Center, where riders will be able to transfer to reach destinations throughout the Dallas metropolitan area. Funding for both the Denton County Express and the future rail line will is provided through a local sales tax.

Service Description

The Denton County Express operates two routes with three buses on each route. The first route picks up at a park-and-ride in Denton and provides service directly to downtown Dallas approximately 37 miles. The travel time from Denton to downtown Dallass is one hour 25 minutes. The other route provides service to downtown Dallas from two park-and-ride lots located in Lewisville, approximately 25 miles. The Denton County Express also provides reverse commute service from Dallas to Denton, in particular to North

Texas University and Texas Women's University. North Texas University provides free rides to all students and staff. This results in a roughly balanced ridership north- and southbound.

Type of Vehicle and Station

The Denton County Express operates coach buses, which provide the rider with a more comfortable ride than the traditional transit bus. Denton County Express uses parking lots of two movie theaters and an entertainment center (e.g. mini-golf, go-karts). These parking lots do not provide passenger amenities.

Operating Environment

Buses operate primarily in mixed traffic along I-35E; however, they do use HOV lanes where available.

Lessons Learned

The presence of an employment/education destinations at both ends of the line help to reduce the need for dead heading. Coordinating with area employers and Universities to provide discounted rates and timing of reverse commutes can boost ridership.

Atlanta, GA – Xpress



The Atlanta metropolitan area has developed an extensive network of commuter buses known as the Xpress. The Xpress is operated by the Georgia Regional Transportation Authority (GRTA), which started Xpress in 2004 with two routes. Due to the popularity of the service, it has now grown to include 27 routes with further expansion planned. The Xpress system provides 3 million unlinked trips annually with an annual operating expense of $12.75 million.

The GRTA is a separate transit authority from the Metropolitan Atlanta Rapid Transit Authority (MARTA), the primary transit agency in the Atlanta area. It is a separate authority created by the state legislature in 1999 to combat

Atlanta's growing air pollution problem. GRTA can issue $1 billion in revenue bonds and $1 billion in general obligation bonds. In addition, GRTA must approve the expenditure of Federal and State Transportation fund in the 13-county region; it uses this authority to leverage funds from local communities to support transit.

Service Description

Most routes have five to eight trips in both the morning and afternoon peak periods (from 5:30 AM to 8:00 AM and from 3:15 PM to 6:00 PM, respectively.) Most routes provide direct service into downtown and midtown Atlanta; however, some of the routes meet up with the MARTA systems trains to facilitate transfers. Routes range in length from 15 to 44 miles in length, the shorter routes meet with MARTA trains allowing riders to continue their trip.

Type of Vehicle

Xpress uses coach buses with passenger amenities that include reclining seats, reading lamps, luggage racks, and individual electrical outlets for some seats.

Operating Environment

Xpress buses operate primarily in mixed traffic and HOV lanes. However, for a short stretch of the Georgia State Highway 400 BOS are available, they operate the BOS with the same operating rules as Minnesota as described in the Northstar Commuter Coach section.

Lessons Learned

As the popularity of Xpress grew, the GRTA realized dividing the most popular routes between destinations (downtown and midtown Atlanta) boosted ridership of both routes by decreasing travel time, even though this sometimes meant the frequency of bus service was decreased.

Minneapolis, MN – Northstar Corridor and Route 288

Northstar Commuter Coach and Ramsey Star Express

The Northstar Commuter Coach is a commuter bus line connecting downtown Minneapolis with the northern suburbs of Elk River and Coon Rapids. The Northstar Commuter Coach service began in 2001 with the intention of building transit ridership for the future development of the Northstar Commuter Rail, scheduled to open in 2009. Ridership on the Northstar Commuter Coach has grown to 225,000 annual unlinked trips. It provides service from the City of Ramsey to downtown Minneapolis. Ramsey is about halfway between Elk River and Coon Rapids. The Ramsey Star Express began service in 2007,

Service Description

The Northstar Commuter Coach primarily provides single-direction, commuter-based transit with eight southbound buses operating between 5:30 AM and 8:00 AM, and eight northbound buses operating between 3:00 PM and 6:00 PM. The Commuter Coach focuses on providing transit service in the southern portion of the Northstar corridor, with service to park-and-ride lots in Elk River and Coon Rapids as well as the Fifth Street Garage Transit Center in downtown Minneapolis. When the Northstar Commuter Rail service begins in 2009, the route will be modified to extend service further north to East St. Cloud and St. Joseph and to terminate in Big Lake, which will be the northernmost stop of the commuter rail service.

The Ramsey Star Express provides nonstop service between the Ramsey park-and-ride lot and the Fifth Street Garage Transit Center in downtown Minneapolis. The Ramsey Star Express has four southbound trips in the morning (5:20 AM to 7:30 AM) and four northbound trips in the afternoon (3:30 PM and 6:00 PM) with no reverse commute trips. It is unclear at this time whether the Ramsey Star Express will remain in service or how the service will operate when the Northstar Commuter Rail opens in 2009.

For the summer of 2008, midday service was added from downtown Minneapolis (leaving at 1:00 PM on Fridays), with stops in Coon Rapids, Ramsey, and Elk River.

The North Corridor Development Authority and County Regional Rail Authorities fund and operate by these routes. The annual operating expenses are $760,000 for Northstar Commuter Coach and $310,000 for the Ramsey Star Express.

Type of Vehicle and Stations

The Northstar Commuter Coach and Ramsey Star Express operate "luxury" coach buses featuring comfortable reclining seats with headrests and footrests, overhead reading lights and cup holders. All buses also have storage compartments and accessible lifts. The Northstar Commuter Coach operates from park-and-ride lots with bus shelters. The park-and-ride lots are located at the sites of the future commuter rail stations.

Operating Environment



Buses operate in a combination of mixed traffic and BOS. Since 1993, the Twin Cities metropolitan area has developed an extensive network of BOS. Buses traveling on roadways with BOS's operate in mixed traffic unless travel speeds drop below 35 mile per hour (mph). If travel speeds in the general traffic lanes drop below 35 mph, bus drivers then have the option to drive on the BOS, at which point buses operate on the BOS at speeds not to exceed 35 mph or 15 mph above traffic in the general traffic lanes. Northstar Commuter Coach and Ramsey Star Express buses can utilize BOS's for approximately 19 miles of the route, (along TH 10, TH 252, portions of I-94 and the on- and off-ramps to I-94 in downtown Minneapolis). The Northstar Commuter Coach travels 31 miles in 55 minutes. And the Ramsey Star Express travels 25 miles in 40 minutes.

Lessons Learned

Ramsey Star Express showed the importance of proper fare structure. In March of 2008, the fare was reduced from $4.50 to $2.75 (in Oct. of 2008 all transit fares in the Twin Cities were increased the fare for the Ramsey Star Express was increased to $3.00). From October of 2007 to March of 2008, the average daily ridership hovered between

120 and 136 passengers. With the reduction in fares, average daily ridership on the Ramsey Star Express jumped to 260 passengers per day by June of 2008, ridership has remained relative consent since June this would be approximately 65,000 unlinked trips annually.

Metro Transit Route 288

Metro Transit Route 288 operates between downtown Minneapolis and Forest Lake. This route started as a way to alleviate traffic congestion on the I-35W corridor following the collapse of the I-35W Bridge over the Mississippi River. Up until the opening of the new I-35W bridge in October 2008, the cost of this service was paid for by federal funds related to the bridge collapse. After the bridge reopened, a funding agreement between Metropolitan Council, Washington County, Anoka County, and Chisago County was developed to continue the service through the end of 2008. For 2009 and beyond, the Counties and communities are developing a funding plan with the Metropolitan Council. The annual cost of operating the route is $780,000.

Part of the funding agreement to continue service through the end of 2008 included was a fare increase from $2.75 to $4.75. The increase in fare reduced average daily unlinked trips from 425 to 330, or 80,000 annual unlinked trips after the increase.

Service Description

The route picks up and drops off at two park-and-ride facilities near the same interchange – Forest Lake Transit Center and Running Aces Harness Park on the east and west side of the Highway 97 interchange on I-35, respectively. Route 288 then travels nonstop to and from downtown Minneapolis. There are five buses in the a.m. peak and four in the p.m. peak period. There is an additional early morning shuttle to the 95th Avenue park-and-ride lot.

Type of Vehicle and Station

Route 288 uses over-the-road coaches, which the Metropolitan Council contracts from a private transit provider, Lorenz Bus Company. Route 288 operates from two park-and-ride lots the Forest Lake Transit Center and Running Aces Casino. The Forest Lake Transit Center offers an indoor waiting area and rest rooms. The Running Aces Casino

does not offer passenger amenities. The route also provides local service between the park-and-ride lots.

Operating Environment

Route 288 operates on a combination of mixed traffic and BOS on freeways, primarily I-35W, I-694 and I-94, where available. Following the bridge I-35W Bridge reopening Route 288 began operating along I-35 and I-35W into downtown. The route over the I-35W Bridge is 33 miles long and takes one hour and seven minutes.

Lessons Learned

The high ridership following the initial start of this route showed that a latent demand for transit service in the corridor.

Summary

Table 1 summarizes the findings of this technical memorandum, along with characteristics of existing transit service within the Red Rock Corridor as a form of comparison. Following are some salient points to keep in mind when developing alternative service plans for the Red Rock Corridor:

- Setting the fare price appropriately can have a large impact on ridership, as it did with Ramsey Star Express.
- Working with employers and Universities to provide reduced or free bus service can substantially boost ridership, based on the experience of Relax-and-Ride and Denton County Express.
- In Atlanta, Xpress found that providing buses directly to both downtown and midtown Atlanta reduced in-vehicle time and boosted ridership.
- Designing routes so that they provide service to reverse commuters can increase ridership with minimal increase in operating costs, similar to the Denton County Express.

Table 1
Select Characteristics of Peer Commuter Bus Systems

Select System Characteristic	Peer Commuter Bus System									
	Denver, CO FREX	Nashville, TN Relax-and-Ride		Dallas, TX Denton Commuter Express	Atlanta, GA Xpress[4]	Minneapolis, MN			Red Rock Corridor (Provided for Comparison)	
	Denver – Colorado Springs	Gallatin – Hendersonville	Murfreesboro	Dallas – Denton	Atlanta Metropolitan Area	Northstar Commuter Coach Minneapolis – Elk River	Ramsey Express Minneapolis - Ramsey	Metro Transit Route 288 Minneapolis – Forest Lake	Minneapolis – Cottage Grove (Route 365)	St. Paul – Cottage Grove (Route 361)
Service began in:	2004	2008	1997	2006	2004	2001	2007	2008	2002	1980's??
Annual Ridership[5] (Unlinked Trips)	193,750	27,000	96,250	138,000	3,000,000	225,000	65,000	80,000	130,000	72,500
Daily Ridership (Unlinked Trips)	775	108	385	552	12,000	900	260	330	520	290
Average Passengers per Bus	32	27	39	23	29	56	33	30	37	24
Annual operating cost*[6]	$1.5 million	Not Available	Not Available	$850,000	$12.75 million	$760,000	$310,000	$780,000	$990,000	$590,000
Fare (One-way)	From $4.00 to $9.00	$3.50	$3.50	$5.00	$3.00 ($5.00 round trip)	From $3.00 to $4.75	$3.00	$4.75	$3.00	$3.00
Funding Sources	Originally, FREX was funded by CMAQ, PPRTA, and local communities now provide funding.	RTA is an unfunded agency supported by member communities, including 29 cities and nine counties.		Funding is provided through sales tax.	GRTA can issue $1 billion in revenue bonds and $1 billion in general obligation bonds. GRTA must approve the expenditure of Federal and State Transportation fund in the 13-county region, allowing it to leverage these funds to support transit.	Funding is provided by the North Corridor Development Authority and County Regional Rail Authorities.		Initial funding from the Federal government as part of disaster relief associated with I-35W bridge collapse, now funded jointly by the Metropolitan Council, Anoka, Chisago, and Washington Counties.	Metro Transit's operating budget is funded by the MVST with assistance from the State general fund.	
Length of Trip	76 miles	31 miles	44 miles	37 miles	15 miles to 44 miles	31 miles	25 miles	33 miles	23	13
Trips per day (Each Direction)	12	2	4 (2 in reverse direction)	6	204 (5 to 8 peak direction most routes)	8	4	5[7]	7	6
Number of Stops (Other than Downtown)	5	6	2	10	Not Available/ Not Applicable	2	1	3	From 2 to 3	2
Travel Time[8]	2 hours and 15 minutes	1 hour and 15 minutes	1 hour and 37 minutes	1 hour and 25 minutes	Not Available/ Not Applicable	55 minutes	40 minutes	1 hour and 7 minutes	48 minutes	27 minutes
Average Speed	34 mph	25 mph	27 mph	26 mph	Not Available/ Not Applicable	34 mph	38 mph	30 mph	29 mph	29 mph

[4] *Number of stops, travel time, and average speed are not applicable or not available for Xpress, because it is a regional system commuter 27 commuter bus routes as a opposed to individual route. Each route has different number of stops, travel time, and average speed, depending on the characteristics of the route.*

[5] *Ridership was reported differently for different systems they were all convert to daily and annual unlinked trips for comparison based on an annualization rate of 250 and or five days in a week.*

[6] *Information not available; the Nashville RTA and Twin Cities Metro Transit do not report their annual operating expense by individual routes.*

[7] *In addition to the five trips to downtown Minneapolis there is also a shuttle to 95th Ave. park-and-ride where passengers can transfer to the Route 250,*

[8] *Travel is determined based on the end-to-end schedule time of the buses for the last bus to arrive in downtown before 8:00 a.m.*

Table 1 (continued)
Select Characteristics of Peer Commuter Bus Systems

Select System Characteristic	Peer Commuter Bus System									
	Denver, CO FREX	Nashville, TN Relax-and-Ride		Dallas, TX Denton Commuter Express	Atlanta, GA Xpress[9]	Minneapolis, MN			Red Rock Corridor (Provided for Comparison)	
	Denver – Colorado Springs	Gallatin – Hendersonville	Murfreesboro	Dallas – Denton	Atlanta Metropolitan Area	Northstar Commuter Coach Minneapolis – Elk River	Ramsey Express Minneapolis - Ramsey	Metro Transit Route 288 Minneapolis – Forest Lake	Minneapolis – Cottage Grove (Route 365)	St. Paul – Cottage Grove (Route 361)
Operating Environment	Mixed traffic on an interstate freeway	A combination of mixed traffic on US highway and interstate freeway. A portion of the interstate has HOV lanes.	A combination of mixed traffic on US highway and interstate freeway.	Buses travel in mixed traffic and HOV lanes along an Interstate.	Buses use a combination of mixed traffic, HOV, and BOS. They operate on a variety of roadways including Interstate, US and State Highways.	Buses operate on Interstates, US and State Highways both freeway and non-freeway. When available buses utilized BOS.	Buses operate on Interstates, US and State Highways both freeway and non-freeway. When available buses utilized BOS.	Buses operate on Interstates, when available buses utilized BOS.	Buses operate on Interstates and US Highways both freeway and non-freeway. When available buses utilized BOS.	Buses operate on Interstates and US Highways both freeway and non-freeway. When available buses utilized BOS.
Future Expansion	Not applicable	RTA is exploring the feasibility of expanding its commuter rail system. The primary hurdle in developing a commuter rail line to the northeast is coordination with the railroad with owns and operates on the tracks.		Commuter rail and light rail service scheduled to begin revenue service in 2010.	GRTA plans to continue expanding its Xpress network as funding becomes available.	Commuter rail service will begin in 2009	Not applicable.	Not applicable.	Red Rock Corridor Commuter Bus Feasibility Study is underway to determine appropriate service plan for the corridor to Hastings, Red Wing and Prairie Island.	
Operator	Mountain Metropolitan Transit	Regional Transit Authority		Denton County Transit Authority (DCTA)	GRTA	Northstar Development Authority		Lorenz Bus Company	Metro Transit	
Governance	Transit Department of Colorado Springs	Unfunded board		Coordinated County Transportation Authority	Created by State Assembly	Joint Powers Board		Metropolitan Council	Metropolitan Transit	
Lessons Learned	Determine appropriate fare structure to encourage longer transit trips. Consider passenger comfort in selecting vehicle.	Working with local employers to subsidies fares can greatly boost ridership.		Design route to accommodate both peak direction and reverse commutes to increase service efficiency.	Providing direct service to multiple destinations boosted ridership.	Operating buses from the park-and-rides where train stations will be located will establish and encourage transit use travel while allowing for interim use of the facility until the commuter rail service is in place.	Properly price transit service can greatly impact ridership levels.	There was latent demand for transit in the corridor.	2007 Alternatives Analysis identified demand for transit service within the corridor, and recommended building ridership through initial implementation of commuter coach service as a first step towards development of commuter rail service.	

[9] *Number of stops, travel time, and average speed are not applicable or not available for Xpress, because it is a regional system commuter 27 commuter bus routes as a opposed to individual route. Each route has different number of stops, travel time, and average speed, depending on the characteristics of the route.*

Technical Memorandum #3

Development and Evaluation of Alternatives

Red Rock Commuter Bus Feasibility Study



Prepared by:

URS

and

Connetics Transportation Group

July 2009

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1. Introduction

In 2007, an Alternatives Analysis was completed for the Red Rock Corridor. One of the short-term strategies recommended in the Alternatives Analysis was to determine the feasibility of a commuter coach bus service between the two downtowns of St. Paul and Minneapolis and Hastings, as well as extending this type of service to Goodhue County to serve the City of Hastings and Prairie Island Indian Community. As a result, the Commuter Bus Feasibility Study was kicked-off in October 2008 with the intent of increasing transit ridership and adding/expanding local park-and-ride facilities in a manner that supports the Corridor's long-range vision for commuter rail service.

The project scope has four-parts:

A. Assess travel needs within the Corridor

B. Develop operating concepts to serve travel needs

C. Evaluate operating concepts

D. Develop recommended service plan
   - Service delivery
   - Financial plan
   - Implementation plan.

This document provides support for the second and third bullet items by defining and evaluating the various alternatives for express bus service.

2. Existing Corridor Transit Service

Currently, there are three routes serving the Red Rock Corridor with the southernmost stop at the Cottage Grove park-and-ride. Those routes are described in the following paragraphs, summarized in **Tables 2-1 and 2-2,** and illustrated in **Figure 2-1**.

Route 361 – Cottage Grove/Downtown St. Paul

Route 361 operates between the Cottage Grove park -and-ride and downtown St. Paul via Trunk Highway (TH) 61 and I-94. En route to downtown, Route 361 also serves the Lower Afton park-and-ride. Once in downtown St. Paul, the route travels via Sixth Street (morning inbound) and Fifth Street (afternoon outbound) until terminating near the Smith Avenue Parking Ramp. Route 361 provides five morning inbound trips and two morning reverse-commute (outbound) trips Likewise, in the afternoon Route 361 provides six outbound trips and three reverse-commute (inbound) trips. One trip in the morning and one trip in the afternoon provide a route extension to Ivystone Avenue and 80th Street in Cottage Grove. Weekday morning service operates approximately between 5:30 AM and 8:00 AM. Weekday afternoon service resumes approximately between 3:15 p.m. and 6:30 p.m. There is no weekend service provided. Route 361 typically carries 300 riders a day and is operated by Metro Transit.

Route 364 – St. Paul Park/Newport/Downtown St. Paul

Route 364 operates between Cottage Square Shopping Center in St. Paul Park, Newport and downtown St. Paul via TH 61. Unlike Routes 361 and 365, Route 364 provides more localized service through the St. Paul Park and Newport communities prior to traveling express via TH 61 and I-94. En route to downtown, Route 364 also serves the Lower Afton park-and-ride. Once downtown, the route travels via 6th Street (morning inbound) and 5th Street (afternoon outbound) until terminating near the Smith Avenue Parking Ramp. Route 364 provides three morning inbound trips and three afternoon outbound trips. Weekday morning service operates approximately between 6:00 AM and 8:00 AM. Weekday afternoon service resumes approximately between 4:00 PM and 6:00 PM. There is no weekend or midday service provided. Route 364 is operated by First Transit through a contract with the Metropolitan Transportation Services (MTS).

Route 365 – Cottage Grove/Downtown Minneapolis

Route 365 operates between the Cottage Grove park-and-ride and downtown Minneapolis via TH 61 and I-94. En route to downtown, Route 365 also serves the Lower Afton park-and-ride. Once downtown, the route travels via Seventh Street (morning inbound) and Sixth Street (afternoon outbound) until terminating near the Fifth Street Garage Transit Center via I-94. Route 365 provides seven morning inbound trips and seven afternoon outbound trips. Weekday morning service operates approximately between 6:00 AM and 8:30 AM. Weekday afternoon service resumes approximately between 3:30 PM and 6:30 PM. There is no weekend or midday service provided. Route 365 typically carries 540 riders per day and is operated by Metro Transit.

Table 2-1
Existing Red Rock Corridor Express Transit Service

Route	Park-and-Rides Served	Operating Hours[1]	Number of Daily Trips	Typical Daily Ridership[2]	Service Provider
361 – Cottage Grove/ Downtown St. Paul	Cottage Grove Lower Afton	5:36-8:07 a.m. 3:15-6:40 p.m.	Morning: 5 inbound and 2 reverse commute Afternoon: 6 outbound and 3 reverse commute	300	Metro Transit
364 – St. Paul Park/Newport/ Downtown St. Paul	Lower Afton	6:01-7:52 a.m. 4:10-6:06 p.m.	Morning: 3 Inbound Afternoon: 3 Outbound	N/A[3]	First Transit
365 – Cottage Grove/ Downtown Minneapolis	Cottage Grove Lower Afton	5:50-8:25 a.m. 3:42-6:23 p.m.	Morning: 7 Inbound Afternoon: 7 outbound	540	Metro Transit

1 *Table presents approximate service hours.*
2 *Number of transit trips served each day.*
3 *Ridership data for Route 364 was unavailable at this writing.*

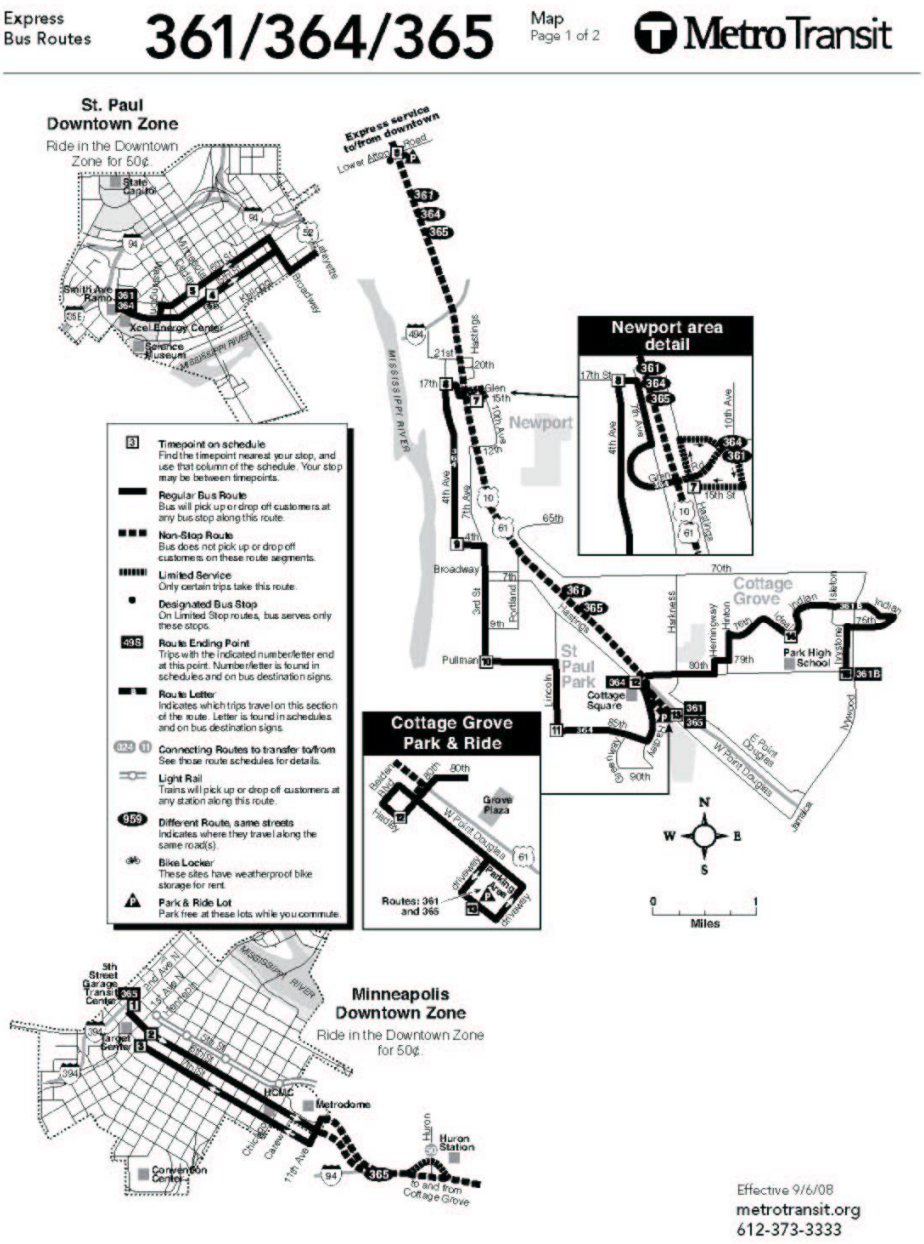
The estimated operating cost for Routes 361, 364 and 365 are as follows, using information provided by Metro Transit as of May 2009:

Table 2-2
Estimated Annual Operating Cost of Existing Express Transit Service

Route	Daily Number of Hours[4]	Unit Cost per Hour[5]	Estimated Annual Operating Cost[6]
361	15.7 platform-hours	$112.78	$452,000
364	4.4 in-service hours	$52.60	$61,000
365	25.2 platform-hours	$112.78	$725,000

4 *Sources: Metro Transit for Routes 361 and 365; MTS for Route 364. Costs as of March 2009.*
5 *Sources: Metro Transit for Routes 361 and 365; MTS for Route 364. Costs as of March 2009.*
6 *Based on 255 weekdays per year; approximate annual cost rounded up to the nearest $1,000.*

Figure 2-1
Existing Red Rock Corridor Transit Service[7]



[7] *Source: http://www.metrotransit.org. Published route information as of July 2009 (effective September 6, 2008).*

3. Existing Park -and-Ride Facilities

The following two park-and-ride facilities are located in the Red Rock Corridor along Highway 61:

Cottage Grove

The Cottage Grove park-and-ride (**Figure 3-1**) is located along the south frontage road of Highway 61 (West Point Douglas Road) in Cottage Grove, just south of the Grange Boulevard/80th Street interchange. The facility can accommodate 490 vehicles plus allows for internal bus circulation and pick-up/drop-off. It is served by Routes 361 and 365. The facility has been in use for six years and experiences moderate to above-average utilization. Currently, there are no capacity shortfalls at this facility. The facility is owned and operated by Metro Transit.

Figure 3-1
Cottage Grove Park-and-Ride Lot



Lower Afton

The Lower Afton park-and-ride (**Figure 3-2**) is located in a triangular-shaped parcel at the intersection of Highway 61 and Lower Afton Road. Service is provided by Routes 361, 364 and 365. The 110-space facility is unique in that it is served street-side with no internal bus access. Passengers board and alight buses at stops along Highway 61. Northbound (inbound) buses stop along the highway adjacent to the park-and-ride. Southbound (outbound) passengers must alight on the opposite side of the highway and cross with the assistance of a traffic signal. As the only park-and-ride facility north of Cottage Grove, the Lower Afton Road park-and-ride, experiences parking capacity shortfalls on a regular basis. The facility is situated within the Minnesota Department of Transportation's (Mn/DOT) right-of-way, but is operated by Metro Transit. There are future plans to expand the facility, along with the reconstruction of the adjacent signalized intersection (TH 61 and Lower Afton Road).

Figure 3-2
Lower Afton Road Park-and-Ride Lot



4. Alternatives Considered

Four scenarios were considered for proposed commuter bus service in the Red Rock Corridor. Each of the four scenarios include a new park-and-ride facility in Newport (to be served by Route 364) to provide capacity relief for the Lower Afton Road Park-and-Ride and a new park-and-ride facility at the Hastings Train Depot. All four scenarios also make provisions for both Minneapolis and St. Paul commuters.

Scenario 1

Scenario 1 assumes Routes 361 and 365 are extended to Hastings, with new trips added to each route. Specifically, 10 bus trips are added to Route 365 (five in each peak period) and 6 bus trips are added to Route 361 (three in each peak period). The new bus trips would operate to Hastings and would also continue to serve the Lower Afton Road and Cottage Grove park-and-ride lots. A new park-and-ride facility would be established at the Hastings Train Depot to accommodate the new route extensions. Like Routes 361 and 365, it is assumed these additional trips would utilize traditional transit buses for their operation.

Scenario 2

Scenario 2 assumes two new commuter coach routes from Hastings – one to Minneapolis and one to St. Paul. The Minneapolis route reflects ten proposed bus trips each day (five in each peak period) and the St. Paul route reflects six proposed bus trips each day (three in each peak period). Unlike Scenario 1, these new bus trips would not stop at the Lower Afton Road or Cottage Grove park-and-ride lots. Rather, Routes 361 and 365 will continue to serve these two existing facilities with no change to their current service plans. Like Scenario 1, a new park-and-ride facility would be established at the Hastings Train Depot to accommodate the new Hastings commuter services. Scenario 2 will utilize commuter coaches.

Scenario 3

Scenario 3 provides the same level of base service as described in Scenario 2. However, four additional trips serving both Minneapolis and St. Paul have been added. One trip is added inbound in the morning; one trip is added outbound in the afternoon; and one round trip is added during the midday time period. The additional trips would serve both downtown St. Paul and Minneapolis. The two midday trips would also serve the Cottage Grove park-and-ride which currently has no midday service. Similar to Scenario 2, Scenario 3 will use commuter coaches.

Scenario 4

Scenario 4 provides the same level of base service as described in Scenario 3 and will also utilize commuter coaches. However, four of the morning inbound trips (two to Minneapolis, two to St. Paul) would be extended to serve Red Wing. Likewise, four afternoon outbound trips would also be extended in the same manner to serve the Prairie Island Indian Community and/or Red Wing. Additional park-and-ride facilities would also be established to accommodate commuters from these areas, with potential locations at the intersection of TH 61 and Highway 19 and downtown Red Wing. Feedback from the TAC also included locating a park-and-ride lot on Sturgeon Lake Road near the railroad tracks (currently used as an overflow lot) to provide direct service to the Prairie Island Indian Community, and using Goodhue County Road 18 to route the buses. These potential locations and routings will need to be revisited as ridership in the Corridor increases and warrants extension of the service to this area.

Scenario Service Requirements

Example schedules were developed for each scenario to determine daily and annual service requirements. The example bus schedules reflect bus running times that are consistent with experiences from Routes 361 and 365, and are provided in **Appendix A**. Vehicle requirements for the four scenarios range between seven and eight peak buses with a total fleet requirement ranging between nine and ten buses (**Table 4-1**). Fleet vehicle requirements reflect Federal Transit Administration's (FTA) recommended 20 percent spare ratio to ensure adequate back-ups when vehicles are down for repairs.

Daily and annual service hours reflect more variance between the scenarios, particularly in those scenarios that provide midday service.

Table 4-1
Red Rock Corridor Commuter Bus Service Requirements

Scenario	Additional Peak Buses	Additional Fleet Buses	Additional In-Service Hours	Additional In-Service Hours
Scenario 1 Extend Routes 361 & 365 to/from Hastings	7	9	17.0	4,340
Scenario 2 New Commuter Coach Service to/from Hastings	8	10	16.0	4,080
Scenario 3 New Commuter Coach Service to/from Hastings plus Midday Service	8	10	21.5	5,480
Scenario 4 New Commuter Coach Service to/from Hastings and Red Wing plus Midday Service	8	10	25.5	6,500

5. Ridership Potential

This section presents the methodology and results for estimating ridership potential that is associated with each of the four operating scenarios. *Technical Memorandum #2: Transit Needs Assessment* presents the detailed methodology and results for estimating existing ridership potential for the Red Rock Corridor as a whole using 2006 Longitudinal Employer-Household Dynamics (LEHD) data.

Specific ridership estimates were assigned to each scenario, with those ridership estimates falling within the range of forecasts presented in the previous section of this report. **Table 5-1** at the end of this section summarizes the ridership projections with specific scenario-level ridership impacts described in greater detail in the paragraphs that follow.

For clarity, one person-trip is equal to two daily transit trips, i.e. a person who takes the bus to work in the morning is assumed to take the bus from work in the afternoon.

Scenario 1

The new bus trips from Hastings will have longer travel times under Scenario 1 when compared to the other scenarios because of the route deviation and stop at the Cottage Grove park-and-ride. Thus, it seems more likely that new ridership obtained with this service plan would be more in line with the lower end of the ridership potential range. The resulting ridership estimate is for 80 person-trips from Hastings to downtown Minneapolis, and 40 person-trips from Hastings to downtown St. Paul. When converted to daily transit trips, this results in the following ridership forecasts for Scenario 1:

- Route 365 –160 additional daily transit trips
- Route 361 – 80 additional daily transit trips.

The additional bus trips proposed under this scenario (16 total trips to Minneapolis or St. Paul) are more than sufficient to meet these forecasted new trips, for the average ridership per bus trip would be 16 persons per bus trip to/from Minneapolis and

13 persons per bus trip to/from St. Paul. Actual ridership would, of course, vary by bus trip.

Scenario 2

A transit ridership estimate that uses the medium range of transit mode splits was applied for the Scenario 2 service plan. The medium estimate reflects 90 person-trips from Hastings to downtown Minneapolis. It has also been assumed that the new commuter coach route to Minneapolis could attract trips from Hastings to the University of Minnesota because of the connection provided with the future Central Corridor LRT line (20 person-trips), which is expected to begin revenue service in 2014.[8]

For St. Paul, the medium-range ridership estimate reflects 60 person-trips from Hastings to downtown St. Paul. It has also been assumed that the new commuter coach route to St. Paul could attract trips from Hastings to the State Capitol area because of the connection provided with the future Central Corridor LRT line (20 person-trips).

When converted to daily transit trips, the resulting ridership forecasts for Scenario 2 are as follows:

- Minneapolis route – 220 daily transit trips[8]
- St. Paul route – 160 daily transit trips.[8]

The Scenario 2 service plan provides capacity for up to 500 daily transit trips to/from Minneapolis and up to 300 daily transit trips to/from St. Paul (assuming 50 seats per commuter coach bus). Minneapolis service would average 22 riders per bus trip and St. Paul service would average 27 riders per bus trip. Actual ridership would, of course, vary by trip. Thus, the Scenario 2 service plan provides sufficient capacity to meet this ridership forecast.

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[8] *This ridership estimate includes 40 person-trips associated with increased attractiveness of Scenario 2 service based on increased connectivity with the future Central Corridor LRT line, which is scheduled to begin revenue service in 2014.*

Scenario 3

The mid-point between the medium and high transit ridership estimates was used for the Scenario 3 service plan to account for midday service associated with this scenario. The high estimate reflects 110 person-trips from Hastings to downtown Minneapolis. It has also been assumed that the new commuter coach route to Minneapolis could attract trips from Hastings to the University of Minnesota because of the connection provided with the future Central Corridor LRT line (30 person trips).[9] When averaged with the medium estimates, this results in an estimate of 125 total person trips to/from downtown Minneapolis and the University of Minnesota.

For St. Paul, the high estimate reflects 80 person trips from Hastings to downtown St. Paul. It has also been assumed that the new commuter coach route to St. Paul could attract trips from Hastings to the State Capitol area because of the connection provided with the future Central Corridor LRT line (30 person-trips).[9] When averaged with the medium estimates, this results in an estimate of 100 total person-trips to/from downtown St. Paul and the State Capitol area.

When converted to daily transit trips, the resulting ridership forecasts for Scenario 3 are as follows:

- Minneapolis route – 250 daily transit trips[9]
- St. Paul route – 200 daily transit trips.[9]

The additional capacity provided in Scenario 3 is more than sufficient to meet additional ridership demands, and overall daily ridership forecasts remain below overall daily service capacities.[10] Minneapolis service would average 21 passengers per bus trip while St. Paul service would average 20 passengers per bus trip. Actual ridership would, of course, vary by trip.

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[9] *Assumes that this additional ridership potential would be realized when the Central Corridor LRT line begins revenue operation in 2014. This estimate also assumes that patrons destined for downtown Minneapolis would take the Red Rock commuter coach service to Minneapolis and transfer to the Central Corridor LRT line en route to the University of Minnesota Minneapolis Campus.*

[10] *This assessment is based on a 50-person capacity per commuter coach.*

Scenario 4

Forecasts from Scenario 3 were used for the Scenario 4 service plan, but with the addition of trips identified from Prairie Island and Red Wing. Thus, an additional 20 person-trips were added for the Minneapolis service and 10 person-trips were added for the St. Paul service.

When converted to daily transit trips, the resulting ridership forecasts for Scenario 4 are:

- Minneapolis route – 290 daily transit trips[8]
- St. Paul route – 220 daily transit trips.[8]

The additional capacity provided in Scenario 4 is more than sufficient to meet additional ridership demands associated with service to/from Red Wing, and overall daily ridership forecasts remain below overall daily service capacities. Minneapolis service would average 24 passengers per bus trip while St. Paul service would average 22 passengers per bus trip. Actual ridership would, of course, vary by trip.

Summary of Ridership Potential by Scenario

Table 5-1 presents the estimated average weekday ridership for each of the four operating scenarios defined in this document. Note that the incremental increase ridership between Scenarios 2 and 4 (extension to Prairie Island and Red Wing) yield approximately 130 daily transit trips per day.

Net New Riders

To account for existing transit riders today, the ridership potential for each of the four scenarios would be reduced by approximately 100 daily transit trips each. This estimate is based on a total of approximately 50 vehicles that currently park at either the Lower Afton Road or Cottage Grove park-and-ride lot and whose licence plates were traced back to locations south of Cottage Grove including Hastings and points south. If each parked vehicle has one occupant, then this occupant would generate two transit trips per day: one inbound trip in the morning to either downtown Minneapolis or downtown St. Paul, and an outbound trip in the afternoon. Thus, the estimated number of net new

transit trips for each of the scenarios would range from 140 to 410 trips per day. **Table 5-1** expresses these net figures on an annual basis.

Table 5-1
Projected Ridership Estimates by Scenario

Scenario	Daily Transit Trips			Annual Transit Trips[11]	Net Annual New Transit Trips[12]
	Minneapolis Service	St. Paul Service	Total		
1	160	80	240	61,200	35,700
2	220	160	380	96,900	71,400
3	250	200	450	114,750	89,250
4	290	220	510	130,050	104,550

[11] *Total Daily Transit Trips x 255 weekdays per year on average.*

[12] *Based on Metro Transit's 2008 park-and-ride survey which indicated that approximately 50 vehicles that were using the Lower Afton and Cottage Grove facilities had licence plates that were traced back to locations south of Cottage Grove including Hastings and points south.*

6. Capital Cost Estimates

This study uses a modified Construction Specifications Institute (CSI) format that allows development of comparative cost estimates suitable for a feasibility study. Estimates of project capital costs were developed in three general steps under this methodology. First, project components, consistent with the application of unit costs and appropriate to the level of definition, were identified. Quantities and appropriate unit cost data were then developed. Second, the quantities were assembled into the modified CSI format, selective unit costs applied, and summed into the major cost categories defined later in this document to complete the order-of-magnitude capital cost estimates. Finally, leasing the buses opposed to purchasing the vehicles was examined for each of the scenarios.

Unit costs

Capital costs were based on two items necessary for commuter bus vehicles and park-and-ride facilities. Based on information provided by Metro Transit and from transit projects across the country, assumptions were made about the capital costs of both park-and-ride facilities and vehicles for each of the four scenarios.

- Park-and-Ride: $3,500 per surface park-and-ride space – Includes signage, lighting, access, bus bays, and landscaping. The estimated number of parking spaces is based on ridership estimates and includes an additional 10 percent contingency to account for functional capacity (e.g. vehicles that occupy more than one stall, allowances for snow storage, etc.).

- Vehicles:
  - $350,000 per standard 40-foot bus
  - $500,000 per commuter coach vehicle
  - $35,000 per vehicle for Automatic Vehicle Location (AVL)/Global Positioning System (GPS)
  - $200,000 per vehicle for maintenance facility.

- Right-of-way cost is not included in this estimate.

For the purposes of determining the size of park-and-ride lots, it was assumed that 100 percent of riders would drive to a park-and-ride lot. To account for future growth of service and ridership all park-and-ride lots were sized at one hundred ten percent of estimated demand, with a minimum park-and-ride facility size of fifty spaces . Vehicle fleet requirements were developed with a 20 percent contingency, to allow for necessary maintenance of vehicles without interrupting service.

Contingencies

A 30 percent contingency factor was used for the park-and-ride and maintenance facilities. However, a much lower contingency of five percent was used for the vehicles and AVL/GPS due to the relative certainty of costs associated with vehicles. In addition, to contingencies, 18 percent of the subtotal of infrastructure and vehicle costs were assumed for engineering and administration. These funds would be used to cover the planning, design, and coordination until the service begins operation.

Results

The capital costs estimates for each of the scenarios are presented in **Table 6-1**. Detailed capital costs estimates are included in **Appendix B**.

Table 6-1
Capital Cost Estimates in Year 2009 Dollars

Scenario	With Bus Purchase	With Bus Leasing
1	$8.38 million	$1.45 million
2	$11.40 million	$1.86 million
3	$11.59 million	$2.05 million
4	$12.28 million	$2.74 million

7. Operating and Maintenance Cost Estimates

Operating and Maintenance (O&M) unit costs were developed for the Red Rock Commuter Bus project on the basis of two sources – current year cost data for Route 288 (Forest Lake-Minneapolis) and Route 888 (Elk River-Minneapolis).

Route 288 is service contracted to Lorenz. Metropolitan Council staff provided contract information for this service. Current costs for this route are based on the following charges:

- $104/revenue service-hour for the leasing of buses
- $148.81/ revenue service-hour for operations, fuel and administration.

Thus, the total cost is $252.81 per revenue service-hour. The above rates are based on a diesel fuel cost assumption of $2.50 per gallon. If fuel goes above $2.50, the Metropolitan Council pays Lorenz the difference. Total monthly contracted costs are typically around $70,000 to $75,000.

Route 888 is operated by Laidlaw. Current costs for the service are based on the following charges:

- $12,443.43 per month for administrative costs
- $168.96 per bus trip for operations and fuel costs
- $5,689.67 per bus per month for the leasing of buses.

A diesel fuel cost adjustment is also in place. Total monthly contracted costs are typically around $110,000.

Results

For the Red Rock Corridor service plan scenarios, unit costs from approaches with and without the leasing of buses have been applied to the Red Rock operating statistics to determine a range of likely O&M costs. Scenarios without leasing assume buses will be purchased, thus annual O&M costs will be considerably lower. Scenarios that do not entail bus leasing will have a higher capital cost due to the purchase of buses. Alternatively, scenarios with bus leasing will have a lower capital cost, but carry a higher annual operating cost because the contract operator will build the cost of the bus over its life cycle as part of the terms of the lease. Estimated O&M costs with and without leasing are shown in **Table 7-1**.

Table 7-1
O&M Cost Estimates in Year 2009 Dollars

Scenario	Annual In-Service Hours	With Bus Leasing		With Bus Purchase	
		Low Range	High Range	Low Range	High Range
Scenario 1	4,340	$650,000	$850,000	$1,100,000	$1,325,000
Scenario 2	4,080	$600,000	$850,000	$1,025,000	$1,375,000
Scenario 3	5,480	$825,000	$1,000,000	$1,375,000	$1,550,000
Scenario 4	6,500	$975,000	$1,225,000	$1,650,000	$1,750,000

8. Proposed Fare Structure

Fare structures for similar express services in the Minneapolis-St. Paul region were reviewed to determine the per-mile rate commuters are currently paying. Five routes were identified with fares ranging from $3.00 per trip to $4.75 per trip.

Table 8-1
Minneapolis-St. Paul Commuter Bus Fares and Distances

Route #	Route Pattern	Cash Fare	Distance
Route 888	Elk River-Minneapolis	$4.75	35
	Riverdale-Minneapolis	$3.00	20
Route 856	Ramsey-Minneapolis	$3.00	25
Route 288	Forest Lake-Minneapolis	$4.75	30
Route 361	Cottage Grove-St. Paul	$3.00	13
Route 365	Cottage Grove-Minneapolis	$3.00	22

On average, fares charged equate to approximately 15¢ per mile. Application of this approximate rate to the Red Rock Commuter Bus service scenarios results in fares that range from $3.25 (Hastings to St. Paul to $8.00 (Red Wing to Minneapolis). There was discussion amongst the Technical Advisory Committee regarding the suggested $8.00 fare between Red Rock and Minneapolis and concern that many riders in the area would opt to drive to Hastings in order to save $3.25 per trip. Taking this into consideration, the following fare structure is recommended for the Red Rock Corridor:

Table 8-2
Recommended Fare Structure

Route Pattern	Cash Fare	Distance
Hastings-Minneapolis	$4.75	31
Hastings-St. Paul	$3.25	22
Red Wing-Minneapolis	$6.50	55
Red Wing-St. Paul	$5.00	46

The differential between fares to Minneapolis and fares to St. Paul is $1.50. This is appropriate not only due to the shorter distance to St. Paul but also to account for the more abundant and cheaper parking in downtown St. Paul than in downtown Minneapolis. A differential is also recommended for trips originating in Red Wing. This $1.75 difference was calculated by taking half the per-mile rate, multiplying it over the distance between Red Wing and Hastings (7.5¢ x 24 miles) and rounding it to the nearest quarter. This discounted per-mile rate is intended to encourage parking at the new Red Wing facilities while maintaining adequate capacity for the local residents who utilize the Hastings Train Depot park-and-ride.

9. Evaluation of Alternatives

The four service plan scenarios were then evaluated using the following service and performance characteristics:

A. O&M Cost Effectiveness
   - Cost per Passenger Trip
   - Cost per In-Service Hour

B. Ridership Effectiveness
   - Riders per Bus-Trip
   - Riders per Bus Hour

C. Annualized Cost per Passenger Trip

D. Annual Operating Subsidy Required.

A. O&M Cost Effectiveness

Using the operating and maintenance cost estimates presented earlier, two cost effectiveness measures have been calculated. The cost per passenger trip and cost per in-service hour for each of the four service scenarios are summarized in **Table 9-1** below. O&M costs in Section 6.0 of this report presented a range of likely O&M costs. The mid-point of each O&M cost range was used for purposes of this evaluation.

Table 9-1
Cost Effectiveness by Scenario

Scenario	Cost per Passenger Trip		Cost per In-Service Hour	
	Bus Leasing	Bus Purchase	Bus Leasing	Bus Purchase
1	$12.25	$19.81	$172.81	$279.38
2	$7.48	$12.38	$177.70	$294.12
3	$7.95	$12.75	$166.51	$266.88
4	$8.46	$13.07	$169.23	$261.54

Scenarios 2, 3 and 4 were found to have similar costs per passenger trip results, with Scenario 2 having slightly favorable results over Scenarios 3 and 4. All four scenarios had similar costs per in-service hour, with Scenario 3 showing a slight cost advantage without bus leasing and Scenario 4 reflecting a slight cost advantage with bus leasing. It is important to keep in mind that a rather broad range of potential O&M costs were defined and this table is using the mid-point of each defined range. Also note that costs for scenarios that do not assume bus leasing are lower since capital costs are not taken into consideration in these measures.

B. Ridership Effectiveness

Ridership effectiveness has been measured on the basis of riders per trip and riders per hour. **Table 9-2** summarizes these measures based on the ridership projections described in Chapter 5.

Table 9-2
Ridership Effectiveness

Scenario	Riders per Bus Trip	Riders per Bus-Hour
1	15.0	14.1
2	23.8	23.8
3	22.5	20.9
4	25.5	20.0

For riders per bus trip, Scenario 1 performs poorly at only 15 passengers per trip. The remaining three scenarios performed comparably, projecting between 22.5 and 25.5 passengers per trip. Riders per bus hour produced similar results with Scenarios 2, 3 and 4 outperforming Scenario 1. Scenario 2 performed the best with 23.8 passengers per hour. Scenario 2 has the same number of riders per bus trip and riders per bus service-hour (23.8) because Scenario 2 reflects both 4,080 annual bus trips and 4,080 annual service-hours.

C. *Annual Cost per Passenger Trip*

Annual O&M cost estimates from Chapter 7 and capital cost estimates from Chapter 6 were annualized, and then combined to determine the total annualized cost for each service scenarios. As previously noted, a wide range of potential O&M costs were defined based on experiences for Routes 288 and 888 in the Twin Cities area, and the mid-point of each O&M cost range was used for purposes of this calculation. The annualized cost per passenger trip for all four scenarios was then calculated. This cost calculation is prior to consideration of potential farebox revenues. As noted in the table below, Scenario 2 performs most favorably with bus leasing, and Scenario 4 performs most favorably without bus leasing. However, results do not significantly differ between Scenarios 2, 3 and 4, and are greatly impacted by O&M cost assumptions.

Table 9-3
Annual Cost per Passenger Trip

With Bus Purchase

Scenario	Annual O&M Cost	Annualized Capital Cost	Total Cost	Annual Pass. Trips	Cost/ Pass. Trip
Scenario 1	$750,000	$837,635	$1,587,635	61,200	$25.94
Scenario 2	$725,000	$1,140,530	$1,865,530	96,900	$19.25
Scenario 3	$912,500	$1,158,660	$2,071,160	114,750	$18.05
Scenario 4	$1,100,000	$1,228,590	$2,328,590	130,050	$17.91

With Bus Leasing

Scenario	Annual O&M Cost	Annualized Capital Cost	Total Cost	Annual Pass. Trips	Cost/ Pass. Trip
Scenario 1	$1,212,500	$145,040	$1,357,540	61,200	$22.18
Scenario 2	$1,200,000	$186,480	$1,386,480	96,900	$14.31
Scenario 3	$1,462,500	$204,610	$1,667,110	114,750	$14.53
Scenario 4	$1,700,000	$222,740	$1,974,540	130,050	$15.18

D. Annual Operating Subsidy Required

The final evaluation measure calculates the annual subsidy required for each scenario. This calculation takes annual service O&M costs and deducts anticipated passenger fare revenues. Once again, the mid-point of each defined O&M cost range was used. Passenger fare revenues are based on the proposed fare structure defined in Section 7, and assume that various discounts will result in a net collection of 70 percent of the defined cash fares. A total subsidy calculation along with a breakdown by service destination is shown in **Table 9-4**.

For scenarios in which buses are purchased and not leased, Scenario 2 requires the lowest subsidy at an estimated $445,600 annual cost. The most expensive is Scenario 4, requiring $707,000 annually. These rankings hold true in the leased-bus scenarios as well. Scenario 2 has the lowest annual subsidy at $920,600. Scenario 4 required the greatest subsidy at $1,307,700.

Table 9-4
Potential Farebox Revenues and Subsidy Requirements

		Total		Minneapolis		St Paul	
Scenario	Cost/Revenues/Subsidy	With Bus Purchase	With Bus Lease	With Bus Purchase	With Bus Lease	With Bus Purchase	With Bus Lease
1	Annual O&M Cost	$750,000	$1,212,500	*$468,750*	*$757,813*	*$281,250*	*$454,688*
	Potential Farebox Revenues	$182,100	$182,100	$135,700	$135,700	$46,400	$46,400
	Subsidy Required	*$567,900*	*$1,030,400*	*$333,050*	*$622,113*	*$234,850*	*$408,288*
	as % of Annual O&M Cost	*24%*	*15%*	*29%*	*18%*	*16%*	*10%*
2	Annual O&M Cost	$725,000	$1,200,000	*$453,125*	*$750,000*	*$271,875*	*$450,000*
	Potential Farebox Revenues	$279,400	$279,400	$186,550	$186,550	$92,850	$92,850
	Subsidy Required	*$445,600*	*$920,600*	*$266,575*	*$563,450*	*$179,025*	*$357,150*
	as % of Annual O&M Cost	*39%*	*23%*	*41%*	*25%*	*34%*	*21%*
3	Annual O&M Cost	$912,500	$1,462,500	*$570,313*	*$914,063*	*$342,188*	*$548,438*
	Potential Farebox Revenues	$328,000	$328,000	$212,000	$212,000	$116,000	$116,000
	Subsidy Required	*$584,500*	*$1,134,500*	*$358,313*	*$702,063*	*$226,188*	*$432,438*
	as % of Annual O&M Cost	*36%*	*22%*	*37%*	*23%*	*34%*	*21%*
4	Annual O&M Cost	$1,100,000	$1,700,000	*$687,500*	*$1,062,500*	*$412,500*	*$637,500*
	Potential Farebox Revenues	$392,300	$392,300	$258,400	$258,400	$133,900	$133,900
	Subsidy Required	*$707,700*	*$1,307,700*	*$429,100*	*$804,100*	*$278,600*	*$503,600*
	as % of Annual O&M Cost	*36%*	*23%*	*38%*	*24%*	*32%*	*21%*

A comparison of incremental operating costs and anticipated subsidy requirements between Scenarios 2, 3 and 4 has also been created in **Tables 9-5** and **9-6**. These tables provide a means of comparing the base commuter coach service (Scenario 2) to the base commuter service with the addition of midday service (Scenario 3). The table also continues with a comparison of the commuter service with midday hours (Scenario 3) to the service that includes midday and selected trips to Red Wing (Scenario 4).

The comparison finds that operating costs increase between 22 and 26 percent from Scenario 2 to Scenario 3. Operating costs increase between 16 and 21 percent from Scenario 3 to Scenario 4. Factoring in ridership and anticipated farebox revenues creates a slight difference in percentages for operating subsidy requirements. The operating subsidy requirements increase between 21 and 34 percent from Scenario 2 to Scenario 3. The operating subsidy requirements also increase between 15 and 23 percent from Scenario 3 to Scenario 4. These differences can be attributed to the lower ridership levels anticipated with off-peak midday service versus ridership to a less densely populated area during peak commute hours.

Table 9-5
Incremental Comparison of Operating Costs

		Total		Minneapolis		St Paul	
Scenario	**Cost/Revenues/Subsidy**	**With Bus Purchase**	**With Bus Lease**	**With Bus Purchase**	**With Bus Lease**	**With Bus Purchase**	**With Bus Lease**
Scenario 2	Annual O&M Cost	$725,000	$1,200,000	*$453,125*	*$750,000*	*$271,875*	*$450,000*
Scenario 3	Annual O&M Cost	$912,500	$1,462,500	*$570,313*	*$914,063*	*$342,188*	*$548,438*
	$ Difference over Scenario 2	*$187,500*	*$262,500*	*$117,188*	*$164,063*	*$70,313*	*$98,438*
	% Difference over Scenario 2	*26%*	*22%*	*26%*	*22%*	*26%*	*22%*
Scenario 4	Annual O&M Cost	$1,100,000	$1,700,000	*$687,500*	*$1,062,500*	*$412,500*	*$637,500*
	$ Difference over Scenario 2	*$187,500*	*$237,500*	*$117,188*	*$148,438*	*$70,313*	*$89,063*
	% Difference over Scenario 2	*21%*	*16%*	*21%*	*16%*	*21%*	*16%*

Table 9-6
Incremental Comparison of Operating Subsidy

		Total		Minneapolis		St Paul	
Scenario	**Cost/Revenues/Subsidy**	**With Bus Purchase**	**With Bus Lease**	**With Bus Purchase**	**With Bus Lease**	**With Bus Purchase**	**With Bus Lease**
Scenario 2	Annual Subsidy Required	$445,600	$920,600	*$266,575*	*$563,450*	*$179,025*	*$357,150*
Scenario 3	Annual Subsidy Required	$584,500	$1,134,500	*$358,313*	*$702,063*	*$226,188*	*$432,438*
	$ Difference over Scenario 2	*$138,900*	*$213,900*	*$91,738*	*$138,613*	*$47,163*	*$75,288*
	% Difference over Scenario 2	*31%*	*23%*	*34%*	*25%*	*26%*	*21%*
Scenario 4	Annual Subsidy Required	$707,700	$1,307,700	*$429,100*	*$804,100*	*$278,600*	*$503,600*
	$ Difference over Scenario 2	*$123,200*	*$173,200*	*$70,787*	*$102,037*	*$52,412*	*$71,162*
	% Difference over Scenario 2	*21%*	*15%*	*20%*	*15%*	*23%*	*16%*

10. Recommended Scenario

To arrive at a recommended scenario, a matrix was created that summarizes results from the evaluation measures that were presented in Chapter 9. Rankings were separated between scenarios with and scenarios without bus leasing. **Table 10-1** presents results for each effectiveness measure as well as a comprehensive ranking. The ranking system is based on a four-point system, with 1 being given to the highest-rated scenario for a specific measure and 4 to the lowest-rated scenario.

Table 10-1
Comprehensive Ranking of Scenarios

Effectiveness Measure	Scenarios With Bus Purchase				Scenarios With Bus Leasing			
	1	2	3	4	1	2	3	4
Cost per Passenger Trip	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Cost per In-Service Hour	3rd	4th	1st	2nd	3rd	4th	2nd	1st
Riders per Trip	4th	2nd	3rd	1st	4th	2nd	3rd	1st
Riders per In-Service Hour	4th	1st	2nd	3rd	4th	1st	2nd	3rd
Annual Cost per Passenger Trip (O&M + Capital)	4th	3rd	2nd	1st	4th	1st	2nd	3rd
Annual Subsidy	2nd	1st	3rd	4th	2nd	1st	3rd	4th
Comprehensive Score	4th	1st	2nd	3rd	4th	1st	2nd	3rd

Scenario 1 clearly performed the poorest in all but two criteria. Scenario 2 was the strongest of the four options, scoring best in three of the six measures with bus purchase and four of the six measures with bus lease. Thus, using the performance measures defined in this Study, Scenario 2 is recommended as an initial commuter bus service plan in the Red Rock corridor, with the implementation of Scenarios 3 and/or 4 to be discussed from the larger perspective of policy-making.

It is also recommended that bus leasing be explored for the initial introduction of commuter bus service in this corridor. Outsourcing the operation as well as the vehicles will allow the governmental entity that manages the service the opportunity to test the service before making a full capital commitment into purchasing vehicles. Leasing will also allow for implementation of and/or adjustments to the service more readily as a

service provider is more likely to have buses readily available. Purchasing buses are traditionally a long a cumbersome process through standard government procurement processes, taking anywhere between 18 months and two years to complete.

Finally, this project's Technical Advisory Committee (TAC) requested the consultant team to consider the potential of reducing Scenario 2's schedule to Minneapolis from 10 trips to 8 trips (four trips in each peak period). The six daily trips to/from St. Paul would remain unchanged. This adjustment to the number of trips to/from Minneapolis would determine what – if any -- potential cost savings might be realized. The range of both capital and operating costs prepared for this Study is rather wide, and juxtaposed with the current economic climate and continuing competition for finite sources of transit funding, the TAC expressed the desire to explore this sub-option.

This modification to the Minneapolis service reduces the vehicle requirement by one bus (instead of the eight peak/ten fleet buses, the revised schedule would require seven peak/nine fleet buses). Annual in-service hours are also reduced from 4,080 to 3,500.

With regards to ridership impacts, the original Scenario 2 was assumed to carry 220 transit trips per day to and from downtown Minneapolis, or about 22 passengers per trip. It is assumed that one-half of these passengers would shift to remaining trips, and the remaining one-half may not occur, thus resulting in a loss of about 20 daily transit trips. Thus, revised ridership projections for the Alternate Scenario 2 are as follows:

Table 10-2
Gross Ridership Projections for Alternate Scenario 2

Scenario	Gross Number of Transit Trips			
	Minneapolis Service	St. Paul Service	Daily Total	Annual Total
Scenario 2 10 Daily Trips to/from Minneapolis	220	160	380	96,900
Alternate Scenario 2 8 Daily Trips to/from Minneapolis	200	160	360	91,800

Operating and Maintenance costs have also been recalculated for the alternate scenario. The impacts of those adjustments are shown in **Table 10-3**.

Table 10-3
Estimate of O&M Costs (2009 dollars) for Alternate Scenario 2

Scenario	With Bus Purchase		With Bus Leasing	
	Low range	High Range	Low Range	High Range
Scenario 2 Ten Daily Trips to/from Minneapolis	$600,000	$850,000	$1,025,000	$1,375,000
Alternate Scenario 2 Eight Daily Trips to/from Minneapolis	$525,000	$750,000	$875,000	$1,225,000

The original estimate of O&M costs with bus purchase ranged from $600,000 to $850,000. Thus, the reduction in Minneapolis service is estimated to save $75,000 to $100,000 in annual O&M costs for a scenario that does not include bus leasing. The original estimate of O&M costs with bus leasing ranged from $1.025 to $1.375 million. Thus, the reduction in Minneapolis service is estimated to save about $150,000 in annual O&M costs for a scenario that does include bus leasing.

The annual operating subsidy required is also reduced. As was noted in Table 8-4, the annual subsidy required for Scenario 2 without bus leasing was about $450,000. That number is reduced to $375,000 with the reduced service to Minneapolis. The annual subsidy with bus leasing was previously $920,000. That number is reduced to $725,000 with the reduced service to Minneapolis. Thus, the reduction of two trips to/from Minneapolis could potentially reduce the operating subsidy by $75,000 if buses are purchased and just under $200,000 if buses are leased.

APPENDIX A – EXAMPLE BUS SCHEDULES

Scenario 1 – Route 361

Northbound to St. Paul				
Peak Period	Hastings Depot Park-and-Ride	Cottage Grove Park-and-Ride	15th & Hastings Ave	6th & Cedar
AM	---	5:36	---	6:00
	5:43	**6:03**	**---**	**6:27**
	n/a	6:16	---	6:43
	6:12	**6:32**	**---**	**7:00**
	n/a	6:42	---	7:10
	n/a	*7:09*	---	*7:38*
	6:57	**7:17**	**---**	**7:45**
	---	7:40	---	8:07
PM	---	3:45	3:54	4:12
	---	4:45	4:54	5:12
	---	5:45	5:54	6:12

Trips shown in **Bold** are new trips.

Southbound from St. Paul					
Peak Period	5th & Minnesota	Lower Afton PnR	15th & Hastings Ave	Cottage Grove Park-and-Ride	Hastings Depot Park-and-Ride
AM	6:06	6:16	6:22	6:31	n/a
	7:00	7:10	7:16	7:25	n/a
PM	3:15	3:27	-	3:40	n/a
	3:47	3:59	-	4:12	n/a
	4:10	**4:22**	**-**	**4:35**	**4:55**
	4:15	4:27	-	4:40	n/a
	4:40	**4:52**	**-**	**5:05**	**5:17**
	4:47	*4:59*	-	*5:12*	*n/a*
	5:10	**5:22**	**-**	**5:35**	**5:35**
	5:15	5:27	-	5:40	n/a
	6:15	6:27	-	6:40	n/a

Trips shown in **Bold** are new trips.

Scenario 1 – Route 365

Northbound to Minneapolis			
Peak Period	Hastings Depot Park-and-Ride	Cottage Grove PnR	7th & Hennepin
AM	---	5:50	6:30
	5:40	**6:00**	**6:40**
	---	6:05	6:45
	6:00	**6:20**	**7:00**
	---	6:33	7:15
	6:28	**6:48**	**7:30**
	---	6:53	7:39
	6:39	**6:59**	**7:45**
	---	7:03	7:51
	---	7:24	8:14
	7:10	**7:30**	**8:20**
	---	7:35	8:25
PM		4:35	5:20

Trips shown in **Bold** are new trips.

Southbound from Minneapolis				
Peak Period	5th St. Transit Ctr.	6th & Hennepin	Cottage Grove PnR	Hastings Depot Park-and-Ride
AM	-	6:35	7:20	---
	-	6:45	7:30	---
PM	3:42	3:45	4:30	---
	3:50	**3:53**	**4:38**	**4:58**
	4:07	4:10	4:58	---
	4:12	4:15	5:03	---
	4:15	**4:18**	**5:06**	**5:26**
	4:27	4:30	5:20	---
	4:35	**4:38**	**5:28**	**5:48**
	4:41	4:44	5:36	---
	4:50	**4:53**	**5:45**	**6:05**
	5:11	5:14	6:06	---
	5:20	**5:23**	**6:15**	**6:35**
	5:34	5:37	6:23	---

Trips shown in Bold are new trips.

Scenario 2

AM Northbound to St. Paul and Minneapolis			
Destination	Hastings Depot Park-and-Ride	6th & Cedar (St. Paul)	7th & Hennepin (Minneapolis)
Minneapolis	5:40 AM	---	6:40 AM
St. Paul	5:53 AM	6:40 AM	---
Minneapolis	6:10 AM	---	7:10 AM
St. Paul	6:32 AM	7:20 AM	---
Minneapolis	6:24 AM	---	7:30 AM
Minneapolis	6:42 AM	---	7:50 AM
Minneapolis	7:00 AM	---	8:10 AM
St. Paul	7:13 AM	8:00 AM	---

PM Southbound from St. Paul and Minneapolis				
Origin	5th St. Tr. Ctr. (Minneapolis)	6th & Hennepin (Minneapolis)	5th & Minn. (St. Paul)	Hastings Depot Park-and-Ride
St. Paul	---	---	3:45 PM	4:29 PM
Minneapolis	3:50 PM	3:53 PM	---	4:55 PM
Minneapolis	4:10 PM	4:13 PM	---	5:18 PM
Minneapolis	4:30 PM	4:33 PM	---	5:40 PM
St. Paul	---	---	4:30 PM	5:14 PM
Minneapolis	5:00 PM	5:03 PM	---	6:12 PM
St. Paul	---	---	5:20 PM	6:04 PM
Minneapolis	5:20 PM	5:23 PM	---	6:32 PM

Scenario 3

Northbound to St. Paul and Minneapolis			
Destination	Hastings Depot Park-and-Ride	6th & Cedar (St. Paul)	7th & Hennepin (Minneapolis)
Minneapolis	5:40 AM	---	6:40 AM
St. Paul	5:53 AM	6:40 AM	---
Minneapolis	6:10 AM	---	7:10 AM
St. Paul	6:32 AM	7:20 AM	---
Minneapolis	6:24 AM	---	7:30 AM
Minneapolis	6:42 AM	---	7:50 AM
Minneapolis	7:00 AM	---	8:10 AM
St. Paul	7:13 AM	8:00 AM	---
Both	7:40 AM	8:27 AM	9:02 AM
Both (midday)	1:30 PM	2:17 PM	2:52 PM

Note: Midday trip would also stop at Newport & Cottage Grove park-and-ride lots.

Southbound from St. Paul and Minneapolis				
Origin	5th St. Tr. Ctr. (Minneapolis)	6th & Hennepin (Minneapolis)	5th & Minn. (St. Paul)	Hastings Depot Park-and-Ride
Both (midday)	11:50 AM	11:53 AM	12:28 PM	1:12 PM
St. Paul	---	---	3:45 PM	4:29 PM
Minneapolis	3:50 PM	3:53 PM	---	4:55 PM
Minneapolis	4:10 PM	4:13 PM	---	5:18 PM
Minneapolis	4:30 PM	4:33 PM	---	5:40 PM
St. Paul	---	---	4:30 PM	5:14 PM
Minneapolis	5:00 PM	5:03 PM	---	6:12 PM
St. Paul	---	---	5:20 PM	6:04 PM
Minneapolis	5:20 PM	5:23 PM	---	6:32 PM
Both	5:40 PM	5:43 PM	6:18 PM	7:02 PM

Note: Midday trip would also stop at Newport & Cottage Grove park-and-ride lots.

Scenario 4

Northbound to St. Paul and Minneapolis				
Destination	Red Wing/ Prairie Island[1]	Hastings Depot Park-and-Ride	6th & Cedar (St. Paul)	7th & Hennepin (Minneapolis)
Minneapolis	---	5:40 AM	---	6:40 AM
St. Paul	---	5:53 AM	6:40 AM	---
Minneapolis	---	6:10 AM	---	7:10 AM
St. Paul	6:02 AM	6:32 AM	7:20 AM	---
Minneapolis	5:54 AM	6:24 AM	---	7:30 AM
Minneapolis	---	6:42 AM	---	7:50 AM
Minneapolis	6:30 AM	7:00 AM	---	8:10 AM
St. Paul	6:43 AM	7:13 AM	8:00 AM	---
Both	---	7:40 AM	8:27 AM	9:02 AM
St. Paul (midday)[2]	---	1:30 PM	2:17 PM	2:52 PM

[1] *Future phases of the project will need to determine the exact routing between a park-and-ride serving the Prairie Island Indican Community and City of Red Wing to ensure travel time and cost efficiencies while optimizing ridership.*

[2] *Midday trip would also stop at Newport & Cottage Grove park-and-ride lots.*

Southbound from St. Paul and Minneapolis					
Origin	5th St. Tr. Ctr. (Minneapolis)	6th & Hennepin (Minneapolis)	5th & Minn. (St. Paul)	Hastings Depot Park-and-Ride	Red Wing/ Prairie Island[1]
St. Paul (midday)[2]	11:50 AM	11:53 AM	12:28 PM	1:12 PM	---
St. Paul	---	---	3:45 PM	4:29 PM	---
Minneapolis	3:50 PM	3:53 PM	---	4:55 PM	---
Minneapolis	4:10 PM	4:13 PM	---	5:18 PM	5:48 PM
Minneapolis	4:30 PM	4:33 PM	---	5:40 PM	---
St. Paul	---	---	4:30 PM	5:14 PM	5:44 PM
Minneapolis	5:00 PM	5:03 PM	---	6:12 PM	6:42 PM
St. Paul	---	---	5:20 PM	6:04 PM	6:34 PM
Minneapolis	5:20 PM	5:23 PM	---	6:32 PM	---
St. Paul	5:40 PM	5:43 PM	6:18 PM	7:02 PM	---

[1] *Future phases of the project will need to determine the exact routing between a park-and-ride serving the Prairie Island Indican Community and City of Red Wing to ensure travel time and cost efficiencies while optimizing ridership.*

[2] *Midday trip would also stop at Newport & Cottage Grove park-and-ride lots.*

APPENDIX B – Capital Cost Estimates

Scenario 1

SCENARIO 1 - Supplement Routes 361 and 365 with Extension to Hastings					
Description	Quantity	Unit	Unit Cost		Extension
1 Park-and-Ride Facility					
1 Surface parking stall	280	EA	$ 3,500	$	980,000
New Hastings Park-and-Ride	135				
New Newport Park-and-Ride	115				
Lower Afton Park-and-Ride Expansion	30				
Subtotal				*$*	*980,000*
2 Maintenance Facility Allowance					
1 Allowance per additional bus	9	EA	$ 200,000	$	1,800,000
Subtotal				*$*	*1,800,000*
3 Vehicles					
1 Standard 40-foot bus - with 20 percent spare ratio	9	EA	$ 350,000	$	3,150,000
2 Commuter coach - with 20 percent spare ratio	-	EA	$ 500,000	$	-
3 AVL/GPS equipment	9	EA	$ 35,000	$	315,000
Subtotal				*$*	*3,465,000*
4 Engineering and Administration	18%	LS	$ 6,245,000	$	1,124,100
Subtotal				*$*	*1,124,100*
5 Contingency					
1 Infrastructure	30%	LS	$ 2,780,000	$	834,000
2 Vehicles	5%	LS	$ 3,465,000	$	173,250
Subtotal				*$*	*1,007,250*
Total Estimated Capital Cost with Bus Purchase:				**$**	**8,376,350**
Total Estimated Capital Cost with Bus Leasing:				**$**	**1,450,400**

Scenario 2

SCENARIO 2 - New Commuter Coach Service to Hastings					
Description	Quantity	Unit	Unit Cost	Extension	
1 Park-and-Ride Facility					
1 Surface parking stall	360	EA	$ 3,500	$ 1,260,000	
New Hastings Park-and-Ride	215				
New Newport Park-and-Ride	115				
Lower Afton Park-and-Ride Expansion	30				
Subtotal				$ *1,260,000*	
2 Maintenance Facility Allowance					
1 Allowance per additional bus	10	EA	$ 200,000	$ 2,000,000	
Subtotal				$ *2,000,000*	
3 Vehicles					
1 Standard 40-foot bus - with 20 percent spare ratio	-	EA	$ 350,000	$ -	
2 Commuter coach - with 20 percent spare ratio	10	EA	$ 500,000	$ 5,000,000	
3 AVL/GPS equipment	10	EA	$ 35,000	$ 350,000	
Subtotal				$ *5,350,000*	
4 Engineering and Administration	18%	LS	$ 8,610,000	$ 1,549,800	
Subtotal				$ *1,549,800*	
5 Contingency					
1 Infrastructure	30%	LS	$ 3,260,000	$ 978,000	
2 Vehicles	5%	LS	$ 5,350,000	$ 267,500	
Subtotal				$ *1,245,500*	
Total Estimated Capital Cost with Bus Purchase:				**$ 11,405,300**	
Total Estimated Capital Cost with Bus Leasing:				**$ 1,864,800**	

Scenario 3

SCENARIO 3 - New Commuter Coach Service to Hastings with Mid-Day Service				
Description	Quantity	Unit	Unit Cost	Extension
1 Park-and-Ride Facility				
1 Surface parking stall	395	EA	$ 3,500	$ 1,382,500
New Hastings Park-and-Ride	250			
New Newport Park-and-Ride	115			
Lower Afton Park-and-Ride Expansion	30			
Subtotal				*$ 1,382,500*
2 Maintenance Facility Allowance				
1 Allowance per additional bus	10	EA	$ 200,000	$ 2,000,000
Subtotal				*$ 2,000,000*
3 Vehicles				
1 Standard 40-foot bus - with 20 percent spare ratio	-	EA	$ 350,000	$ -
2 Commuter coach - with 20 percent spare ratio	10	EA	$ 500,000	$ 5,000,000
3 AVL/GPS equipment	10	EA	$ 35,000	$ 350,000
Subtotal				*$ 5,350,000*
4 Engineering and Administration	18%	LS	$ 8,732,500	$ 1,571,850
Subtotal				*$ 1,571,850*
5 Contingency				
1 Infrastructure	30%	LS	$ 3,382,500	$ 1,014,750
2 Vehicles	5%	LS	$ 5,350,000	$ 267,500
Subtotal				*$ 1,282,250*
Total Estimated Capital Cost with Bus Purchase:				**$ 11,586,600**
Total Estimated Capital Cost with Bus Leasing:				**$ 2,046,100**

Scenario 4

SCENARIO 4 - New Commuter Coach Service to Hastings and Red Wing				
Description	Quantity	Unit	Unit Cost	Extension
1 Park-and-Ride Facility				
1 Surface parking stall	530	EA	$ 3,500	$ 1,855,000
New Hastings Park-and-Ride	285			
New Newport Park-and-Ride	115			
Lower Afton Park-and-Ride Expansion	30			
New Red Wing Park-and-Ride	50			
New Prairie Island Park-and-Ride	50			
Subtotal				*$ 1,855,000*
2 Maintenance Facility Allowance				
1 Allowance per additional bus	10	EA	$ 200,000	$ 2,000,000
Subtotal				*$ 2,000,000*
3 Vehicles				
1 Standard 40-foot bus - with 20 percent spare ratio	-	EA	$ 350,000	$ -
2 Commuter coach - with 20 percent spare ratio	10	EA	$ 500,000	$ 5,000,000
3 AVL/GPS equipment	10	EA	$ 35,000	$ 350,000
Subtotal				*$ 5,350,000*
4 Engineering and Administration	18%	LS	$ 9,205,000	$ 1,656,900
Subtotal				*$ 1,656,900*
5 Contingency				
1 Infrastructure	30%	LS	$ 3,855,000	$ 1,156,500
2 Vehicles	5%	LS	$ 5,350,000	$ 267,500
Subtotal				*$ 1,424,000*
Total Estimated Capital Cost with Bus Purchase:				**$ 12,285,900**
Total Estimated Capital Cost with Bus Leasing:				**$ 2,745,400**

Alternate Scenario 2[13]

ALTERNATE SCENARIO 2 - New Commuter Coach Service to Hastings (8 Trips to/from Minneapolis)					
Description	Quantity	Unit	Unit Cost	Extension	
1 Park-and-Ride Facility					
1 Surface parking stall	350	EA	$ 3,500	$ 1,225,000	
Subtotal				*$ 1,225,000*	
2 Maintenance Facility Allowance					
1 Allowance per additional bus	9	EA	$ 200,000	$ 1,800,000	
Subtotal				*$ 1,800,000*	
3 Vehicles					
1 Standard 40-foot bus - with 20 percent spare ratio	-	EA	$ 350,000	$ -	
2 Commuter coach - with 20 percent spare ratio	9	EA	$ 500,000	$ 4,500,000	
3 AVL/GPS equipment	9	EA	$ 35,000	$ 315,000	
Subtotal				*$ 4,815,000*	
4 Engineering and Administration	18%	LS	$ 7,840,000	$ 1,411,200	
Subtotal				*$ 1,411,200*	
5 Contingency					
1 Infrastructure	30%	LS	$ 3,025,000	$ 907,500	
2 Vehicles	5%	LS	$ 4,815,000	$ 240,750	
Subtotal				*$ 1,148,250*	
Total Estimated Capital Cost with Bus Purchase:				**$ 10,399,450**	
Total Estimated Capital Cost with Bus Leasing:				**$ 1,813,000**	

[13] *Alternate Scenario 2 entails reducing the number of trips to/from Minneapolis from 10 to 8; commuter coach fleet requirements from 10 to 9 vehicles; and parking demand by approximately 10 spaces.*

Technical Memorandum #4: Implementation Plan

Commuter Bus Feasibility Study



Prepared by:
Connetics Transportation Group

Under Contract to:

URS

July 30, 2009

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1.0 Introduction

In 2007, an Alternatives Analysis was completed for the Red Rock Corridor. Recommendations for the short term called for commuter coach bus service to connect residents in the southern portions of Washington County and Dakota County with the central business districts of Minneapolis and St. Paul. As a result, the Commuter Bus Feasibility Study was kicked-off in October 2008 with the intent of increasing transit ridership and adding/expanding local park-and-ride facilities in a manner that supports the Corridor's long-range vision for commuter rail service. The study examines the feasibility of commuter bus service to Hastings, Red Wing and the Prairie Island Indian Community.

The project scope has four parts:

- Assess travel needs within the Corridor
- Develop operating concepts to serve travel needs
- Evaluate operating concepts
- Develop recommended service plan with the following components:
    - Service delivery
    - Financial plan
    - Implementation plan.

This Technical Memorandum provides support for the final bullet item by defining the necessary steps to ultimately implement the preferred commuter bus service. This Technical Memorandum begins with a description of the recommended commuter bus service plan. Management and oversight responsibilities are then described, followed by fare policy and funding requirements. The procurement process is then discussed, followed by other implementation considerations. This Technical Memorandum concludes with a suggested implementation schedule.

2.0 Preferred Service Plan

Over the course of the Red Rock Corridor Commuter Bus Feasibility Study, six Technical Advisory Committee (TAC) meetings consisting of representatives from Corridor Counties and Cities, the Prairie Island Indian Community, the Metropolitan Council, Metro Transit and the Minnesota Department of Transportation (Mn/DOT) were held to develop and review potential operating alignments and segments. Initially, four scenarios were created with the main routing via Trunk Highway (TH) 61 to serve Hastings and with final destinations in both downtown Minneapolis and downtown St. Paul (both via I-94). The first three only traveled as far as Hastings with variations in service span and intermediate stops. The fourth scenario was the longest, bringing service further south to the Prairie Island Indian Community and the City of Red Wing.

Ultimately, the stakeholders selected a modified version of the second scenario. This version provides eight daily trips (four in the morning and four in the afternoon) between Hastings and Minneapolis and six daily trips (three in the morning and three in the afternoon) between Hastings and St. Paul. This scenario was the most direct with no deviations off of TH 61 as shown in Figure 2-1. Service would operate on weekdays only. A map of the preferred alignment in Hastings and proposed park-and-ride at the Hastings Depot is shown in Figure 2-2 as well as the respective downtown alignments to St. Paul (Figure 2-3) and Minneapolis (Figure 2-4). Proposed alignments in downtown Minneapolis and St. Paul mirror alignments currently utilized by Metro Transit Route 365 (Cottage Grove-Minneapolis) and Route 361 (Cottage Grove-St. Paul). Proposed schedules are presented in Tables 2-1 and 2-2. Resulting service requirements for the Hastings-Minneapolis and Hastings-St. Paul bus routes are as follows:

- Peak Bus Requirement = 7
- Annual In-Service Bus-Hours = 3,500
- Annual In-Service Bus-Miles = 96,900.

Projected ridership is 200 riders per day on the Minneapolis route and 160 riders per day on the St. Paul route. Annual ridership projections for the two routes are 91,800 passenger trips.

Figure 2-1
Proposed Hastings-Minneapolis and Hastings St. Paul Routing (Preferred Scenario)



Figure 2-2
Proposed Routing in Hastings



Figure 2-3
Proposed Downtown St. Paul Alignment[1]

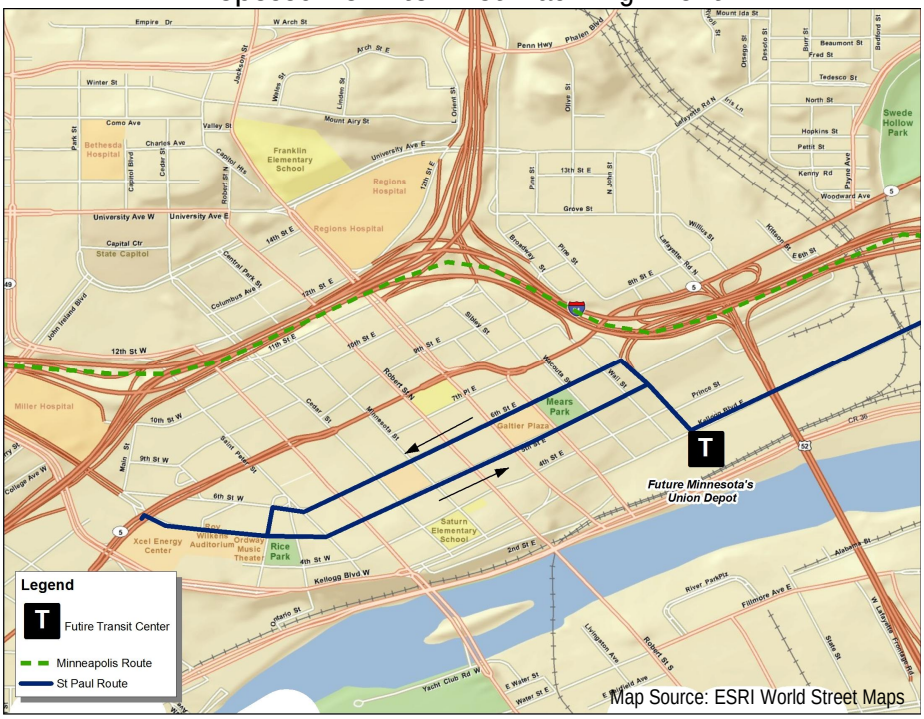
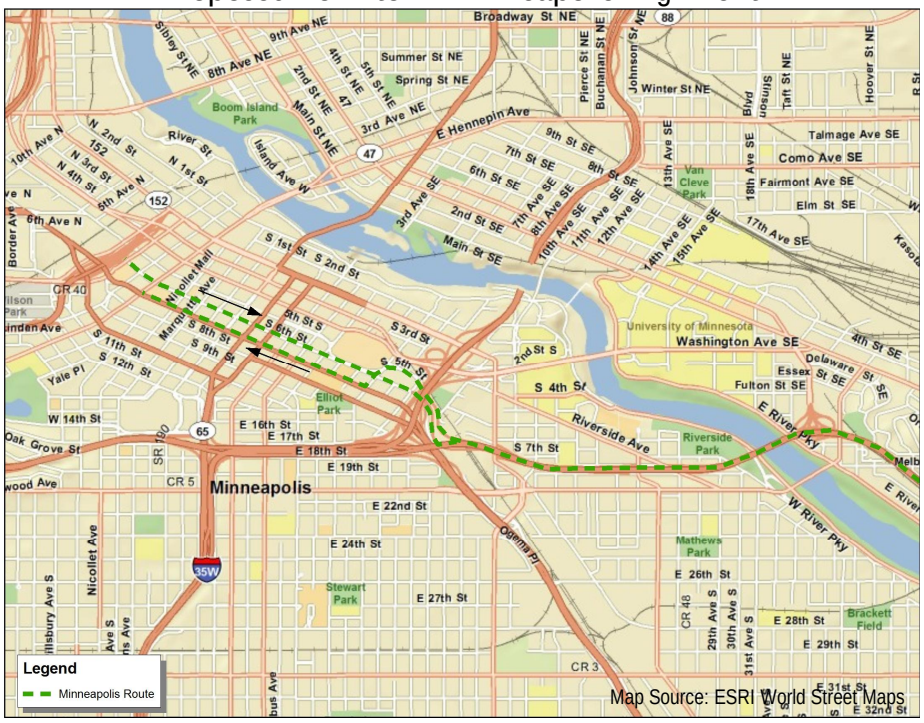


Figure 2-4
Proposed Downtown Minneapolis Alignment



[1] The routing of the proposed Red Rock commuter bus service through downtown St. Paul is subject to modifications with the restoration of Minnesota's Union Depot into an intermodal facility in 2012.

Table 2-1
Proposed Weekday Morning Schedule

AM Northbound to St. Paul and Minneapolis			
Destination	Hastings Depot Park-and-Ride	6th & Cedar (St. Paul)	7th & Hennepin (Minneapolis)
Minneapolis	5:40 AM	---	6:40 AM
St. Paul	5:53 AM	6:40 AM	---
Minneapolis	6:10 AM	---	7:10 AM
St. Paul	6:32 AM	7:20 AM	---
Minneapolis	6:24 AM	---	7:30 AM
Minneapolis	6:42 AM	---	7:50 AM
St. Paul	7:13 AM	8:00 AM	---

Table 2-2
Proposed Weekday Afternoon Schedule

PM Southbound from St. Paul and Minneapolis				
Origin	5th St. Tr. Ctr. (Minneapolis)	6th & Hennepin (Minneapolis)	5th & Minn. (St. Paul)	Hastings Depot Park-and-Ride
St. Paul	---	---	3:45 PM	4:29 PM
Minneapolis	4:00 PM	4:03 PM	---	5:08 PM
Minneapolis	4:20 PM	4:23 PM	---	5:30 PM
St. Paul	---	---	4:30 PM	5:14 PM
Minneapolis	4:50 PM	4:53 PM	---	6:02 PM
St. Paul	---	---	5:20 PM	6:04 PM
Minneapolis	5:10 PM	5:13 PM	---	6:22 PM

3.0 Management and Oversight

The first step towards implementing expanded commuter bus service in the Red Rock Corridor is to determine who will be the responsible agent for management and oversight of the service. The Technical Advisory Committee (TAC) has identified the following two potential responsible agents:

Option 1: Metropolitan Council (Metro Transit)

Existing bus service in the Red Rock Corridor on Routes 361, 364 and 365 is currently managed and operated by Metro Transit as part of their regional fleet. As part of this study, Metro Transit has prepared an alternative conceptual service plan for expanded bus service along the Corridor that includes the preferred extension of service from Minneapolis and St Paul to Hastings. A key advantage of this option is Metro Transit's in-house technical expertise to manage daily operations. In addition, there may be efficiencies provided when integrating the proposed service plan into the existing operations of Metro Transit, since the proposed service plan could use some of the same bus stops and follows similar routings as their existing service in the Corridor.

However, Metro Transit's long-range plans do not identify implementing the expansion of express bus service and construction of a new park-and-ride in Hastings until between 2013 and 2030. Funds have also not been committed at this point. If it is the desire to pursue this option, with Metro Transit to remain the responsible agent, then the recommended course of action is to continue to advocate for and coordinate with the Metropolitan Council and Metro Transit on the service extension. However, the pursuit of this option will not guarantee that service will be expanded within the next 12 to 18 months, which was a goal of this study.

Option 2: Red Rock Corridor Commission

The Red Rock Corridor Commission could be the responsible agent and take the lead in implementing the preferred expanded service scenario. The Red Rock Corridor Commission would be responsible for obtaining funding for both the capital and operating expenses. (Potential funding sources are discussed in more detail in Section 4.2 of this Technical Memorandum.) This scenario is similar to the existing arrangement for Route 888 (Elk River) commuter coach service. The Northstar Corridor Development Authority (NCDA) is the responsible agent for the service and contracts the service to a private operator (Laidlaw). If this option is pursued, the Red Rock Corridor Commission will need to determine if the preferred operating service scenario will be implemented for a short term period as a demonstration project (typically from one to three years) or as a permanent service that will need to be funded on an annual basis.

The following section assumes that the Red Rock Corridor Commission could be the responsible agent and take the lead in implementing the preferred expanded service scenario.

3.1 Daily Operations Management

If the Red Rock Corridor Commission is assumed to be the responsible agent for the service, the day-to-day management and oversight must be considered and designated to a governmental entity. While this is not expected to consume a full-time position, there will be significant effort required toward the initial implementation of the service. It is anticipated that a significant amount of time and resources will be required leading up to the service start date. Less time will be required after the service is established, perhaps requiring 30 to 50 percent of an individual's time.

Responsibilities prior to service start-up include service contract development and procurement; vehicle and equipment procurement; facilities development; and preparation of a marketing plan. Responsibilities after service start-up are likely to include continued marketing efforts; service contract management; and service monitoring. Some functions may be provided by the contracted service provider, depending on the provisions in the service contract.

Coordination of all functions should funnel through one governmental entity, with one staff person within that governmental entity ultimately responsible for the management of daily operations. The Red Rock Corridor Commission must ultimately designate the governmental entity that will oversee daily operations. Options include one of the Corridor Commission Counties or an entity that already has experience operating transit service, such as the Minnesota Valley Transit Authority (MVTA) or the Metropolitan Council (Metro Transit). By way of example, the Northstar Corridor Development Authority (NCDA), the joint powers board that funds the Route 888 (Northstar Commuter Coach), has an agreement with Anoka County to oversee the daily operations and administration of the service that is provided through a contract with Laidlaw.

3.2 Service Contracting and Staffing

Based on input from the Red Rock Corridor Technical Committee, there is a preference to initially contract the service rather than directly operate the service. Contracting allows the Commission to "test the waters" on a short-term basis without fully committing to the staffing and capital expenditures required to operate the service directly. Should the service prove successful, a longer-term contract could be sought or the Commission could eventually pursue direct operation. If the service does not meet ridership expectations, the Commission could choose to let the service provider contract expire, and the Commission's loss is minimized.

Typically, there are three primary areas where staffing requirements need to be met – Administrative, Operations and Maintenance. Administrative functions include Accounting, Human Resources, Procurement and Customer Service. Some of these functions may already

be present within the Red Rock member county governments. However, transit is a unique operation that requires a level of industry-specific expertise. To minimize the Commission's staffing commitment, it is recommended these functions be included in the service provider contract. Given the limited size of the proposed Red Rock commuter bus operations, some of these functions can likely be combined with minimal staffing requirements by the contracted service provider.

Operations-related tasks are labor-intensive and involve the actual day-to-day delivery of the service. Staff who are responsible for actual bus operations are the individuals with the most interaction with the customers. Their interpersonal skills and their safe driving abilities will be critical. This group will have some of the most stringent hiring and training requirements. Care should be taken to ensure all hires meet the required background checks, licensing and training. Operators should also be proficient in English and able to communicate effectively with their clientele. Besides bus operators, an appropriate level of supervision will be required. Supervisory personnel will be responsible for monitoring and reporting on-time performance as well as responding to any accidents or in-field incidents that require attention. Dispatching functions also fall into this category. In the case of the proposed Red Rock commuter coach service, the selection and hiring of operations staff will be part of the service contract.

The final staffing group is Maintenance. This segment ensures the safe and cost-effective maintenance of the vehicles, equipment and facilities. It is possible that vehicles and the bus maintenance facility will be included as a requirement of the contracted service provider. Should that be the case, expenses related to vehicle and bus facility maintenance will be included in the contracted service provider's charges. It is imperative that the Red Rock Corridor Commission make certain these items are appropriately addressed in the service provider contract to guarantee safe vehicle maintenance and appropriate life-span. Maintenance employees should be properly licensed and trained in their areas of expertise where applicable. Staffing levels should be specified to ensure adequate maintenance levels, both routine and preventative. Within the contract, a standard should be set for minimum service interruptions due to mechanical failure. Regular reporting of this standard must occur on a monthly and annual basis to ensure contract compliance. Overnight maintenance operations may also be considered to allow maximum non-interrupted repair time without disrupting daily operations.

4.0 Fare Policy and Funding

Technical Memorandum #3 (*Development and Evaluation of Alternatives*) identifies a potential annual operating and maintenance cost of $875,000 to $1,225,000 for the proposed service plan (assumes bus leasing through the selected contract service provider. This cost estimate is based on contract cost experiences for the Route 288 (Forest Lake service provided by the Metropolitan Council through a contract with Lorenz) and Route 888 (Northstar/Elk River service provided by the Northstar Corridor Development Authority through a contract with Laidlaw).

4.1 Fare Policy

The proposed cash fare for a one-way trip recommended in Technical Memorandum #3 was as follows:

- Hastings to St. Paul - $3.25
- Hastings to Minneapolis - $4.75.[2]

The proposed fares are comparable to fares on Routes 288 and 888. For comparison purposes, Metro Transit fares for Routes 361 and 365 from Cottage Grove are $3.00.

Persons with disabilities qualify for a reduced fare of 75¢ throughout the region. For simplicity and consistency, it is recommended that the Red Rock service also honor this policy. Consideration must also be given to multiple ride and student discounts. For example, Route 888 (Northstar Commuter Coach) honors regional farecards including the 31-day Super Saver, Metro Pass and U Pass.

The majority of the Red Rock commuter service's passengers will be downtown workers whose trips will be accomplished with a single route. However, there may be a need for some passengers to connect or transfer to other providers in the region, most likely Metro Transit. Fare reciprocity should be discussed with Metro Transit early in the process. It would be beneficial to include other regional providers as well to ensure full integration into the regional transit network.

Besides fare rates, cash handling must also be considered. Each transit coach should be equipped with the regionally approved electronic farebox, capable of recognizing and processing "smart card" technology. The maintenance facility where buses are parked overnight should have farebox probing and vaulting capabilities. Probing is the process where daily revenue and ridership data is extracted from each farebox to be used for reporting and auditing purposes. Vaulting is the method of securely removing monies from the buses at the

[2] These proposed fares will be reviewed as part of the next steps towards service implementation, and will be done to ensure that proposed fares can be properly accommodated within the regional fare system.

conclusion of their runs and "dumping" them into a vault for processing and deposit. It will be important to include these provisions in the specifications when selecting a service provider.

4.2 Additional Funding Requirements

In Technical Memorandum #3 (*Development and Evaluation of Alternatives*) and for the purpose of this analysis, it was assumed that discounted fares result in a net collection of 70 percent of the defined cash fares. That results in a net subsidy requirement of $788,100, using the mid-point of the operating and maintenance (O&M) cost estimate range. A funding source will need to be identified to cover this subsidy requirement prior to start of service. Commitment to funding the proposed commuter bus service is crucial to implementation and cannot be emphasized enough. Potential sources include:

- *Congestion Mitigation and Air Quality (CMAQ) Improvement Program.* According to the October 2008 Final Program Guidance of the Federal Highway Administration's (FHWA) web site: "The purpose of the CMAQ program is to fund transportation projects or programs that will contribute to attainment or maintenance of national ambient air quality standards for ozone, carbon monoxide and particulate matter." CMAQ grants are often used for transit demonstration projects and provide a funding commitment for three years. CMAQ funds are distributed through the Metropolitan Council and require an application and approval process. The Metropolitan Council accepts applications on the odd years, most recently on June 15, 2009. The Council will review this last batch of applications in the next several months using stringent criteria developed by the FHWA specifically for this program, and will identify the qualifying projects in January 2010 for implementation in 2013 and 2014. Therefore, the next opportunity for the Red Rock Corridor Commission or its individual partners to apply for CMAQ funds for any or all elements of the commuter bus service is in 2011 for implementation in 2015 or 2016. The CMAQ application process entails a significant amount of time to complete and an applicant needs to ensure that the candidate project is well-defined and will meet if not exceed the evaluation criteria. Additionally, there is no guarantee that an application would be approved by the Metropolitan Council.

- *Counties Transit Improvement Board (CTIB).* CTIB "was created by 2008 legislation to use a ¼ percent metro sales tax and a $20 motor vehicle sales excise fee to invest in and advance transit projects throughout the region. Anoka, Dakota, Hennepin, Ramsey and Washington Counties voted to participate in the CTIB, which is working in collaboration with the Metropolitan Council and neighboring Scott and Carver counties[3]." While the use of CTIB funds is specific to fixed guideway transit capital improvements such as light rail, Washington County has some flexibility to use its share of the funds for the next three years, whether for park-and-ride construction or transit operations expenditures of the Red Rock Corridor commuter bus service. Additionally, CTIB funds are limited in amount and when they may be used. Specifically, if Washington County is awarded a

[3] Source: http://www.mnrides.org/component/easyfaq/?view=front&cid=1.

CTIB grant for a particular project, its share of funds would change and will no longer be able to spend its share of funding on commuter bus service and/or facilities as described in this document.

- *TH 61 Bridge Replacement Funds.* The TH 61 Bridge over the Mississippi River is scheduled for replacement in fall 2010. The proposed Red Rock commuter bus service could lessen general automobile traffic over the bridge during construction. Construction mitigation funds may be available through either the Minnesota Department of Transportation (Mn/DOT) or FHWA. At the time of this writing, these funds may only be used by Mn/DOT for transit projects as directed by the State Legislature, as was done for the Cottage Grove park-and-ride lot. Another option is to pursue special appropriations from the next bonding bill for bridge replacement funds.

- *Greater Minnesota Transit Grants*. Mn/DOT is responsible for the administration of state and federal transit assistance funds for Greater Minnesota. Greater Minnesota is defined as the area outside of the seven-county Twin Cities metropolitan area. The City of Red Wing is outside of the Twin Cities area. There may be opportunities to tap into the numerous transit grants to support some part of the proposed Red Rock Corridor commuter bus service in the future, when service to Red Wing and the Prairie Island Indian Community is warranted by ridership. Mn/DOT's web site identified several grant programs such as:

    - *Capital Facility Grant Program.* For major public transit facility projects, such as purchase, renovation or construction of bus garages, bus stops, administrative offices and other transit-related building activities. Capital funds can be used to finance up to 80 percent of capital costs. Funding sources for these grants include the State General Fund, State Bond Funds, and FTA Section 5309 Capital Program Funds.[4]
    - *Public Transit Participation Program.* Provides financial assistance for public transit services. Since 1984, all transit systems in Greater Minnesota have received state assistance through a fixed share funding formula as defined by Minnesota State Statute M.S. 174.24. Funding sources for these grants include the State General Fund and Greater Minnesota Transit Fund, and are combined with funds from the Federal Non-urbanized Area Formula Program (Section 5311.)
    - *Rural Transit Assistance Program (Section 5311)*. Ongoing grant program that provides training and technical assistance to public transit providers in rural and urban areas with populations of less than 200,000. Public transit providers who use federal transit funds Sections 5311, 5310 and tribal public transit organizations are eligible to receive these funds. Public transit organizations who receive Sections 5307 and 5309 funds may be eligible under certain conditions.

[4] Source : http://www.dot.state.mn.us/transit/grantapplications/grantapindex.html.

- *Non-urbanized Area Formula Program (Section 5311)*. For small urban and rural areas (under 50,000 population). Funds may be used to finance up to 80 percent of capital costs and up to 50 percent of operational deficits. Funding sources for these grants include the State General Fund and the Greater Minnesota Transit Fund and are combined with funds from the Federal Nonurbanized Area Formula Program (Section 5311).

- *Local Government General Funds.* Funding could also come through general funds from one or more of the Red Rock Corridor Commission member counties and/or the City of Hastings. For example, the City of Hastings' Housing and Redevelopment Authority can assist in establishing a redevelopment area and financing plan (e.g. tax increment) with City Council approval. It can issue tax-exempt revenue bond financing[5] for specific projects that may be worth exploring as it relates to funding capital projects associated with the proposed bus service such as a new park-and-ride facility. Hastings can also issue its own tax levy to cover their portion of the annual operating cost for the service

- *Regional Transit Capital Communities (RTCC), formerly known as the Transit Taxing District.* The RTCC is composed of communities in which the Metropolitan Council levies a tax for investment in regional transit capital projects, including park-and-rides and buses. The City of Hastings is currently not part of the RTCC. If Hastings becomes part of the RTCC, the property tax levy would generate approximately $290,000 annually, although this is not a guarantee of transit service or facilities through the Metropolitan Council. This year's deadline for joining the RTCC is late August for levy funds to be available in 2010.

- *Chapter 152 Funds.* In February 2008, the Minnesota Legislature increased the state's Motor Vehicle Fuel Tax and Motor Vehicle Registration Tax, and authorized an option of $0.025 county sales taxes to develop and operate transitways (see preceding description of CTIB) in the Twin Cities and Greater Minnesota. The Legislature also authorized $1.83 billion in bonding between 2009 and 2018 to finance state highway-related needs.[6] This legislation includes $50 million for statewide transit facility improvements and may be used for both capital and operating expenditures. As of this writing, Mn/DOT will issue solicitations in August 2009 and applications are due in September 2009. The maximum individual award is $6 million.

- *Public Transportation on Indian Reservations*. SAFETEA-LU created a new Tribal Transit Program that is funded as a takedown under the Section 5311 program.[7] Federally-recognized Indian tribes are eligible as direct recipients, while those that are not remain eligible to apply to the State as a subrecipient for funding under the State's apportionment. Funds may be used for planning, capital, and operating expenditures

5 Source: http://www.ci.hastings.mn.us/InsideCityHall/ICHCommissions/HRA/ICH_HRA.htm.
6 Source: *2009-2028 Minnesota Statewide Transportation Plan*.
7 http://www.fta.dot.gov/funding/grants/grants_financing_3553.html

associated with rural public transit, and support for rural intercity bus service. There are no matching requirements and funds are available for the year they are appropriated plus two years – for a total of three years. Funding is based upon a yearly national competitive selection process conducted by the FTA.

Table 4-1 presents a summary of potential funding sources for the Red Rock Corridor commuter bus service.

Table 4-1
Summary of Potential Funding Sources

Potential Funding Source	Can be Used for:		Funding Source	Comments
	Capital?	Operating?		
CMAQ	Yes	Yes	Federal, with local match requirement	Next opportunity to apply is in 2011 for project implementation in 2015 or 2016. Funding may be used for demonstration projects for up to three years in duration.
CTIB	See Comments.		Local (5 Twin Cities Counties)	Limited funds are available. Washington County has some flexibility to use its share of the funds for the next three years.
Mn/DOT Bridge Replacement Funds	See Comments.		State	Requires direction from the State Legislature or special appropriations as part of the next bonding bill.
Greater Minnesota Transit Grants	Yes	Yes	Federal (formula funds) and State	Cities and counties outside the seven-county Twin Cities metropolitan area are eligible, such as the City of Red Wing. Includes FTA Section 5311 funds.
Local Government General Funds	See Comments.		Local	Potential funds include TIF and bonds, whose uses vary.
Regional Transit Capital Communities	Yes	Yes	Local	Formerly known as the Transit Taxing District. Joining the RTCC (i.e. the City of Hastings) does not guarantee transit service or facilities through this tax levy.
Chapter 152 Statewide Transit Enhancement Funds	Yes	Yes	State	Mn/DOT's *2009-2028 Statewide Highway Investment Plan* includes $50 million for statewide transit facility improvements as specified in 2008 Chapter 152 legislation. Mn/DOT will issue solicitations in August 2009. Applications due in September 2009. Maximum individual award is $6 million.[8]
Public Transportation on Indian Reservations (5311(c))	Yes	Yes	Federal	Created through SAFETEA-LU and funded as a takedown under Section 5311 program. Based upon an annual national competitive selection process by FTA.[9]

[8] Source: *Minnesota Statewide Transportation Plan 2009-2028*, Minnesota Department of Transportation.
[9] Source: http://www.fta.dot.gov/printer_friendly/grands_financing_3553.html.

5.0 Procurement Process

Prior to the start-up of service, the Red Rock Corridor Commission will need to enter into a procurement process for vehicles and equipment, and/or service. Descriptions of both processes are provided below.

5.1 Vehicle and Equipment Procurement

Throughout the process of developing and evaluating service alternatives, the Red Rock Corridor Technical Committee was presented with two options for vehicle procurement – owning or leasing. While owning lessened the annual contract costs for operating and maintenance, it also required more up-front capital funds that may not be readily available at the initiation of the project. Ownership also required more lead time to procure the vehicles through the required competitive bid process; thus, potentially delaying the project's implementation. Finally, owning buses committed the Commission to a long-term investment into the service. Should the service not meet ridership expectations as outlined in Section 6.4 of this Technical Memorandum, the Commission would be shouldered with nine transit coaches and no place to use them. With this is mind, the Technical Committee has favored bus leasing as a part of the service contract.

Seven buses are required to operate the service, and two additional "spare" buses are suggested for use to allow for the rotation of buses for regular scheduled repairs. The recommended vehicles are 40- to 45-foot over-the-road coaches (e.g. MCI, Van Hool), capable of carrying at least 50 seated passengers. As per the Americans with Disabilities Act (ADA), the buses must be able to accommodate wheelchair-bound passengers. As noted earlier, electronic fareboxes capable of supporting the region's smart card technology should be included on Red Rock Corridor buses. A communications system, capable of reaching a manned dispatch center and/or supervisory personnel, should also be required in order to quickly communicate accidents, vehicle breakdowns, passenger emergencies or any other incident.

5.2 Service Contract Procurement

One of the key components of start-up service tasks is the selection of a service provider. The operating plan should first be further refined (described in Section 6.1) to ensure an accurate specification is advertised for bid. The traditional Request for Proposals (RFP) process will need to be followed to guarantee a fair, cost-effective bid process. Sufficient lead time must be allowed to support pre-bid communications, evaluation, interviews, awards and actual project start-up upon selection.

The actual procurement will need to be federally compliant, including notifications, evaluation, price consideration and value calculation, records retention, possible review and appeal, and notice to proceed. Sample service plans, all operating requirements including training, safety

and drug and alcohol programs, legal contractual terms including sample (FTA-compliant) contract, and notice of federal certifications and assurance must be produced and included in the bidding package. Subject areas that are typically included in an RFP package and potential components within each subject area are:

- *Scope of Requested Services.* Routes, schedules, estimated revenue-hours and miles, holidays, personnel requirements and qualifications, estimated ridership and revenue, equipment requirements, vehicle requirements, facility requirements, period of performance, start-up date, marketing responsibilities, administrative tasks, maintenance requirements, insurance requirements, street supervision, spare vehicle requirements, vehicle markings.

- *FTA Requirements.* Disadvantaged Business Enterprise (DBE), Buy America, contract clauses, termination – convenience and default, remedies and disputes, certifications, drug/alcohol testing, Equal Employment Opportunity (EEO)/Title VI. These requirements only apply if federal funds are used.

- *Incentives/Disincentives.* On-time performance, completed trips, road-call interval, safety, maintenance, accessibility availability, passenger commendations/complaints, bonuses.

- *Administration.* Time/schedule, pre-proposal conference, contact person, proposal validity period, amendments/acknowledgment, subcontracting, cancellation, advertising, term of contract, charter use, renewals/options, confidentiality, increase/decrease in service, taxes, licenses, vehicle/facility use restrictions, disputes, meetings, damages, insurance, fare structure and responsibilities, indemnification/hold harmless, severability, assignment of contract.

- *Evaluation Categories/Criteria.* Experience of firm in similar service, experience of key staff, operations plans and procedures, maintenance plan, start-up plan, references, cost (per revenue-hour, per trip), DBE participation, understanding of project, financial capability/responsibility, innovative approaches, oral discussions, bonding and insurance.

- *Payment Methods/Issues.* Basis for payment, working capital (start-up), time- or report-triggered, legal concerns, prohibition of advance payments, fuel (escalation/de-escalation), increased service.

- *Monitoring Performance.* Vehicle cleanliness and maintenance quality control inspections, on-street supervision, reporting requirements, national transit database reports (if applicable), operator appearance, operator training, fuel and emission standards, customer complaints, radio procedures, implementation of start-up plan, establish staff responsibilities, accidents, incentives/disincentives assessment.

There are several public transit service providers in the area capable of providing operations, maintenance and management of the Red Rock commuter service including Metro Transit, Metropolitan Transportation Services, and the "opt-out" suburban transit systems. However, participation through these providers may be limited due to institutional constraints such as the RTCC.

There are also a number of private transit service providers in the area who are capable of turn-key operations. Most already have experience with transit operations and would require little familiarization to acclimate to Red Rock's service. Some of the area's private providers are: Jefferson Lines, Laidlaw Transit, Lorenz Bus Service, Minnesota Coaches, Richfield Bus Company, Robinson Coach, Schmitty & Sons Charter and Voigt's Motorcoach Travel.

5.3 Procurement Process

Initiating a vehicle, equipment, and/or service procurement process requires advance planning by the sponsoring governmental entity. Typical tasks associated with issuing an RFP and awarding a contract include:

1. Planning the procurement
2. Preparing the RFP
3. Preparing for pre-award inquiries
4. Conducting a pre-proposal conference (optional)
5. Amending the solicitation
6. Processing proposals
7. Technical evaluation of proposals
8. Determining price objectives
9. Auditing and analyzing cost proposals
10. Determining proposals that are within acceptable competitive range
11. Verification of statements in proposal (e.g., references, staff qualifications)
12. Selecting a preferred service provider
13. Conducting negotiations with the preferred service provider
14. Contract award/Notice to Proceed.

6.0 Other Implementation Considerations

This Technical Memorandum has identified several areas that require consideration prior to the start-up of service such as management and oversight, fare policy and funding sources and the procurement process for vehicles, equipment and service. Other considerations to be addressed are described below.

6.1 Operations Plan Refinement

Section 2 of this Technical Memorandum provided a description of the preferred operating scenario for the Red Rock Corridor commuter bus service. Further refinement of this service plan, however, is required prior to the implementation of service. The running times that were used in the plan's development were based on average travel speeds and the existing published schedules for Routes 361 and 365. To ensure a truer, more accurate schedule, running times should be physically driven during the peak times proposed in the schedule. Optimally, this would be completed with a bus to fully simulate traffic and vehicle maneuvering conditions. Testing should occur during the morning and afternoon hours over the course of two to three days, if possible. Arrival times at all timepoints should be noted and averaged into a final schedule and timetable. When adjusting the time schedules, care and sensitivity must be given to morning arrival times downtown as well as afternoon departure times from downtown. Trips should be timed assuming typical work start and end times on the hour (:00) and half-hour (:30) and allowing for adequate walk time to/from bus stops (10-15 minutes).

In addition to updating run time estimates, the operations plan refinement should include a review and update of ridership forecasts and financial assumptions. The updates should capture any refinements related to project definition (e.g., change in proposed service levels, travel times, fares).

6.2 Marketing Plan

Effective marketing is critical to the success of the Red Rock commuter bus service. Potential riders must be aware of the service and its advantages. A marketing strategy should be developed to ensure widespread acknowledgement and acceptance of the service amongst users and non-users alike. Ultimately, the Red Rock commuter bus service is expected to evolve into a higher-capacity commuter rail service. Public support and acceptance of the service will be vital to see the long-term plan to fruition. Recommended goals include:

- Develop a distinct, positive image for the express bus service
- Inform and educate potential riders of the quality and convenience of using the service
- Generate ridership
- Create community pride and generate public support, even among non-users

- Obtain as much non-paid media coverage and special events as possible, supplemented by paid advertising only where necessary.

Since there is a broad range of service contracting opportunities, specific vehicle branding may be limited depending on the service provider and the integration of their fleet to other services. Nonetheless, the commuter service needs a positive identity to be included in all promotional materials. An existing logo (as illustrated on the upper right hand corner of this document) or a completely new logo to represent the service may be desired. The logo should be featured prominently at any grand opening event or wherever media coverage may be present.

Once schedules have been finalized, information will need to be presented to customers in a familiar, easy-to-comprehend format. Pocket timetables/maps, print ads, brochures and web site information should be developed clearly and consistently with basic how-to-ride information. At a minimum, these resources should include a route map, timetable, days of operation and fare information. A phone number where live help can be reached would also be beneficial.

Community outreach activities should occur with the goal of promoting the service and its benefits. Presentations to professional groups, community associations and government leadership should be prepared in advance of the service's implementation. Upon implementation, regular updates should be provided to local leaders and the media on service successes, particularly at major milestones.

6.3 Facilities Development

Facilities will potentially require the most lead time out of all of the pre-start-up activities associated with the project. As such, it is important to acknowledge the major facility components and their role in the Red Rock commuter bus service. Additionally, the next step towards service implementation needs to determine ownership and maintenance responsibility related to new facilities, as there are ongoing operating and maintenance costs associated with capital elements such as park-and-ride lots.

Maintenance Facility

Red Rock commuter bus service will require a maintenance facility capable of supporting repairs and overnight parking of at least nine over-the-road coaches. Indoor parking facilities are recommended to ensure dependable start-up during Minnesota's winter months. Since the service is recommended for contracting, the maintenance facility should be included as part of any potential contractor's bid. This lessens the Commission's capital commitment and ultimately speeds the timeline for service implementation.

Hastings Depot Park-and-Ride

The initial segment of the Red Rock bus service will originate at a newly developed park-and-ride facility in Hastings. The proposed site is situated along the west side of the Hastings Train Depot, located three blocks east of TH 61 (Figures 6-1 and 6-2). Given the site's proximity to the existing railroad Corridor, this location is ideal for long-term park-and-ride investment. The parking area can transition from a bus-oriented operation to a commuter rail operation with minimal adjustments and cost outside of the initial outlay.

Currently the Hasting Depot site is dirt/gravel and unable to support the daily wear and tear of a park-and-ride operation. A paved parking lot must be constructed at this site, in addition to a passenger waiting area. The park-and-ride lot design must include an area for bus staging and passenger loading/unloading. Given the ramp configuration of TH 61, buses are likely to access the park-and-ride lot site via Second Street and egress via Third Street.[10] To avoid passengers crossing in front of the bus, improvements to pave Bailey Street and/or a drive aisle parallel to Bailey Street between Second and Third Streets should be considered.

Figure 6-1
Downtown Hastings Aerial with Conceptual Routing



[10] The exact routing through this area will be refined in the next phase of service development.

Figure 6-2
Close-Up Aerial of Hastings Depot



Map Source: Microsoft Corporation

Downtown Minneapolis and St. Paul Facilities

As noted in Section 2.0 of this Technical Memorandum, proposed downtown St. Paul routing is the same as existing Route 361 routing and proposed downtown Minneapolis routing is the same as existing Route 365 routing. Morning trips are assumed to follow designated bus routings through downtown Minneapolis and St. Paul, and continue back to the maintenance garage. Afternoon trips, however, will require downtown staging areas. In downtown Minneapolis, Route 365 stages at the Fifth Street Garage Transit Center. The Hastings-Minneapolis service plan also assumes a similar operation with its four daily afternoon trips staging at the transit center. In downtown St. Paul, Route 361 begins its afternoon service from Fifth Street and Smith Avenue near the Smith Avenue Ramp. The Hastings-St. Paul route is assumed to stage in the same area with its three daily afternoon trips. Since Metro Transit is the primary service provider in both downtowns, coordination with Metro Transit's Operations Planning staff must occur to minimize conflicts between buses.

Besides the Hastings Depot, bus stops in downtown Minneapolis and St Paul must be identified for the Red Rock commuter service. Since both routes will be following identical downtown movements as Metro Transit's Routes 361 and 365, it is only sensible that the bus stop locations also be shared. Sharing bus stops will minimize traffic disruption by selecting locations that are already established and understood by the driving public. Like the layover locations described above, the use of these common bus stops must also be coordinated with Metro Transit. At that time, there should be discussion on how the bus stops are physically identified for the Red Rock Service. Markings can be as simple as the designated route number added to the existing sign or as involved as a completely new sign that features the Red Rock

commuter service logo, route number, customer information phone number and web site address.

Future downtown layover facilities include Minnesota's Union Depot in downtown St. Paul and a future facility (new or expansion of an existing one) in downtown St. Paul. A preliminary concept design and Environmental Assessment is under review for Minnesota's Union Depot; its return to an intermodal facility is anticipated in 2012. Meanwhile, the Metropolitan Council will soon begin a study of alternative downtown layover sites that the Corridor Commission should keep abreast of as the latter moves forward with the next phase of service implementation.

Lower Afton Road Park-and-Ride

Metro Transit Routes 361, 364 and 365 presently stop on TH 61 at the Lower Afton Road park-and-ride lot. This park-and-ride lot could also be served by new Red Rock commuter bus service. The lot presently operates near capacity. However, Metro Transit is presently moving forward with plans to expand this parking lot. The current proposed service plan for Red Rock commuter bus service does not assume service at this park-and-ride lot stop. Discussions will be required with Metro Transit with regards to fare collection prior to Red Rock commuter bus service at this stop, for Red Rock commuter bus service could adversely impact Routes 361/365 ridership at this location.

6.4 Service Monitoring Requirements

A service monitoring program is essential for the Red Rock Corridor Commission to determine the project's long-term sustainability. Ultimately, this program will track daily, monthly and annual ridership and determine if the service is meeting the projected ridership goals. As noted in Section 2.0 of this Technical Memorandum, anticipated ridership is 200 passenger trips per day on the Minneapolis route and 160 riders per day on the St. Paul route. Annual ridership for the two routes is 91,800.

Since vehicle specifications will include an electronic farebox, daily ridership can be collected electronically. Given the size of the operation, Red Rock commuter bus service should not be required to submit ridership, service and cost data to the National Transit Database (NTD). Nonetheless, the Project Manager (or designee) should still be responsible for tracking ridership trends and reporting to the Red Rock Commission. It is essential to keep the Commission engaged in the service and provide opportunities to publicize ridership milestones and successes.

It is important to note that it may take several weeks before daily ridership levels reach the projections identified in this study. Advertising and promotional efforts will need time to take root to establish a regular rider base. However, after the first year to 18 months of service, daily boardings should reach the projected ridership. If not, additional marketing strategies should be considered. As an alternative, further trip-level analysis may be necessary to

determine trips that can be eliminated or consolidated. However, service reduction must be approached very cautiously so as not to lose the confidence of the remaining riders. Past experience has shown that reductions in service often result in passenger concerns that their trips may be the next to be cut. Those passengers may seek alternative modes of transportation in response to service cuts, even if their particular trip is not eliminated.

6.5 Future Service Expansion

As noted earlier in this Technical Memorandum, other service scenarios were considered in this study that reflected more robust service (e.g. midday trips) and a route extension to Red Wing and the Prairie Island Indian Community. Evaluation of the project alternatives indicates that such service is not warranted at this time. However, the service monitoring program described earlier in this section, along with documented customer requests, should be used to gauge potential future expansion of Red Rock commuter bus service (i.e. additional peak trips, new midday trips and/or extension of service southeast to Red Wing and the Prairie Island Indian Community). Another potential future service expansion is the connection to the I-494 Corridor to serve the Mall of America/Airport South area, Best Buy campus, Thompson Reuters and Normandale Boulevard/TH 100. Ridership potential between the Red Rock Corridor and these areas was examined. However, these areas are outside of the Red Rock Corridor and it is, therefore, probably more appropriate to examine potential transit service to these areas separately.

7.0 Implementation Schedule

This Technical Memorandum has identified numerous activities that must take place prior to the start of the Red Rock commuter bus service. The first step toward implementing expanded commuter bus service is to determine who will be the responsible agent for management and oversight of the service. The TAC has identified the Metropolitan Council (Metro Transit) and the Red Rock Corridor Commission as the two potential responsible agents. As previously stated, if is the desire for Metro Transit to remain the responsible agent, then the recommended course of action is to continue to advocate and coordinate with Met Council and Metro Transit for service extension. If Option 2 is pursued and the Red Rock Corridor Commission is the responsible agent, the process of selecting a contract service provider and completing pre-start-up service tasks cannot begin in earnest until key policy decisions are made by the Red Rock Corridor Commission. To facilitate these decisions, a series of workshops are suggested. Suggested workshop topics, and subject areas that should be discussed within each workshop are as follows:

Workshop #1 – Management/Oversight

- How will the service be funded?
- Who will be the governmental entity that is designated as the entity responsible for day-to-day operations, including the selection of a Project Manager?
- Will the service be implemented for a short-term period as a demonstration project (typically 1-3 years) or as a permanent service that will need to be funded on an ongoing basis?
- Are buses going to be purchased or part of a service contract?
- What functions are to be contracted out vs. directly operated (i.e. bus operations, vehicle maintenance, facility maintenance and general administration tasks)?
- If any functions are to be directly operated, what are the local government staff requirements?

Workshop #2 – Funding/Fare Policy

- What are the established fares?
- Will discounted fares be offered?
- What reciprocal fare arrangements will be made with other regional service providers?
- Where will additional funding be obtained to cover anticipated costs?

Workshop #3 – Service/Equipment Procurement

- What is the scope of services/equipment to be described in the RFP?
- What start-up service tasks should be included in the scope?
- What performance incentive clauses should be included?
- What should be the method of payment?

- What administrative requirements will be included?
- What criteria shall be used for evaluating proposals?
- What is the scheduled procurement process?

Workshop #4 - Marketing

- Who will be responsible for preparing a marketing plan?
- What is the designated budget for marketing tasks?
- Who will be responsible for implementing the marketing plan?

A four-month period may be required to complete these workshops. Once key policy decisions are made through these workshops, the Commission will be in a position to proceed with selection of a contract service provider for the Red Rock commuter bus service. Generally, a nine- to ten-month schedule (see Figure 7-1) has been proposed to cover the time required from preparation of a draft RFP to the start of service. Anticipated time required for each start-up task is:

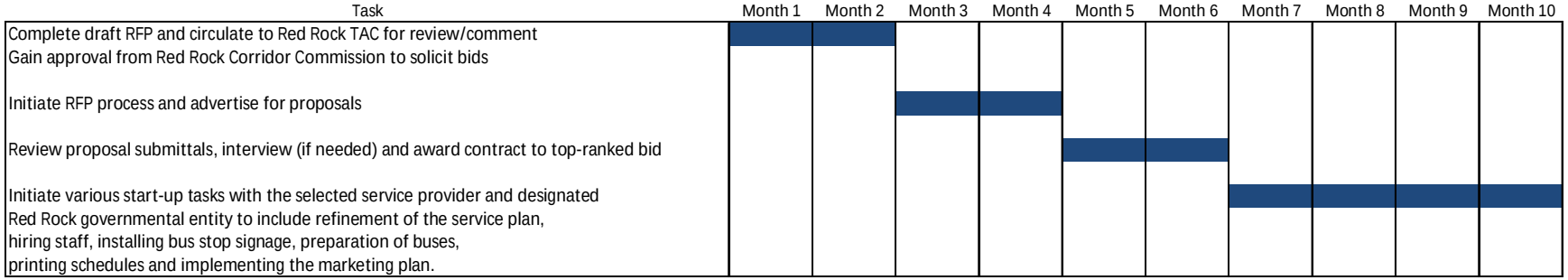
- Two months – Complete draft RFP and circulate to Red Rock TAC for review/comment and gain approval from Red Rock Corridor Commission to solicit bids.
- Two months – Initiate RFP process and advertise for proposals.
- Two months – Review proposal submittals, interview (if needed) and award contract to top-ranked bid.
- Four months– The selected service provider and designated Red Rock governmental entity initiates various start-up tasks such as refinement of the service plan, hiring staff, installing bus stop signage, preparation of buses, printing schedules and implementing the marketing plan.

An alternative set of start-up tasks are required if the Metropolitan Council (Metro Transit) is designated as the responsible agent for management and oversight of the service (Option 1). Specifically, a series of meetings will be required between the Red Rock Corridor Commission and the Metropolitan Council to reach agreement on issues such as:

- The potential requirement of expanding the RTCC to include Hastings and any additional potential funding requirements for the service.
- Specific bus routing and schedules (e.g., will the service be an extension of existing Routes 361 and 365, and if so, how many additional trips are proposed and will those additional trips include a stop at the Cottage Grove park-and-ride lot, or bypass this park-and-ride lot?).
- Schedule for constructing the Hastings park-and-ride lot.
- Schedule for implementing bus service.
- Marketing activities and responsibilities for those activities.
- Ridership monitoring requirements and service performance standards.

As noted earlier in this Technical Memorandum, there are key issues with regards to funding (there is no committed funding for this service at this time) and the implementation schedule (i.e., how soon can service begin). These key issues must first be resolved before proceeding with service start-up activities under this service delivery option.

Figure 7-1
Implementation Timeline for Option 2
(Red Rock Commission as the Responsible Agent, Contracting the Service)[11]



[11] This Study recommends solidifying funding commitments first before embarking on this implementation schedule.