

## **Technical Memorandum #1 Background Review**

This technical memorandum provides a summary of background documents, including local transportation studies, comprehensive plans, areas studies, site plans, ordinances, and design standards. It also provides a summary of data related to travel, population, employment, and transportation services that are relevant to the Red Rock Corridor Alternatives Analysis Updates (AAU).



April 16, 2013





## Table of Contents

<b>1.0 INTRODUCTION .....</b>	<b>1.1</b>
<b>2.0 DOCUMENT REVIEW .....</b>	<b>2.2</b>
2.1 LOCAL TRANSPORTATION STUDIES .....	2.2
2.1.1 2000 - MnDOT Commuter Rail System Plan Draft.....	2.2
2.1.2 2001 - The Red Rock Corridor Commuter Rail Feasibility Study .....	2.4
2.1.3 2003 - Saint Paul Union Depot Analysis .....	2.9
2.1.4 2004 - Midwest Regional Rail System Executive Report .....	2.10
2.1.5 2007 - Red Rock Corridor Alternatives Analysis Final Report.....	2.11
2.1.6 2008 - 2030 Transit Master Study .....	2.17
2.1.7 2008 - Hastings Bridge Scoping Study .....	2.19
2.1.8 2009 - Commuter Bus Feasibility Study.....	2.20
2.1.9 2010 - 2030 Transportation Policy Plan Summary.....	2.25
2.1.10 2010 - Minnesota Comprehensive Statewide Passenger Rail & Freight Plan ...	2.25
2.1.11 2010 - Metropolitan Council Park-and-Ride Plan.....	2.27
2.1.12 2012 - East Metro Rail Capacity Study .....	2.28
2.1.13 2012 - Annual Report of Minnesota High Speed Rail.....	2.32
2.2 COMPREHENSIVE PLANS.....	2.32
2.2.1 2008 - Ramsey County Comprehensive Plan – Section B (Transportation, Transit and Surface Water) .....	2.32
2.2.2 2009 - City of Hastings 2030 Comprehensive Plan: Transportation.....	2.33
2.2.3 2010 - City of St. Paul Park 2030 Comprehensive Plan: The Plan for Transportation .....	2.34
2.2.4 2010 - Newport 2030 Comprehensive Plan: Transportation Section.....	2.34
2.2.5 2010 - City of Woodbury 2030 Comprehensive Plan – Transportation.....	2.35
2.2.6 2010 - City of St. Paul 2030 Comprehensive Plan – Transportation .....	2.35
2.2.7 2010 – Washington County 2030 Comprehensive Plan – Transportation .....	2.35
2.2.8 2011 - City of Cottage Grove 2030 Comprehensive Plan – Transportation.....	2.36
2.3 AREA STUDIES.....	2.37
2.3.1 2011 - Market Assessment Report: Red Rock Corridor Station Area and Site Master Planning Study .....	2.37
2.4 SITE PLANS .....	2.39
2.4.1 2009 - Union Station Environmental Assessment.....	2.39
2.4.2 2010 Union Depot Activation and Development Strategy .....	2.39
2.4.3 2012 - Station Area Planning Final Report.....	2.41
2.5 ORDINANCES OR DESIGN STANDARDS.....	2.46
2.5.1 1997 - Guidelines on Shoulder Use by Buses .....	2.46
2.5.2 2012 - Regional Transitway Guidelines .....	2.46
<b>3.0 DATA REVIEW.....</b>	<b>3.48</b>
3.1 TRAVEL.....	3.48
3.1.1 2010 Travel Behavior Inventory (TBI) Household Survey .....	3.48



3.1.2	Transit On-Board Survey.....	3.48
3.1.3	Twin Cities Regional Travel Demand Forecast Model (RTDFM).....	3.49
3.1.4	2012 - Park-and-Ride User Origins Data Collected: September/October 2012.....	3.51
3.2	POPULATION.....	3.51
3.3	EMPLOYMENT.....	3.52
3.4	TRANSPORTATION SERVICES.....	3.52
3.4.1	Northstar Commuter Rail.....	3.52
3.4.2	2012 Cedar Avenue Transitway Update.....	3.53
3.4.3	Orange Line (I-35W BRT).....	3.53
<hr/>		
4.0	CONCLUSION.....	4.54



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## 1.0 Introduction

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While a background review is important for any major transportation study to establish a foundation for analysis, it was particularly important for the Red Rock Alternatives Analysis Update (AAU). This is because several studies with similar purposes have already been completed, including the original Red Rock Corridor Alternatives Analysis that was completed in 2007. To avoid any rework, the information these documents contain and the framework they created for the alternatives analysis update had to be fully understood. In addition, many complementary studies and transportation initiatives have occurred since the last formal study of transit options for the Red Rock Corridor, so these will have to be incorporated into the AAU. Key studies include the Station Area Planning Reports which were completed in 2012, the transportation sections of comprehensive plans for communities in the study area including Hastings, Newport, Cottage Grove, Saint Paul Park, Woodbury, St. Paul, and Minneapolis, many of which were completed in 2010, and planning and analysis work related to passenger rail and freight rail in the East Metro Area.

The data review component of this background review was aimed at data for travel, population, employment, and transportation services. In the years since the 2007 Alternatives Analysis, there have been updates to the population and employment forecasts, and actual data is available on the performance of commuter rail in the Region. BRT planning in the Region has also progressed such that a BRT line will be in operation in the Cedar Avenue corridor in 2013.

In addition to noting information that was relevant to the planning of transit services in the Red Rock Corridor, the background review made note of any vision or public involvement elements to provide a foundation for the visioning and outreach elements of this AAU.

It should be noted that the content of many of the reports is now outdated. In many cases, the conclusions have been superseded by the results of other studies, and in some cases, what was once a plan has now been implemented. The relevant content of these plans are described as they were written, although in some cases, updated information is provided where applicable. For example, in some of the earlier plans, it was not yet known what mode of transit would serve the Central Corridor (the corridor between St. Paul and Minneapolis), and now that it is known that LRT will serve this corridor.



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## 2.0 Document Review

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### 2.1 LOCAL TRANSPORTATION STUDIES

#### 2.1.1 2000 - MnDOT Commuter Rail System Plan Draft

This study used the Twin Cities Metropolitan Commuter Rail Feasibility Study as its base and explored many details of commuter rail service in the Minneapolis-St. Paul Area.

In 1999, the Commissioner of MnDOT was granted authority to plan, design, construct, and operate commuter rail in Minnesota. This report addressed how MnDOT would manage this new authority and how commuter rail would be advanced in the Region. It outlined the advantage of having authority for commuter rail development in a single entity as opposed to many, and it provided ground rules for funding, financing, and engineering standards. It also provided a framework for conducting negotiations with host railroads for the use or purchase of rail right-of-way. MnDOT, as a state agency, was also given authority to plan for commuter rail lines that extended beyond the seven-county Minneapolis-St. Paul area. It should be noted that the Northstar Commuter Rail line currently extends into Sherburne County, which is outside of this area, and a commuter rail line in the Red Rock Corridor that served Red Wing would also serve points outside of this area.

The report discussed the question of governance and the possible establishment of a Joint Exercise of Powers Agency (JPA) or state-wide transit agency to plan and operate commuter rail. A third option was to have Metro Transit implement commuter rail. The report held up the Central Puget Sound Region as a model of governance that worked for commuter rail.

Other elements related to commuter rail development in the Region were noted, as follows:

- The report stressed that final approval for any commuter rail plans would have to go through MPOs before final design. Furthermore, any modifications to the system plan would have to go through the MPOs.
- Communities needed to practice Smart Growth policies and include them in their comprehensive plans, transportation plans, development strategies, and zoning ordinances. Standards for TOD were discussed.
- The commuter rail work would need to be included in Statewide and Regional Transportation Plans. The projects would also have to align with New Starts criteria.
- Cost-sharing would have to be addressed, with federal, state, local and railroads being players. The “Moving Minnesota” document discussed funding options, including motor vehicle excise tax and regional sales tax.
- Commuter rail extensions would be considered when the total transit operating costs would be reduced by the elimination or truncation of bus routes. The criterion of 100 riders per day per station was also suggested as a good planning rule of thumb for justifying new service.



- The report recommended that municipalities acquire land for stations and parking lots in the near term. It suggested that the sponsor could buy land for stations and parking lots, but then then lease these lands to municipalities and require them to carry out tasks such as maintenance and policing.
- Facilities at the terminals would be needed for train storage and light maintenance. Heavier maintenance would possibly be done through contracts with existing railroads, if the vehicles were compatible, or at a new central maintenance facility in the future if that was cost effective and if a site was acquired. Any feasible coordination with Metro Transit's LRT maintenance and storage facilities was recommended, too. A fare zone structure was envisioned. Fares would reflect a reasonable cost per mile, and discounts would be available for tickets bought in bulk.
- Free parking was envisioned at the stations.
- The report gave significant attention to the necessary task of negotiating with the railroads. It recommended that MnDOT be the chief negotiator on a team with the municipalities in the corridor and the agency sponsoring any given corridor. This would provide some continuity from the perspective of the railroads. The Northstar Commuter Rail project would be used as an example of how negotiations would be handled once that project was completed. The report also stressed the importance of getting legal counsel and engineering experts on the team. The railroads needed to really understand the passenger services that were being considered to understand the impact to them in terms of cost, risk, and capacity. The report stated that insurance was very important and recommended that all parties be covered.
- The report recommended acquiring new rolling stock because there were multiple options for buying equipment made in North America.
- The report stated that communications equipment must be compatible with the railroads'.
- The report stated that the new commuter rail service would have to recognize FTA safety standards.
- The report recommended creating standard operating procedures for all commuter rail services.
- The report recommended the use of relay crews to improve operations at the downtown terminals.

This report proposed initially operating three-car trains in the Red Rock Corridor, but building stations for five- to six-car trains to allow for future capacity expansion. The proposed schedule included four morning peak trips and four afternoon peak trips, but no service on weekends or in the middle of the day. It suggested the option of service for special events. Maximum speeds of 79 mph were assumed. A trip from Hastings to downtown St. Paul would be 29 minutes, while a trip from Hastings to downtown Minneapolis would be 60 minutes (this would include some time for crew repositioning at the St. Paul depot). The report explained that a commuter rail link would be more critical to the Red Rock Corridor than the Northstar Corridor because there is more demand from the Southeast to Minneapolis than there is from the Northstar corridor to St. Paul.



The report stressed the importance of coordinating the commuter rail service with existing transit services. It recommended new community circulator vans in Hastings, with service meeting every departure and arrival. It suggested that commuter rail service could effectively replace express bus service, with one fewer bus needed for every 40 commuter rail passengers, reducing bus operating costs. The report estimated that the Red Rock Corridor would allow for the reallocation of 22 buses by 2020 (see the table below). It was noted in the report, however, that express buses would actually be faster than commuter rail between St. Paul and Minneapolis, and the travel time advantages of commuter rail with respect to express bus would be minimal for trips that started in Newport or points north and west. The travel time analyses in the report suggested that for trips that started south of Newport, the service offered by the commuter rail would be faster and more reliable than that offered by express bus.

Buses Removed by Corridor		
	Buses Reallocated	
Corridor	2005	2020
Bethel	5	6
Dan Patch	24	28
Northstar	24	28
Norwood/Young America	10	9
Red Rock	18	22
Rush Line	16	15
<b>TOTAL</b>	<b>97</b>	<b>108</b>

Source: 2010- MnDOT Commuter Rail System Plan Draft

The report discussed how freight traffic in the Red Rock Corridor is very heavy, and so CP, the main owner, would not consider selling the right of way. However, in principle, railroads might consider selling right of way in corridors that get less use.

The report noted that the Red Rock Corridor commuter rail service will have to merge with the Rush line services going into St. Paul if that line is built as commuter rail. This report also noted that if a commuter rail line was built between St. Paul and Minneapolis, it would have to accommodate traffic from up to six passenger lines in the future.

### 2.1.2 2001 - The Red Rock Corridor Commuter Rail Feasibility Study

In this report, it was assumed that the corridor required the following attributes:

- Travel speeds must be at least 30 mph



- Vehicles must have capacities for more than 221 passenger for commuter rail vehicles, 25 to 220 passengers for line haul service vehicles, and 7 to 24 passengers for circulator service
- Bus services would have to operate in mixed traffic
- The vehicles must have a self-contained power supply
- Vehicle propulsion should be diesel or hybrid diesel/electric
- Control/communication should be manual
- Vehicles can be single, articulated or capable of being combined into trains
- Suspension should be rubber tire or rail

In this report, commuter rail was selected as the preferred alternative after a discussion of options. A technology evaluation/selection process made note of the available transportation and utility corridors explaining that TH 61 and the shared CP/BNSF rail corridor were the only rights of way in the study corridor. This led the authors to the conclusion that there was no available space for LRT or a dedicated busway. As a result, only mixed-traffic bus service (with bus shoulder lanes, available, if necessary) and commuter rail were moved forward in the planning process. Commuter rail was assumed as the long-term solution for the corridor, in spite of its significant capital costs.

The report further supported its claim that commuter rail would meet the needs of the corridor by presenting the following table:



Objective	Support/Compliance
Improve existing transit service to complement corridor transit service.	<ul style="list-style-type: none"> <li>Local and express bus service would be improved to complement commuter rail operating in the corridor.</li> </ul>
Improve connections between all modes of transportation.	<ul style="list-style-type: none"> <li>Commuter rail operating in the corridor can interface directly with commuter rail operations in other corridors including Central and North Star.</li> <li>Stations will provide transfer opportunities between commuter rail and other modes including walk, bicycle, auto, local bus and LRT.</li> </ul>
Improve level of service and travel time.	<ul style="list-style-type: none"> <li>Commuter rail would be faster than existing bus service.</li> </ul>
Invest in infrastructure, facilities and services that improve the connectivity, transfer and circulation of the region.	<ul style="list-style-type: none"> <li>Commuter rail would connect or provide transfer to other modes in the region.</li> </ul>
Coordinate with other regional commuter rail, transit, light rail transit and road projects.	<ul style="list-style-type: none"> <li>Direct connection to other commuter rail lines and transfer to light rail and bus.</li> </ul>
Provide efficient connections to other transportation corridors and modes.	<ul style="list-style-type: none"> <li>Accessible to park-and-ride lots with direct connection to commuter rail and transfer to light rail and bus.</li> </ul>
Work with Midwest Regional Rail System.	<ul style="list-style-type: none"> <li>Commuter rail would share tracks and stations with Midwest Regional Rail System.</li> </ul>
Locate transit and/or commuter rail stations in locations where development or redevelopment of existing neighborhoods can readily occur.	<ul style="list-style-type: none"> <li>Stations ideally suited to accomplish this objective.</li> </ul>
Minimize right of way takings and displacement of homes and businesses.	<ul style="list-style-type: none"> <li>Commuter rail would require minimal new right of way compared to other modes such as LRT or BRT.</li> </ul>
Meet FTA goals as they relate to cost effectiveness.	<ul style="list-style-type: none"> <li>Commuter rail can be implemented with relatively low capital cost with capacity that matches potential passenger volumes for the corridor.</li> </ul>
Plan and develop transit stations with applicable FRA safety guidelines.	<ul style="list-style-type: none"> <li>Existing rail facilities can be enhanced to improve compliance with FRA safety guidelines for both freight and passenger service.</li> </ul>
Provide safe corridor crossing locations for vehicles and pedestrians.	<ul style="list-style-type: none"> <li>Existing crossing locations can be improved for increased safety of vehicles and pedestrians, especially at station areas.</li> </ul>

Source: 2001 - The Red Rock Corridor Commuter Rail Feasibility Study



The commuter rail service concept was peak period service, with ten daily trips spaced 30 minutes apart and access to rail stations provided by feeder bus services. The report assumed that there would be four peak direction trips and one non-peak direction trip during each peak period. The report estimated that 23 vehicles would be required, including 5 locomotives, 6 bi-level coach cab cars, and 12 bi-level coach cars. 150 seats per car were assumed. The report also assumed that a maintenance facility and a layover facility would be needed. The layover facility was envisioned in Hastings, where trains could be stored overnight and during the middle of the day.

This report assumed that commuter rail services would use existing BNSF/CP tracks which would be upgraded as necessary to support commuter rail operations. Commuter rail service would share the tracks with 20 to 60 freight trains per day.

Through analyses carried out as part of this study, daily ridership for Minneapolis-to-Hastings service was forecast to be 5,900 boardings per weekday in 2020. Of these, 4,200 were new riders, with the rest shifting from bus to rail. Travel time was assumed to be 27 minutes between Hastings and St. Paul and 26 minutes between St. Paul and Minneapolis. The analysis suggested that 60% of riders would be starting from or going to the five stations in the Southeast and 15% of trips would be transfers to/from the Northstar Commuter Rail service.

This report presented a commuter rail capital cost estimate of \$261.6 million (in 2001 dollars), with some elements that could be shared with other transit systems. This cost estimate did not include land acquisition costs, and it only included the portion of the line between Hastings and St. Paul. The annual operating and maintenance costs were estimated to be \$7.9 million in 2010 dollars. This included costs for feeder bus service in Hastings. A proposed weekday schedule is shown below.



**Table 6.2.1: Preliminary Commuter Train Schedule**

	Morning / Westbound Schedules				PM RC from RR2	AM RC from RR1	Evening / Eastbound Schedules			
STATION	RR1 Leave	RR3 Leave	RR5 Leave	RR7 Leave	RR9 Leave	RR10 Arrive	RR2 Arrive	RR4 Arrive	RR6 Arrive	RR8 Arrive
Hastings	6:00	6:30	7:00	7:30	16:37	8:14	16:27	16:57	17:27	17:57
Cottage Grove	6:10	6:40	7:10	7:40	16:47	8:05	16:18	16:48	17:18	17:48
Newport	6:16	6:46	7:16	7:46	16:53	7:59	16:12	16:42	17:12	17:42
Lower Afton Road	6:20	6:50	7:20	7:50	16:57	7:55	16:08	16:38	17:08	17:38
St. Paul Station	6:27	6:57	7:27	7:57	17:04	7:47	16:00	16:30	17:00	17:30
St. Paul Station	6:37	7:07	7:37	8:07	17:14	7:37	15:50	16:20	16:50	17:20
Rice	6:42	7:12	7:42	8:12	17:19	7:33	15:46	16:16	16:46	17:16
Snelling	6:49	7:19	7:49	8:19	17:26	7:26	15:39	16:09	16:39	17:09
U of M	6:56	7:26	7:56	8:26	17:33	7:19	15:32	16:02	16:32	17:02
Northeast Mpls	6:59	7:29	7:59	8:29	17:36	7:16	15:29	15:59	16:29	16:59
Minneapolis	7:02	7:32	8:02	8:32	17:39	7:12	15:25	15:55	16:25	16:55
	Arrive	Arrive	Arrive	Arrive	Arrive	Leave	Leave	Leave	Leave	Leave

Source: 2001 - The Red Rock Corridor Commuter Rail Feasibility Study

This report placed more emphasis on the southeast piece of the Red Rock Corridor because the Central Corridor piece was being studied separately. In this report, alternative station sites were examined for Downtown St. Paul, Newport, and Cottage Grove. Technical Memorandum #4 of this document was particularly important because it served as the base for the cost analysis of commuter rail option carried out in the 2007 Alternatives Analysis.

*Public Involvement Notes:*

The consultation for this Alternatives Analysis included the following:

- Technical Advisory Committee (TAC) and Red Rock Corridor Commission (RRCC) Meetings
- Open Houses



- Land Use Forum
- Station Area Planning Workshops
- Newsletter
- Website

#### *Vision Notes:*

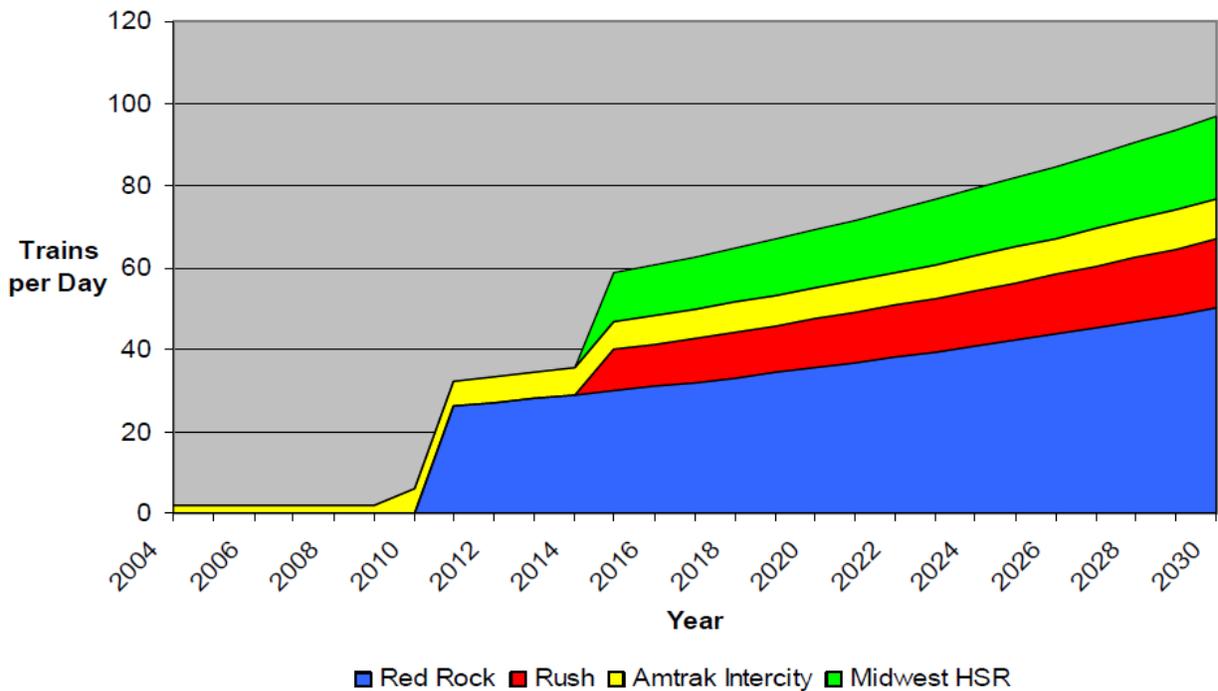
The vision for the Red Rock Corridor includes the following elements.

1. Improve mobility and access for personal travel and goods movements. Significant growth is expected in the corridor and congestion is already a concern on TH 61. Transit options that reduce travel time and travel delays can provide a solution that addresses this growth and congestion in a more cost-effective way than roadway investments.
2. Coordinate transportation investments to provide a seamless, integrated regional multi-modal transportation network. This reflects the fact that links in the transit system are being added regularly, and they all need to fit together. The effective linking of the various segments will translate into a cost-effective system.
3. Encourage the implementation of transit supportive development.
4. Promote positive environmental impacts.
5. Support a stable and reliable capital and operating funding source for transportation investments.
6. Improve safety conditions for vehicular traffic and pedestrians.

#### **2.1.3 2003 - Saint Paul Union Depot Analysis**

This study laid out the foundations for the conversion of the St. Paul Union Depot into a multimodal transportation terminal, a process that is already well underway. A grand opening ceremony was held at Union Depot on December 8, 2012.

This report described how the building would be acquired and repurposed to integrate many passenger services into one location. It described how buses would access its lower level and how passengers would be able to connect to the main passenger waiting area using the building's original platform access doors. It described how new passenger tracks and platforms would be built to accommodate Amtrak trains, allowing for the closure of the Midway Station (now expected to occur at the end of 2013). Following that, it described how new tracks and platforms would serve the Red Rock Commuter Rail corridor and how future freight rail movements would be accommodated. In later years, the report showed how additional tracks would be added to serve Midwest high speed rail services from Chicago. The report was written with the assumptions summarized below about the potential passenger rail growth in St. Paul.



Source: 2003 – Saint Paul Union Depot Analysis

The report described the project’s funding and how it was expected to bring about revitalization of the St. Paul Lowertown area. It also described how the future LRT would be integrated into the terminal.

Notably, the project would revitalize the historic building and return it to its original function as a transportation hub.

**2.1.4 2004 - Midwest Regional Rail System Executive Report**

This report describes how nine Midwest states joined the Midwest Regional Rail Initiative (MWRRI) to implement high-speed rail in the Midwest. This report is a follow-up to reports in 1998 and 2000 concerning regional rail. This plan offered new cost estimates, new ridership estimates, and new ideas about feeder bus service, and it addressed freight rail capacity in greater detail.

This initiative started with a desire to simply increase operating speeds, train frequencies, reliability, and system connectivity. It transformed into a desire to bring 21<sup>st</sup> century train service to the Midwest. The report assumes that the tracks would be shared with freight trains and there would be joint development at all stations.



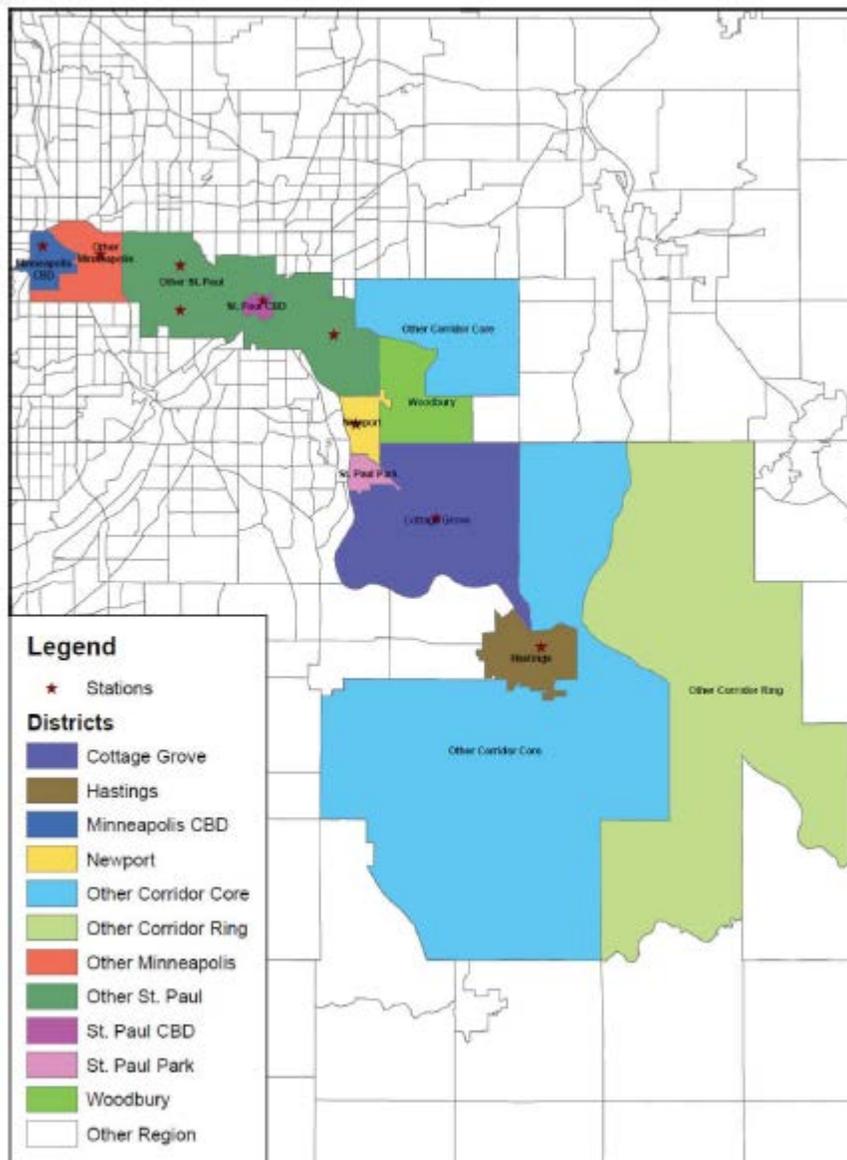
The report assumes that train speeds would be up to 110 mph and the system would be designed as a hub-and-spoke network with the hub in Chicago. The purpose would be to connect rural and small urban areas as well as metropolitan areas.

The Red Rock Corridor is part of the anticipated link between St. Paul and Chicago (via Milwaukee). The plan would see an increase from three to eight trains per day to Chicago from St. Paul. The travel time would be reduced from about 8 hours to 5.5 hours. Operating cost subsidies would be needed, initially, but it is envisioned that fares would cover operating costs as the service matured. The line between Chicago and St. Paul would be relatively profitable.

The report assumed that the total system cost would be \$7.7 billion, with 80% being federally funded and the remaining funding coming from the states.

#### **2.1.5 2007 - Red Rock Corridor Alternatives Analysis Final Report**

The following map shows the study area and station locations assumed in the 2007 Alternatives Analysis Report.



Source: 2007 - The Red Rock Corridor Alternatives Analysis

The purpose of the Alternatives Analysis (AA) was to develop and evaluate options for the corridor. The AA defined a study area that had a population of 376,859 in 2000 and 488,954 in 2030 (a 29% increase). Potential technologies were selected based on the following criteria:

- Proven technology
- Financial feasibility
- Compatible with existing infrastructure
- Compatibility with travel demand patterns



The four technologies/modes that passed were commuter rail, BRT, LRT, local bus, and commuter bus. Technologies that did not pass included high-speed rail and ferry. The minimum operating segment (MOS) was defined as Hastings to St. Paul.

BRT and LRT options were subsequently eliminated due to their lack of cost-effectiveness and compatibility with the corridor's land uses. The report assumed that both BRT and LRT would require a dedicated right-of-way adjacent to TH 61 or in its median, and would thus be cost-prohibitive. The report assumed that the densities in the corridor were not sufficient to produce enough ridership to justify LRT.

The options that were carried forward included a base case, three express bus options, and five commuter rail options. The express bus options varied in terms of their use of the shoulder lane and other travel time enhancements, but shared fifteen minute headways. The commuter rail options varied in terms of the alignment between St. Paul and Minneapolis and the stations that would be served, but all included five trips in the morning and five in the evening. A fifth option omitted service between St. Paul and Minneapolis. The Regional Council Transportation Model was used to forecast 2030 ridership for these options. Bus options resulted in 1,280 to 2,350 additional corridor transit passenger boardings per day over a base case scenario in which no improvements were made to the travel corridor and peak period buses departed approximately every 30 minutes. Commuter rail options resulted in 955 to 1010 additional passenger boardings per day over this base case.

Annual operating costs for the rail option between Hastings and St. Paul were estimated to be \$6.7 million. This option included 2-car trains and five stations. Bus costs were estimated based on a three point cost model incorporating a base cost for peak period operation, a per hour cost, and a per bus mile cost and varied according to the level of service provided in the option.

Short-term, intermediate, and long-term strategies were recommended to build transit ridership in the corridor and prepare for the cost-effective implementation of commuter rail.

As the project progressed, the conclusion was reached that the specified FTA process was not at this time the most prudent course to strictly follow. Hence, the AA-Scoping Study evaluation and process was modified to reflect a non-federalized alternatives evaluation and decision-making process.

The AA discussed usage of the existing transit services. These included Routes 361, 365, 364, and 320 (note that Route 320 has since been discontinued as fixed-route service), which had 860 average weekday boardings in total in the second quarter of 2007. It also mentioned Route 94, which provides express service between downtown St. Paul and downtown Minneapolis. This service had 3,920 boardings per weekday, on average, in April 2007. The 2012 combined daily ridership for Routes 361, 364, and 365 is estimated to be 951.

The discussion of existing transit service performance also included information about the park-and-ride facilities. The park-and-ride usage at the time of this study was such that both the Cottage Grove and Lower Afton Road park-and-ride facilities were under-utilized, with 224 of



494 spaces used at the Cottage Grove park-and-ride facility and 79 of 114 spaces at the Lower Afton Road facility in October 2006. The report also mentioned the availability of parking in the City of Hastings in the vicinity of the railroad depot and identified a location for a station in the City of Newport.

The report cited the following daily train volumes on various segments of the rail network: 87 trains on the BNSF tracks between St. Paul and Minneapolis, 12-26 trains on the CP tracks from St. Paul to Minneapolis, and 68 trains per day on the CP/BNSF tracks from Hastings to St. Paul. These should be comparable to the train volumes used as the baseline in the 2012 East Metro Rail Capacity because this study used 2006 train volumes for this purpose.

The vehicles were assumed to consist of three vehicles – one locomotive and two coaches. The station costs were based on the station designs on the Northstar commuter rail line. Station costs included 25% for engineering, 30% for contingency, and 10% for project oversight.

A summary of the options are listed below:

#### **Commuter Rail Options:**

Option A: Alignment uses BNSF track (the Northern alignment) but serves no intermediary stations between St. Paul and Minneapolis.

Option B: Alignment uses BNSF track (the Northern alignment) and serves intermediary stations between St. Paul and Minneapolis.

Option C: Alignment uses CP track (the Southern alignment) but serves no intermediary stations between St. Paul and Minneapolis.

Option D: Alignment uses CP track (the Southern alignment) and serves intermediary stations between St. Paul and Minneapolis.

Option E: No Alignment between St. Paul and Minneapolis.

#### **Express Bus Options:**

Option A: This option includes two new routes, one connecting Hastings to St. Paul and another connecting Hastings to Minneapolis. Both routes would operate every 15 minutes.

Option B: This option includes two new routes, one connecting Hastings to St. Paul and another connecting Hastings to Minneapolis. Both routes would operate every 15 minutes and use bus shoulder lanes for increased travel speeds and reliability for the entire route.

Option C: This option includes two new routes, one connecting Hastings to St. Paul and another connecting Hastings to Minneapolis. Both routes would operate every 15 minutes and use bus shoulder lanes for increased travel speeds and reliability for the entire route. In addition, travel times and reliability would be further enhanced by the use of transit signal priority.

A summary of the option evaluation from the report is provided in the table below.



	Options	Capital Costs (\$2007), not including contingency, engineering, or oversight costs (\$ millions)	Real Estate Costs	Annual Operating Costs (\$2007)	Average Weekday Ridership (2030)	End-to-End Travel Time (min), for bus options, Route 361 / Route 365 (2030)	Route Miles Route, for bus options, 361 / Route 365	Vehicle Costs, not including contingency, engineering, or oversight costs
Commuter Rail	A: BNSF/Limited	\$243.65	variable estimate	not included	1580	62	30	\$36.50
	B: BNSF/All	\$252.92	variable estimate	not included	1620	65	30	\$36.50
	C: CP/Limited	\$236.30	variable estimate	not included	1635	55	30	\$36.50
	D: CP/All	\$244.47	variable estimate	not included	1605	58	30	\$36.50
	E: Hastings to St. Paul	\$183.56	variable estimate	\$6.71	1560	31	19.5	\$36.50
Express Bus	A: 15 min headways	\$0.00	not included	not included	1915	90 / 99	20.6 / 31.0	not included
	B: A + shoulders to Hastings	\$18.00	not included	not included	2645	75 / 67	20.6 / 31.0	not included
	C: B + TSP	\$75.00	not included	not included	2940	68 / 59	20.6 / 31.0	not included

*Vision Notes:*

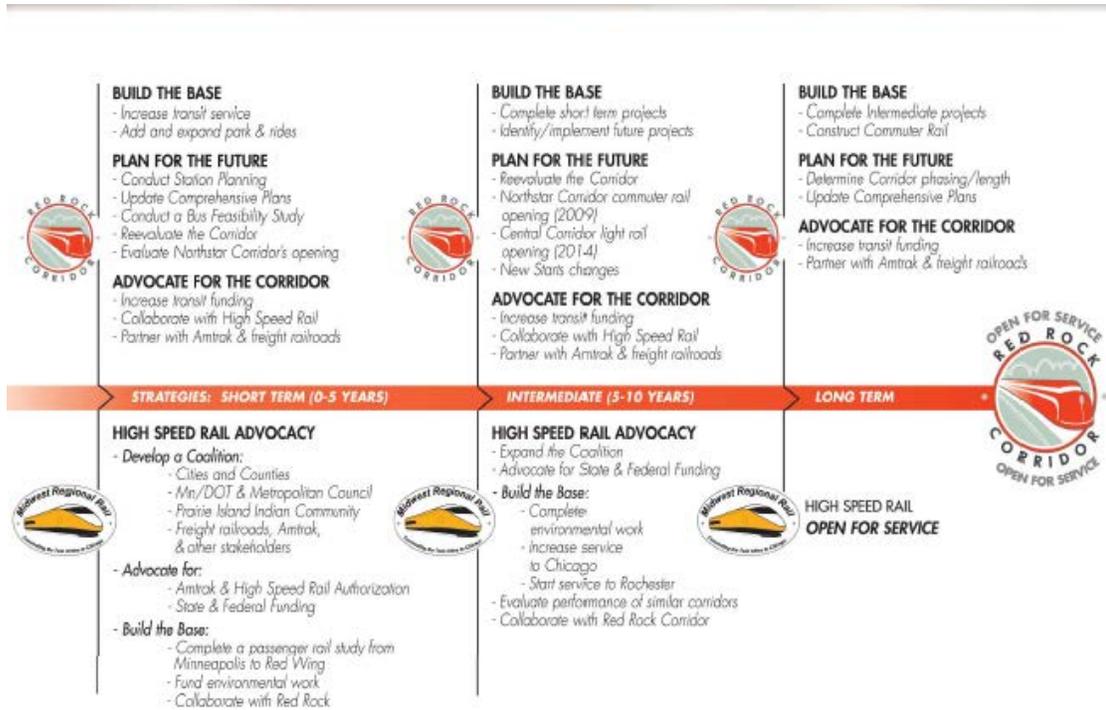
The overall corridor vision for the Red Rock Corridor that emerged from the Alternatives Analysis was the construction of commuter rail in the long term in coordination with high speed rail, but the introduction of enhanced express bus service in the near term. This vision complemented the Metropolitan Council’s 2030 Regional Transportation Plan, which aimed to double the current transit ridership by 2030 and develop a network of transitways. The resulting vision also supported the goals for the project, which were to:

- Cost effectively address transportation problems in the corridor
- Provide mode choice to people in the corridor
- Stimulate community and economic development
- Enhance regional transit system performance
- Improve the quality of the natural and manufactured environment
- Provide financially feasible options
- Provide travelers with a means to avoid congestion
- Reduce travel times in the corridor



- Facilitate travel in the peak period for employment

The following graphic illustrates the implementation plan for commuter rail in the Red Rock Corridor.



Source: 2007 - The Red Rock Corridor Alternatives Analysis

It should also be noted that the Station Area Planning work which concluded in 2012 was a recommended outcome of this study. Successful station areas, consisting of multiple land uses and higher densities, will be able to generate the ridership required to make commuter rail service cost effective.

*Public Involvement Notes:*

There were newsletters, a website, press releases and other media relations, presentations to local community staff, fact sheets, paid advertising, specific outreach to ethnic communities, and a booth at the 2007 Minnesota State Fair. Two public open houses were held in 2004, and four public open house meetings were held in 2007.

Consultation with the public and stakeholders indicated an interest in dual-mode operation (i.e., using commuter rail to serve demand in the peaks and buses to serve demand in the off-peaks, connections with other transit services, project coordination, and schedules. Many people expressed an interest in helping to move the project forward.

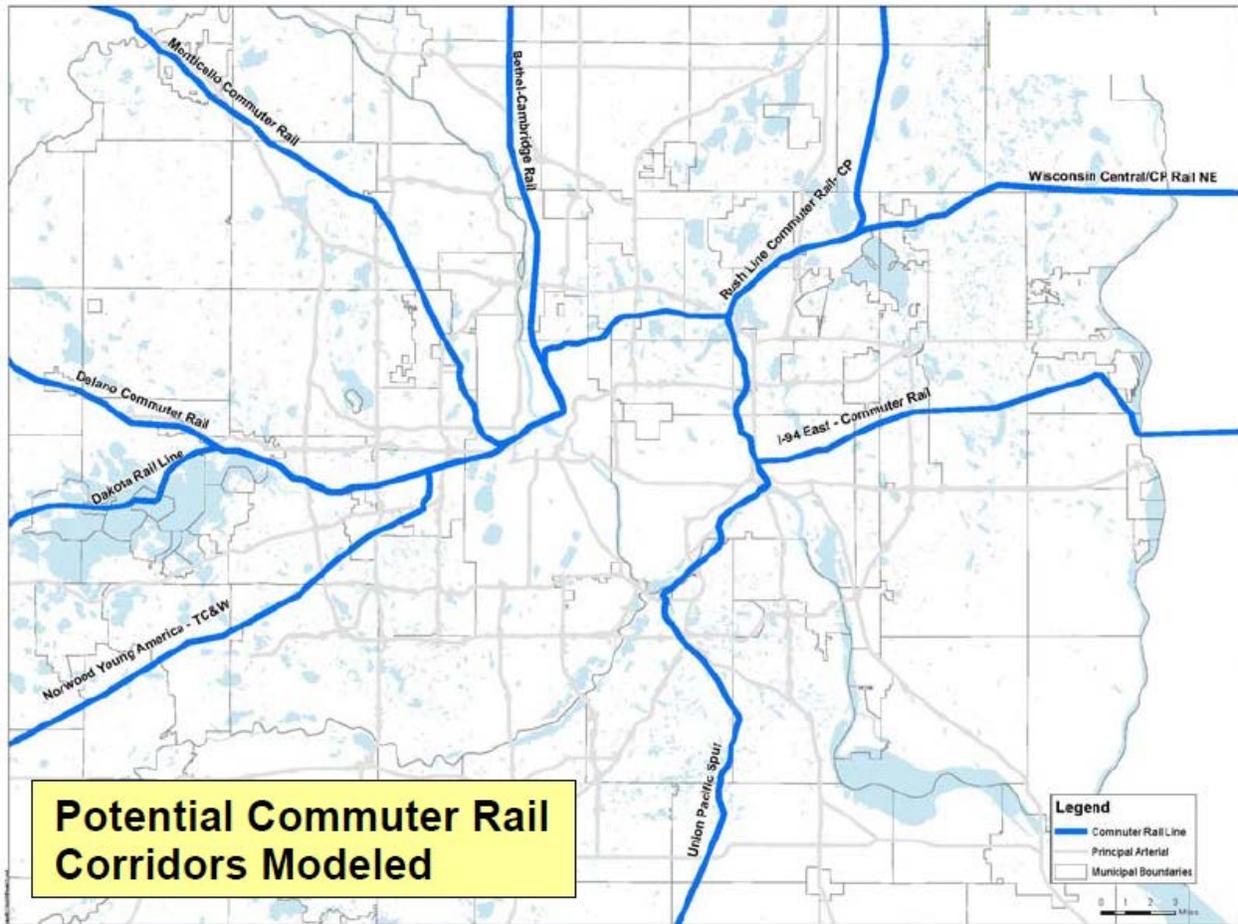


The main questions answered through the public consultation process were:

- What is the Red Rock Corridor?
- What is the Red Rock Corridor Commission?
- What is an Alternatives Analysis, its purpose, and the proposed timeline?
- Who is paying for the Alternatives Analysis Study?
- What happens after the Alternatives Analysis is complete?
- When will the transit service be open for use?
- How does the Red Rock Corridor relate to the Central Corridor?
- How does the Red Rock Corridor fit into the regional plans for transit?
- Why should the public care that studies are continuing for the Red Rock Corridor?
- How can I become involved in the planning or find out more about the Corridor?

#### **2.1.6 2008 - 2030 Transit Master Study**

This report was an update of the 2020 Transit Master Plan. In this report, 29 corridors were evaluated and compared. From 2001 to 2007, some corridors were removed from consideration due to low ridership estimates. Notably, the Red Rock Corridor is not included on this list of corridors. The corridors considered for commuter rail are shown in the image below:



Source: 2008 – 2030 Transit Master Study

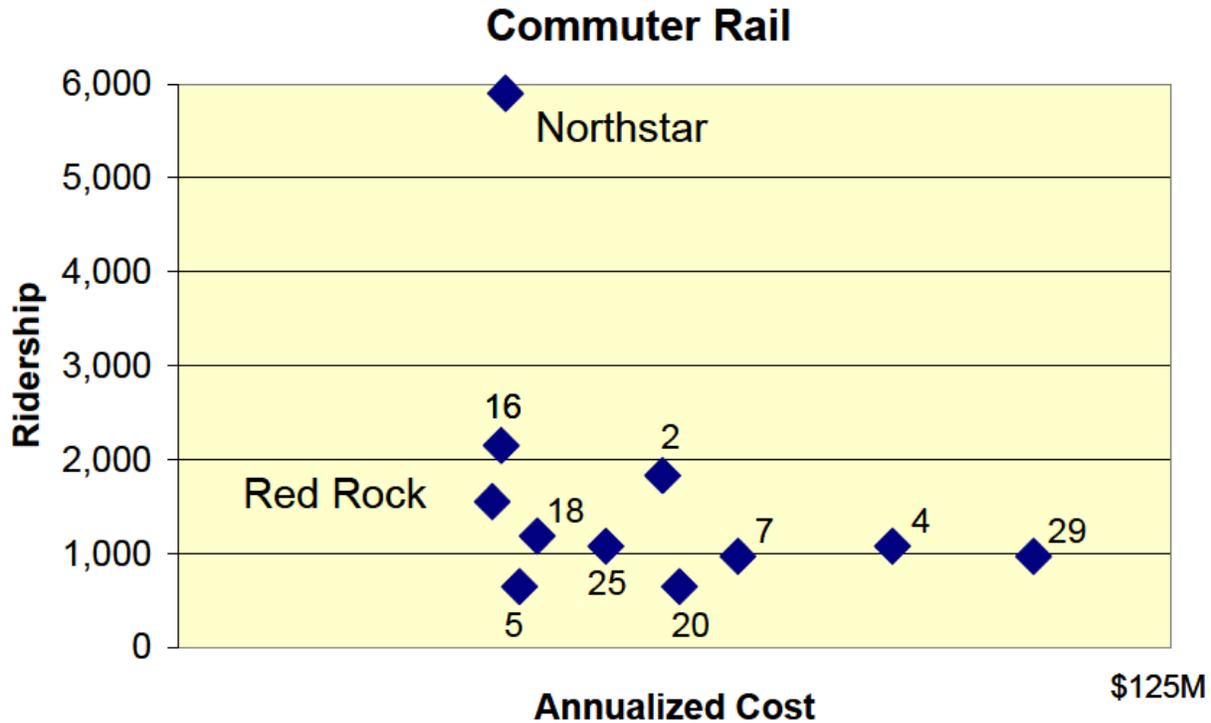
The Study made note of large numbers of people from outside the transit taxing district using the transit services. At the time of the Study, 25% of the people using regional park-and-ride facilities were coming from outside the transit-taxing district.

The region has free park-and-ride facilities. The plan is to greatly enhance express bus services which serve these park-and-ride facilities with nonstop service to downtown St. Paul, downtown Minneapolis, and the University of Minnesota campus. Some express bus routes do local pickups. At the time of the study, there were 141 park-and-ride facilities, with many more planned.

At the time of the study, there were 250 miles of bus only shoulder lanes, but by 2030, it was anticipated that there would be an increase of 145 miles of these assets.



In a comparison of the Red Rock Corridor to the Northstar Corridor and other potential commuter rail corridors, it had relatively low construction costs. However, it had low ridership potential compared to the Northstar Corridor. The image below illustrates this point.

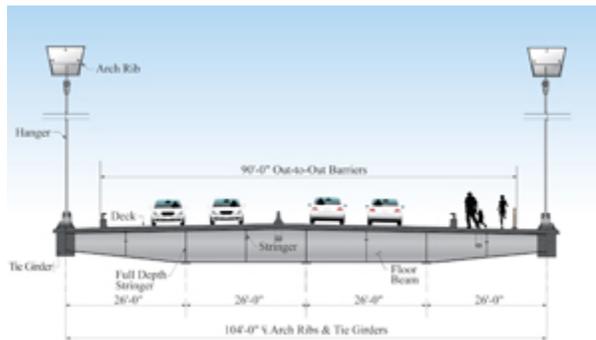


Source: 2008 – 2030 Transit Master Study

**2.1.7 2008 - Hastings Bridge Scoping Study**

This report discussed the new bridge for crossing the Mississippi River at Hastings. The existing bridge had only two lanes, and it was congested, experiencing LOS E in the peak periods. It was the busiest two-lane highway segment in the state, with 31,500 vehicles per day.

The new bridge will be open in 2013, with construction completed in 2014. The new bridge does not include any dedicated bus lanes. A cross section of the bridge is shown below.



Source: <http://www.dot.state.mn.us/hastingsbridge/mainspan.html>

#### *Public Involvement Notes:*

Three public meetings were held.

#### **2.1.8 2009 - Commuter Bus Feasibility Study**

The Commuter Bus Feasibility Study was carried out in response to the Alternatives Analysis, which recommended that enhanced bus service be introduced in the corridor to build ridership for future commuter rail service.

The transit needs assessment of the study considered service from downtown Minneapolis to 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, and the Prairie Island Indian Community.

The study built on the ridership forecasts developed for the 2007 Alternatives Analysis. To build the ridership model, the following stations were considered trip origins:

- Lower Afton Road
- Newport
- St. Paul Park
- Cottage Grove
- Hastings
- Prairie Island
- Red Wing

The following stations were considered trip destinations:

- Downtown Minneapolis
- University of Minnesota
- Snelling Avenue
- State Capitol Area
- Downtown St. Paul



- Near Northeast Minneapolis

The travel demand between these origins and destinations at the time of the study was determined from the 2006 Longitudinal Employer-Household Dynamics (LEHD) data and is summarized in the table below.

Residence by Catchment Area	Employment by Catchment					
	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
<b>Total</b>	<b>1,360</b>	<b>420</b>	<b>40</b>	<b>300</b>	<b>690</b>	<b>2,080</b>

Source: 2009 – Commuter Bus Feasibility Study

Analysis of Northstar commuter bus service ridership suggested that the bus services were attracting 22.3% of the work trip market. This was higher than the overall regional transit commute mode share which is 4.5%, but in line with the transit commute mode share for downtown Minneapolis workers, which is 25.1%. In this study, the prevailing transit mode share was used as a basis for determining high, medium, and low transit mode shares for commute trips, as shown below.

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

Source: 2009 – Commuter Bus Feasibility Study

In this study, accommodation was made for the fact that some people would drive to a Hiawatha LRT station to get to downtown Minneapolis. 20% of transit users from Hastings, Prairie Island, and Red Wing were assumed to do this. These transit mode shares and total transit volume estimates were used to estimate the values in the following chart, which shows ridership estimates under a high transit commute mode share scenario.



Residence by Catchment Area	Employment by Catchment					
	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
<b>Total</b>	<b>650</b>	<b>200</b>	<b>20</b>	<b>80</b>	<b>180</b>	<b>530</b>

Source: 2009 – Commuter Bus Feasibility Study

Note that some numbers may not sum due to rounding.

This report provided an overview of transit services that existed at the time and provided four alternative bus-based services for the Red Rock Corridor (with a sub-alternative considered for the second alternative). These alternatives varied in terms of route linkages, route terminals, and trip volumes. The alternatives were evaluated in terms of capital cost, operating cost, ridership, and resulting measures of effectiveness.

The scenarios were as follows:

Scenario 1: Routes 361 and 365 are extended south to Hastings, with new trips added to both routes. Traditional buses would be used.

Scenario 2: Two new commuter coach routes are established from Hastings, one to Minneapolis, and one to St. Paul. Routes 361 and 365 would remain unchanged.

Scenario 3: Trips are added to Scenario 2 to provide one additional trip in each peak period and a round trip during the midday period. These additional trips would be less direct, linking Minneapolis, St. Paul, the Cottage Grove park-and-ride, as well as Hastings.

Scenario 4: Some trips in Scenario 3 are extended to provide service to Red Wing. Additional park-and-ride lots would be required.

Scenario 2 was recommended due to its superior performance in comparison to the other alternatives. It was then modified so that there were fewer trips. The evaluation is summarized in the table below.



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

Source: 2009 – Commuter Bus Feasibility Study

Seven buses were required for peak period service in the option selected. This option also resulted in 3,500 annual in-service bus hours and 96,900 annual in-service bus-miles. Daily ridership on the Minneapolis route was estimated to be 200 and on the St. Paul route it was estimated to be 160.

Buses were expected to access the Hastings Depot Station via 2<sup>nd</sup> Street and leave via 3<sup>rd</sup> Street, although the report indicated that this would have to be reexamined at a later date closer to implementation. The new routes would bypass Cottage Grove and Lower Afton Road park-and-ride lots. The two routes proposed in this study are shown in the figure below.



Source: 2009 – Commuter Bus Feasibility Study

The options for oversight were the Metropolitan Council (Metro Transit) and the Red Rock Corridor Commission. The report assumes that the Red Rock Corridor Commission will be the responsible agent. There is preference to contract the service because that means there is less commitment, initially.

Recommended fares were \$3.25 for the St. Paul route and \$4.75 for the Minneapolis route.

Potential funding could come from CMAQ, Counties Transit Improvement Board (CTIB), TH 61 Bridge Replacement Funds, Greater Minnesota Transit Grants, Local Government General funds, Regional Transit Capital Communities (formerly Transit Taxing District), Chapter 152 Funds, or Public Transportation on Indian Reservations funds.

It should be noted that even though the bus options were explored in this report, none of the proposed enhancements has occurred.



### **2.1.9 2010 - 2030 Transportation Policy Plan Summary**

The 2030 Transportation Policy Plan describes a significant increase in rapid transit services in the Region through investments in transitways and supportive infrastructure such as park-and-ride facilities. In 2008, more funding for transportation was identified, although a large portion of it was earmarked for maintaining the extensive highway system, including its bridges. Counties in the Metropolitan Area now have the power to fund transitways through a ¼ cent sales tax, and five of the seven counties have done this through joint-powers boards. The Region has a vision of developing transitways to attract a larger number of people to transit. Several Tier 1 transitways exist or are well underway, including the Hiawatha LRT line, the Northstar Commuter Rail, the Central Corridor LRT, and two BRT lines to the south.

The Plan shows the Red Rock Corridor being developed as an LRT / Busway / BRT / Commuter Rail corridor. The plan comments that there is no justification for another commuter rail line in the region, although the introduction of high speed rail connecting Chicago to Duluth would reduce the capital costs of commuter rail considerably and make it a viable project in the Red Rock Corridor or in the Bethel/Cambridge Corridor.

This report defines BRT as using dedicated busways, managed or priced lanes, bus-only shoulders, or arterial street bus lanes.

#### *Vision Notes:*

The vision is to increase ridership by 50% by 2020 and 100% by 2030 (over 2003 levels). A key component of this is to increase express bus service supported by park-and-ride facilities to serve peak period travel. A related component is to utilize highway infrastructure for transit by introducing more HOT and HOV lanes, bus only shoulder lanes, ramp meter bypasses, and other actions to give travel time advantages to buses. All of this supports efforts to concentrate investments in projects that will increase the throughput of people rather than vehicles.

Another focus of the vision is to have eight more transitways in place by 2030. One would be a commuter rail, four would be BRT, and three would be LRT.

The Transportation Policy Plan is currently being updated, with a draft scheduled for release in Spring 2014 and final approved document expected in December 2014, so some policies related to the Red Rock Corridor may change.

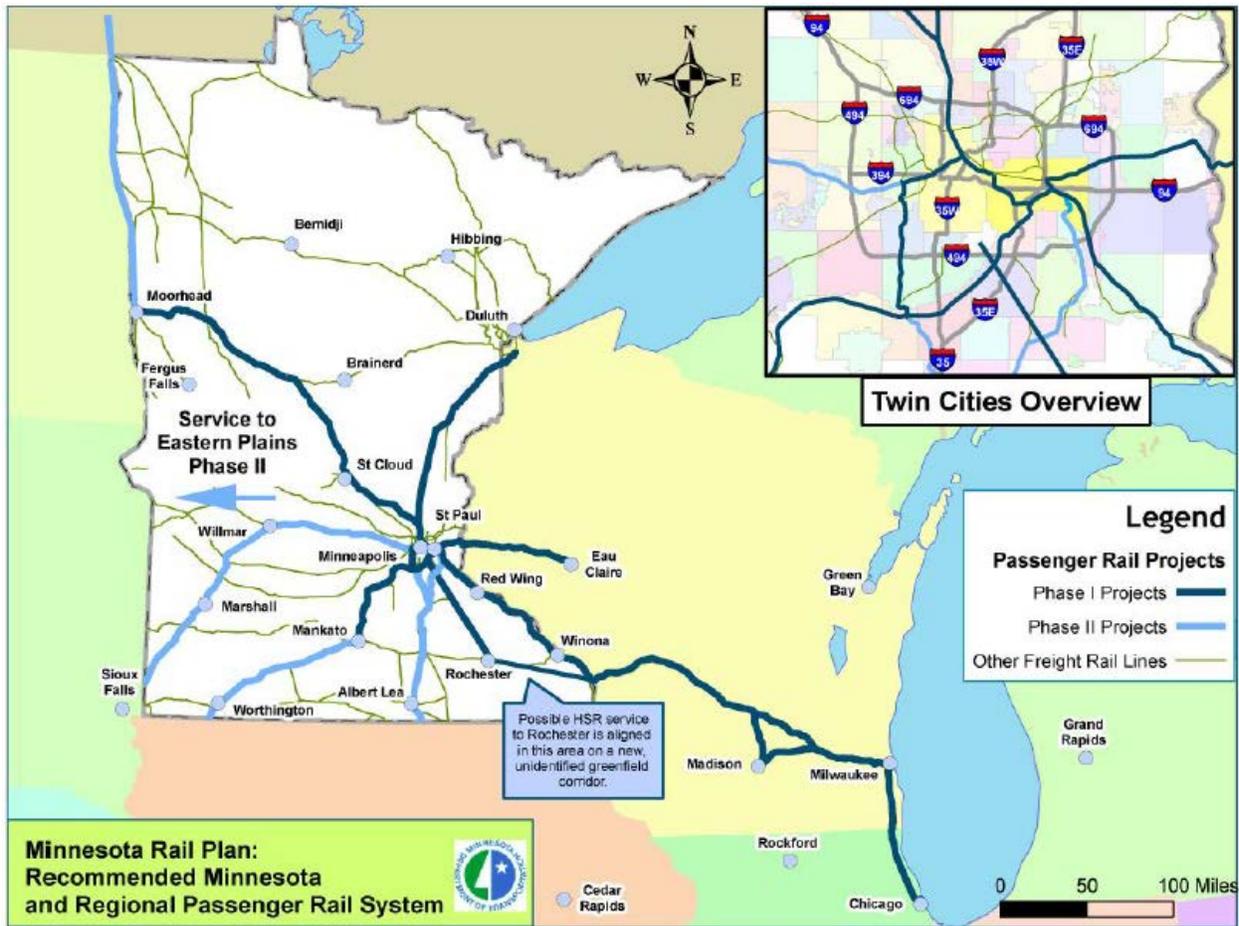
### **2.1.10 2010 - Minnesota Comprehensive Statewide Passenger Rail & Freight Plan**

The purpose of this report was to outline a long-term plan to coordinate investments in Minnesota's rail network. This report was intended as a component of the State Transportation Plan. The report pointed out that Minnesota carries a large amount of freight tonnage for a state of its size, but it has historically had very little passenger service available. Therefore, a main concern of this report is to expand passenger rail services using existing freight corridor using a range of available funding sources.



The plan called for comprehensive upgrades to the network to accommodate 25 mph speeds and 286,000 pound trains along all segments of the network. It also placed emphasis on investments targeted towards bringing about improved passenger service connecting the Twin Cities to Wisconsin and on to Chicago. It also confirmed the need for a passenger rail link between St. Paul and Minneapolis and connections to the downtown terminals of both cities for future intercity train service.

The following image summarizes the plan’s recommended future regional passenger rail system.



Source: 2010 Minnesota Comprehensive Statewide Passenger Rail & Freight Plan

This plan led to the formation of the Intercity Passenger Rail Forum to advise MnDOT on intercity rail opportunities and activities while this plan was being developed. The forum was asked to continue providing advice to MnDOT on a continuing basis.



**2.1.11 2010 - Metropolitan Council Park-and-Ride Plan**

This plan reflects policies developed in the Metropolitan Council’s 2030 Transportation Policy Plan. The purpose of the report is to select, prioritize, and implement park-and-ride improvements. The specific projects and priorities may change when a community joins the Transit Capital Levy Community group. The plan is based on the results of the 2008 Park-and-Ride Annual Survey. This survey concluded that that 70% of park-and-ride users come from within the transit taxing district, 14% come from within the 7-county metro area but outside of the transit taxing district, 8.5% come from the collar communities around the 7-county metro area, and 1% come from outside the 19-county metro area. 6.4% of users come from unknown origins.

There were a total of 25,792 park-and-ride spaces in 2008 and 18,335 spaces were used at the time of the survey. Most park-and-ride facilities are owned by Metro Transit, but some are owned by the Minnesota Valley Transit District and some by Maple Grove Transit. This study does not include park-and-pool facilities.

Demand was estimated using a Traffic Analysis Zone (TAZ) model. This demand model was quite linear. It started with estimated TAZ populations, then estimated the portion that is in the workforce, then estimated the portion that travels to St. Paul or Minnesota, then estimated the transit mode share, then estimated the share that used park-and-ride. Outputs were park and ride demand by TAZ. Estimates do not reflect transitway investments’ impact on ridership.

Park and ride generally serves customers who are traveling to the downtowns, as that is the destination of most of the routes.

The following is a summary of the usage of park and ride facilities along the Red Rock Corridor in 2008.

**2008 Park and Ride Annual Survey Summary**

<b>Park-and-Ride</b>	<b>Counted Usage</b>	<b>Capacity</b>	<b>Future Expansion</b>
Lower Afton	114	117	75
Newport	0	0	125
Cottage Grove	284	525	300

A summary of the park and ride facility usage in 2012 is provided below:

<b>Park-and-Ride</b>	<b>Counted Usage</b>	<b>Capacity</b>	<b>Utilization</b>
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Lower Afton	136	114	119%
Cottage Grove	314	525	60%

The report suggested that park-and-ride enhancements, such as a new park and ride facility in Newport, could be pursued in the Red Rock Corridor in advance of commuter rail to support bus service.

### 2.1.12 2012 - East Metro Rail Capacity Study

This report stated that the capacities of existing freight lines in the Red Rock Corridor were already constrained. Adding commuter rail, higher speed passenger rail, and additional intercity passenger rail will further strain capacity. The Ramsay County Rail Road Association (RCRRA) and Red Rock Corridor Commission (RRCC) commissioned this study to investigate the existing capacity constraints around Union Depot and the Red Rock Corridor and to identify solutions for increasing capacity.

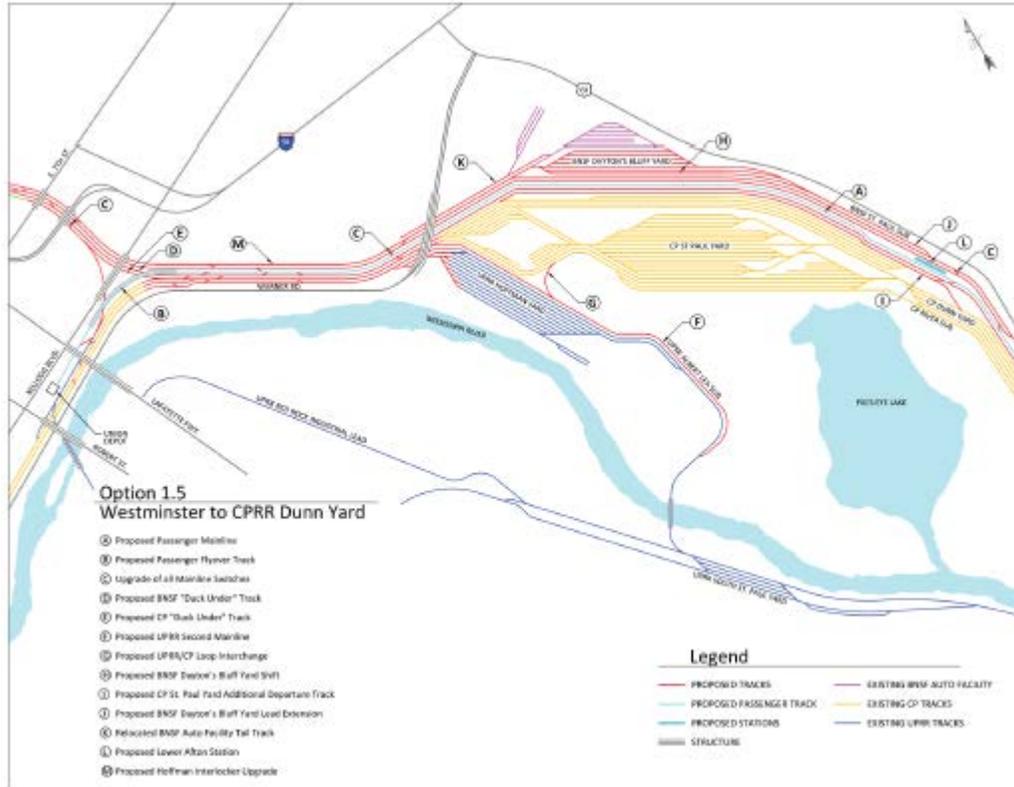
The analysis was carried out by defining the baseline and a scenario in which there was 36% more volume of goods being transported. Then there were five packages of capital improvement options developed. Minor improvements between Union Depot and the proposed South Afton Road Station (e.g. upgrades to switches, a new passenger flyover track) were shown to be insufficient to maintain current speeds with both the increase in volume and the introduction of new passenger service, but sufficient to maintain speeds with just the volume growth. Other options, which included a new third mainline track, could maintain or improve the average travel speeds even with the volume growth and the new passenger service.

The impact of the five capital improvement packages was tested through simulations. These simulations reflected three days of operation, train speeds per segment, acceleration/deceleration information, bridge outage schedules, and priorities for routing (i.e., passenger trains would be given first priority, while empty trains would be given last priority, and anyone could use any track). Comparison output for simulations was average freight train speeds, as this value best captured the quality of railroad operation. The simulations tested base demand, a 36% increase in freight but no new passenger service, and 36% increase in freight with new passenger service.

The recommendations were to pursue the package of minor improvements around St. Paul, except for the Union Depot flyover, to address freight volume growth, then to pursue improvements such as the new third mainline track along the TH 61 corridor all the way south to Hastings. This report proposed packages that can be constructed as funding becomes available. The report indicated that there were not many opportunities for increasing capacity through operational changes, except in the instances where train crew are changed while through trains are on the mainline.



An image showing the location of the proposed improvements around St. Paul are shown in the image below.

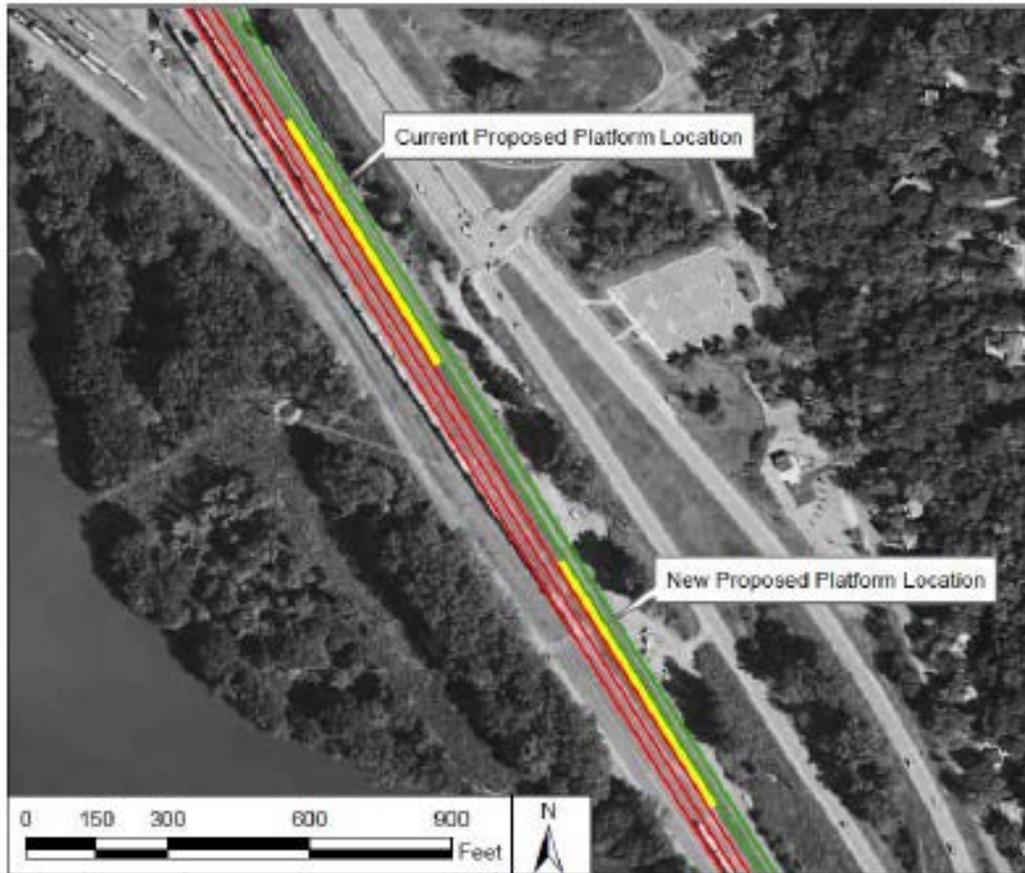


Source: 2012 East Metro Capacity Study

The report suggested that another evaluation may be needed in five to ten years, or whenever passenger rail is introduced, because conditions might have changed. For example, if either commuter rail or high speed rail does not go through Hastings, then the new Hastings rail bridge would not be needed.

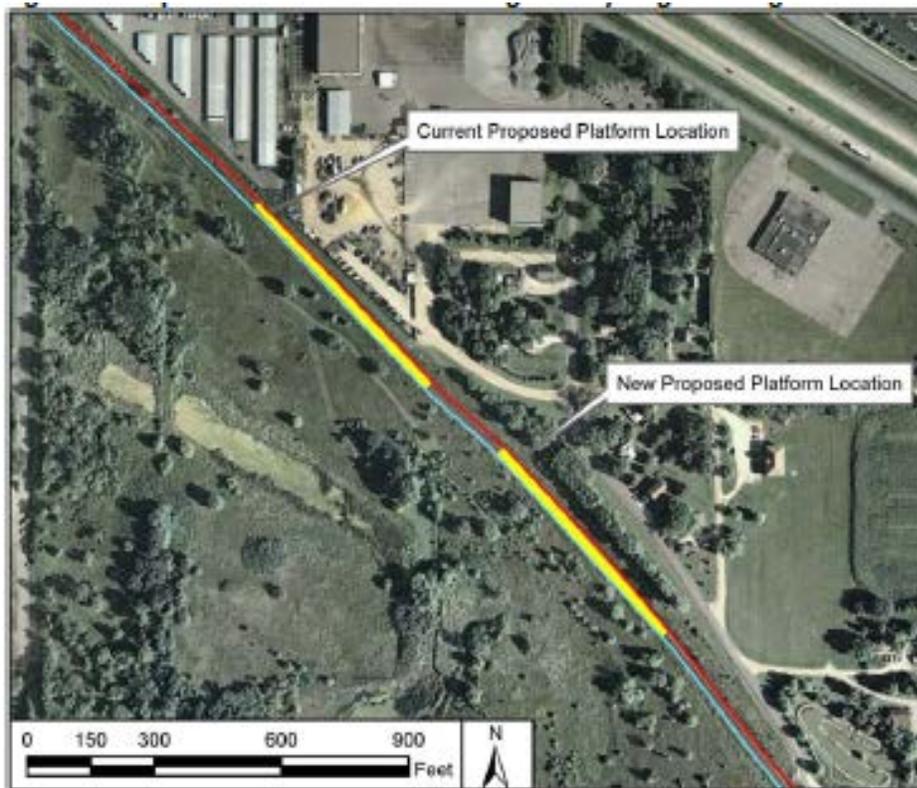
In this study, the Red Rock commuter rail service was modeled to include ten trains per day consistent with the conceptual schedule from the alternatives analysis study, and service would use the CP tracks between St. Paul and Minneapolis.

Notably, this study proposed a new location for the Lower Afton Station. The location proposed in the 2012 Station Area Planning report would interfere with the construction of a longer yard lead that could be used keep trains off of the mainline when handling manifest trains and interchanging railcars from them. The station location proposed in this study is shown below.



Source: Red Rock Station Area Planning Final Report, January 2012; and East Metro Rail Capacity Study, 2012.

A different station location was recommended for the Cottage Grove Station to improve track geometry. The station location proposed in this study is shown in the figure below.



Source: Red Rock Station Area Planning Final Report, January 2012; and East Metro Rail Capacity Study, 2012.

The Amtrak Empire Builder will start using Union Depot when modifications to the track are complete. The anticipated date of this modification is towards the end of 2013.<sup>1</sup>

A second Hastings Bridge would be needed to accommodate passenger rail in the current routing plans.

The modeling also included 12 higher-speed intercity passenger trains in the Twin City-Chicago Corridor per day.

*Public Involvement Notes:*

For this project, a project management team (PMT) was developed to provide technical input into the study. The PMT was part of a larger stakeholder group that was kept informed of the progress over the course of the project. The project team also held one-on-one meetings with the railroads. There were also a handful of public meetings.

<sup>1</sup> <http://finance-commerce.com/2013/04/amtrak-link-coming-to-union-depot/>



### **2.1.13 2012 - Annual Report of Minnesota High Speed Rail**

This report provided an overview of current high speed rail projects. These include the following:

- Second Train Study – This study is expected to be complete in 2013 and it will assess the feasibility of an additional daily roundtrip to Chicago to be provided by Amtrak. It will provide estimates of ridership, capital costs, and operating costs associated with introducing this service expansion.
- Tier 1 Environmental Impact Statement - This work began in 2012. It will study the environmental impacts of a high speed rail service between the Twin Cities and Milwaukee. This is an important step for gaining approval for construction of high speed rail from the Federal Railroad Administration.

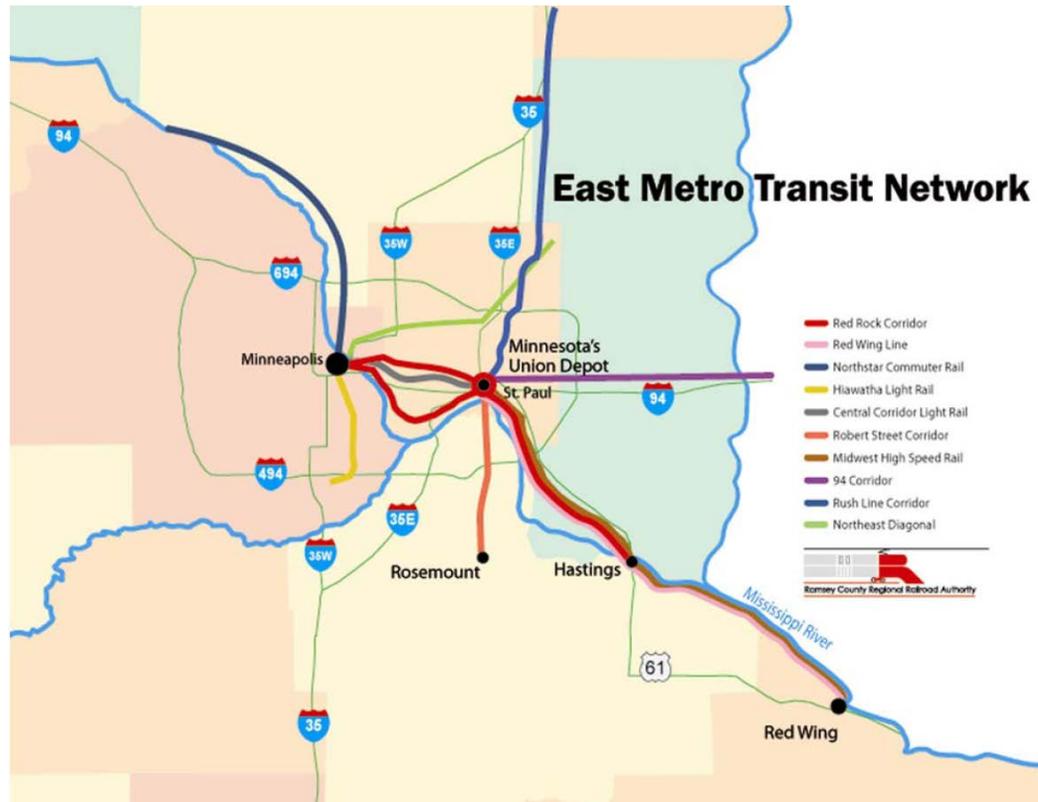
## **2.2 COMPREHENSIVE PLANS**

### **2.2.1 2008 - Ramsey County Comprehensive Plan – Section B (Transportation, Transit and Surface Water)**

One of the base assumptions of the transportation section of the Ramsey County Comprehensive Plan was that despite growing population and employment in the County, few highway projects were planned for the future. As a result, the County would have to rely on expanded travel demand management (TDM), travel system management (TSM), and asset management efforts to address the additional demand. Transit was categorized as a type of travel system management, and its stated purpose was to serve primary economic centers. The Plan said that the County will encourage state and federal governments to expand inter-city and suburban transit modes.

The plan highlighted Ramsey County's desire to pursue projects that will result in service at Union Depot.

The plan mentioned the Central LRT, Rush Line, Red Rock, Robert Street, Northeast Diagonal, Riverview, 1-94, Highway 36, Snelling Corridor, and high speed rail as key transit corridors. These corridors are shown in the image below.



Source: Ramsey County Comprehensive Plan: Section B

### 2.2.2 2009 - City of Hastings 2030 Comprehensive Plan: Transportation

This plan noted that MnDOT is responsible for TH 61, the main road through the City of Hastings. TH 61 in Downtown Hastings has left turns, driveways, and parking that slows down traffic.

The plan noted tension between the desire to widen the Hastings Bridge in order to reduce congestion and a desire to protect parking and properties in Downtown Hastings and to minimize speeding, noise, visual impact, and accidents.

Hastings is in Metro Transit Market Area III, which means that it has potential for peak-only express service, circulator service, paratransit, and ridesharing. Metropolitan Council has regional traffic forecasts for major roadways, and these are presented in the plan.

The report indicated that dial-a-ride service was provided through Hastings Transportation around the City (TRAC) at the time of the study. This service was provided with four buses, two or three of which are active at any given time. This service was supported by user fees, federal money, and state funding. This service has since been replaced by Dakota County Transit Link, a dial-a-ride service provided by Metro Council. There was also a dial-a-ride service that was specifically for seniors and people with disabilities that is called Dakota Area Resources and



Transportation for Seniors (DARTS). The City of Hastings is not currently a Transit Capital Levy Community.

The plan noted a park-and-pool facility at TH 61 and US TH 10 (north of the City). This facility closed in March of 2011. The plan also noted a future park-and-ride facility planned in conjunction with future commuter rail service.

Amtrak runs through Hastings but does not stop.

### **2.2.3 2010 - City of St. Paul Park 2030 Comprehensive Plan: The Plan for Transportation**

This report described how the City of St. Paul Park used to have a park and ride facility, but it was closed. This report stated that residents can use the Cottage Grove or Lower Afton Road park and ride facilities to access express routes. The report indicated that the Newport Transit Station will be another option once that station opens in 2013. The report discussed South County Circulator dial-a-ride service that connects Newport, St. Paul Park, and Cottage Grove. This service has been replaced by Washington County Transit Link service, a dial-a-ride service provided by Metro Council. The plan noted that the City is supportive of Red Rock Corridor commuter rail planning efforts and would support high speed rail going through the City if it reduced the costs of introducing commuter rail.

### **2.2.4 2010 - Newport 2030 Comprehensive Plan: Transportation Section**

This plan summarized transportation activity in the plan. A major transportation activity that had been ongoing for more than a decade was the upgrade of the I-494 and TH 61 interchange. This project will improve traffic flow in the City, but it came at the cost of a loss of 9% of its tax base and 500 jobs.

There is significant BNSF and CP railroad traffic through the City, with 80 trains per day cited in the report. It is expected that there will be 120 trains per day in 2030. The plan indicated that there were four at-grade crossings in the City at the time of the study, although all of the cross traffic is relatively light. Newport recognized that commuter rail service might come one day and that it will have a station.

The report indicated that there had recently been pedestrian/bicycle bridges built over TH 61 to assist with access to the transit station sites, of which there were three. The County purchased a former Knox Lumber site, so the station site has been selected.

At the time of the writing of the plan, there is a South County Circulator service which was started in 1997. It was also called Route #320, Midday Service. It was provide on a dial-a-ride basis. This service has since been replaced by Washington County Transit Link, a dial-a-ride service provided by Metro Council. The City was and is also served by conventional express bus routes #365, #364 and #361.



The plan stated that the Metropolitan Council Office of Transportation and Transport Development proposed adding bus-only shoulder lanes in each direction on TH 61 in anticipation of greater transit usage after improvements have been made to the I-494 /TH 61 corridor. Signage and a local bus circulator route on 7<sup>th</sup> Avenue was also recommended by the Metropolitan Council. The report stated that Newport was in Transit Market Area IV, which supports express service in the peak period and general public dial-a-ride.

### **2.2.5 2010 - City of Woodbury 2030 Comprehensive Plan – Transportation**

There is not a station planned in the City of Woodbury, but parts of the City were included in the 2007 Alternatives Analysis study area and it is assumed that some people from the City will use the Red Rock Corridor transit service.

The City of Woodbury's Comprehensive Plan does not make mention of the Red Rock Corridor. Rather, they show support for the development of LRT in the I-94 Corridor and in the development of more express bus services to Downtown St. Paul and Minneapolis. The City is already served by several express routes and park-and-ride facilities, and future park and ride facilities are planned. Local service is currently available through a dial-a-ride service. Prior to 2005, local conventional bus service was available, but this was eliminated due to low ridership.

### **2.2.6 2010 - City of St. Paul 2030 Comprehensive Plan – Transportation**

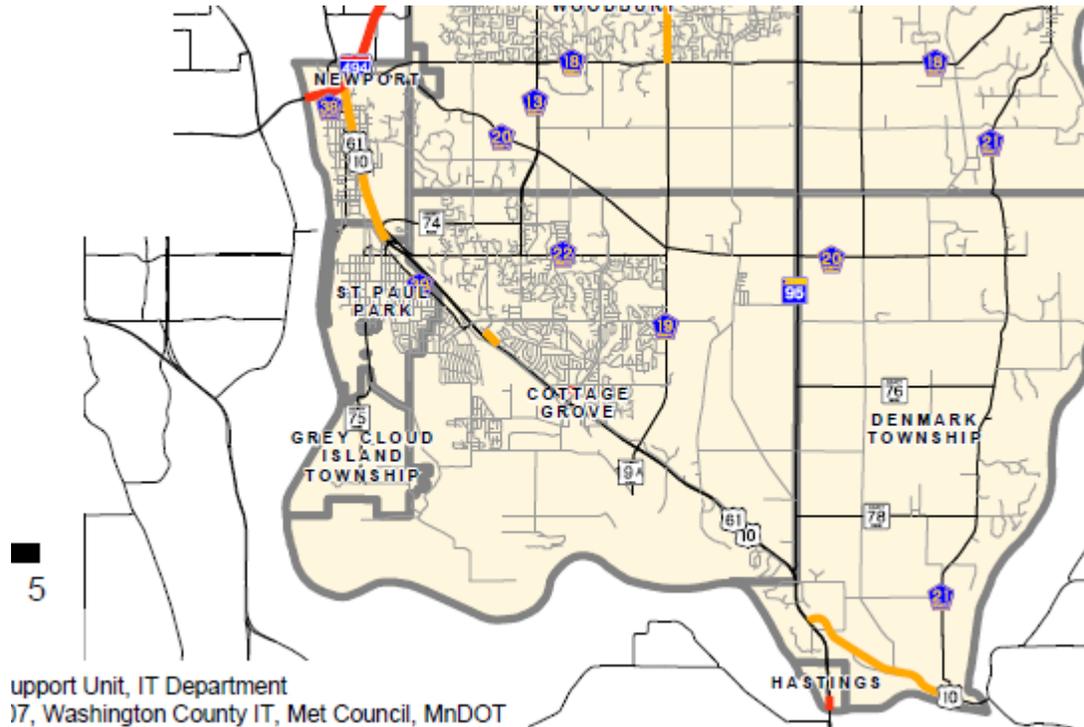
The City of St. Paul Comprehensive Plan makes mention of the Red Rock Corridor as one of seven transitways that will serve the Downtown in the future. The Union Depot is highlighted as the convergence point of many of these services, including high-speed rail. The plan labels both the CP and BNSF alignments of the Red Rock Corridor as transitways. It also identified I-94 as potentially being able to accommodate limited stop bus service. I-94 currently has shoulder lanes but no stations.

### **2.2.7 2010 – Washington County 2030 Comprehensive Plan – Transportation**

The Transportation section of the Washington County Comprehensive Plan supported the development of transitways throughout the Region, including the five within its jurisdiction (Gateway, Red Rock, Rush Line, Highway 36, and the High Speed Rail line). Planning is furthest along for the transitway in the Red Rock Corridor.

In support of the Red Rock Corridor service, the plan described a park and ride facility in Newport that would be built after station area planning work was carried out. This park and ride facility is currently under construction.

The Comprehensive Plan also discussed the existing roadway network, which includes the Red Rock Corridor. TH 61 is considered a principal arterial, the highest roadway designation. Present congestion along this corridor is minimal, as shown in the figure below, which highlights segments of the road with higher volume to capacity ratios (segments on which volume exceed capacity are shown in red).



Source: Washington County 2030 Comprehensive Plan

## 2.2.8 2011 - City of Cottage Grove 2030 Comprehensive Plan – Transportation

In this plan, overall transportation goals related to transit included:

- Support and participate in the Red Rock Corridor Commission
- Support the development of high speed rail between St. Paul and Chicago along a route that goes through Cottage Grove
- Expand commuter bus and circulator bus service

In the northern part of the City, TH 61 was built to freeway standards and has no at-grade crossings. At the time of the creation of the report in 2008, the current usage volumes were 32,500 vehicles per day, and these were expected to grow to 52,000 by 2030. In the southern part of the City, TH 61 has several intersections. In this section, at the time of the plan, there were 28,500 vehicles per day, and this was expected to grow to 36,000 per day by 2030.

The City of Cottage Grove is in Metro Transit Market Area III and IV. In addition to the express bus services, there are dial-a-ride services provided by Metro Council called Transit Link. These replaced the services described in the report provided by Human Services, Inc. and South County Circulator.



It is recommended that in the short term, express bus service be expanded with more peak period service, new midday services, and new crosstown services that serve destinations such as the Hiawatha LRT line, the airport, and the Mall of America.

The plan called for a study of the station areas around Langdon Village and the site of the existing park-and-ride facility, and this was carried out as part of the Station Area Planning work which is described in Section 2.3.

## **2.3 AREA STUDIES**

### **2.3.1 2011 - Market Assessment Report: Red Rock Corridor Station Area and Site Master Planning Study**

This report discussed how the primary driver of change in the Red Rock Corridor will be employment and population growth, but it also acknowledged that transit investments may play a role, too. The report concluded that the corridor is mostly residential in nature, and the major employers listed were school districts, county governments, 3M in Cottage Grove, and a medical center in Hastings. The report provided employment, population, and households estimates for ½ mile, 1-mile and 3-mile catchment areas. These estimates are shown in the table below.



**Table 3**  
**Population, Household, and Employment Forecasts**  
**within Station Areas**  
**(1/2-mile, 1-mile, 3-mile radii)**

	Population			Households			Employment		
	1/2-Mile	1-Mile	3-Mile	1/2-Mile	1-Mile	3-Mile	1/2-Mile	1-Mile	3-Mile
<b>2010</b>									
Lower Afton	575	5,319	64,583	202	1,979	24,632	149	547	27,949
Newport	485	2,564	52,704	199	1,055	21,063	1,488	4,583	20,008
Hamlet Park	1,837	8,979	32,911	697	3,369	12,169	601	3,605	7,404
Langdon Village	1,246	3,473	22,367	424	1,196	8,078	1,293	2,668	6,401
Hastings	1,580	6,665	25,234	690	2,640	9,592	1,809	4,729	9,392
<b>2020</b>									
Lower Afton	580	5,733	67,064	204	2,160	25,887	180	370	31,961
Newport	544	2,925	56,573	225	1,220	23,075	1,883	5,762	22,474
Hamlet Park	1,926	9,632	43,196	719	3,633	16,181	690	4,097	8,894
Langdon Village	1,460	3,766	28,785	499	1,277	10,459	1,447	3,298	7,716
Hastings	1,652	8,500	30,634	751	3,503	12,190	1,872	5,353	9,890
<b>2030</b>									
Lower Afton	597	5,900	69,972	213	2,256	27,240	190	391	33,901
Newport	591	3,289	60,046	253	1,421	24,501	2,350	6,732	24,057
Hamlet Park	1,876	9,580	49,556	720	3,654	19,157	720	4,337	9,784
Langdon Village	1,675	3,875	34,838	600	1,378	13,108	1,613	3,706	8,788
Hastings	1,730	10,563	34,421	830	4,405	14,181	1,953	5,766	10,551
<b>2010-2030 Change</b>									
Lower Afton	22	581	5,389	11	277	2,608	41	-156	5,952
Newport	106	725	7,342	54	366	3,438	862	2,149	4,049
Hamlet Park	39	601	16,645	23	285	6,988	119	732	2,380
Langdon Village	429	402	12,471	176	182	5,030	320	1,038	2,387
Hastings	150	3,898	9,187	140	1,765	4,589	144	1,037	1,159

Source: Metropolitan Council

Note that in the above table, two stations for Cottage Grove are listed, Hamlet Park (the location of the existing park-and-ride facility) and Langdon Village. It is assumed that only one of these stations will be built, and in the Station Area Planning work, the Langdon Village site was selected as the locally preferred alternative for a commuter rail station. The advantage of the Langdon Village site was that it has significant residential development planned and greater potential for the development of land adjacent to the station. The report provided land to value ratios and identified developable land around each station area.

The report states that 80% of households in the corridor own their home. It also mentions that there are only three retail areas, all of which are fairly local in reach. These are located at TH 61 and 80<sup>th</sup> Street in Cottage Grove, TH61 and Jamaica in Cottage Grove, and HW 55 and Pleasant



Drive in Hastings. The prospects for additional office space development in the Red Rock Corridor are limited because there is lots of empty office space in the East Metro area.

The report provided several examples of TOD in places such as Colorado, Texas, Washington, Oregon, Illinois, and Wisconsin.

The summary of the report suggested that of all of the stations, Hastings has the greatest potential for TOD in the near term given its existing grid roadway network. Other stations will have to develop their roadway network and attract development to meet the expectations of TOD.

## **2.4 SITE PLANS**

### **2.4.1 2009 - Union Station Environmental Assessment**

The Union Depot Environmental Assessment was carried out by the Ramsey County Regional Railroad Authority in order to assess what, if any, environmental impacts would result from the rehabilitation of Union Depot and its restoration as a transportation hub. This report outlined the intended future uses of Union Depot for Amtrak service, Greyhound service, Jefferson Bus Lines, Metro buses, taxi service, bicycle services, and pedestrian connections. The results of the assessment were that there would not be any significant environmental impacts from the rehabilitation of the station.

### **2.4.2 2010 Union Depot Activation and Development Strategy**

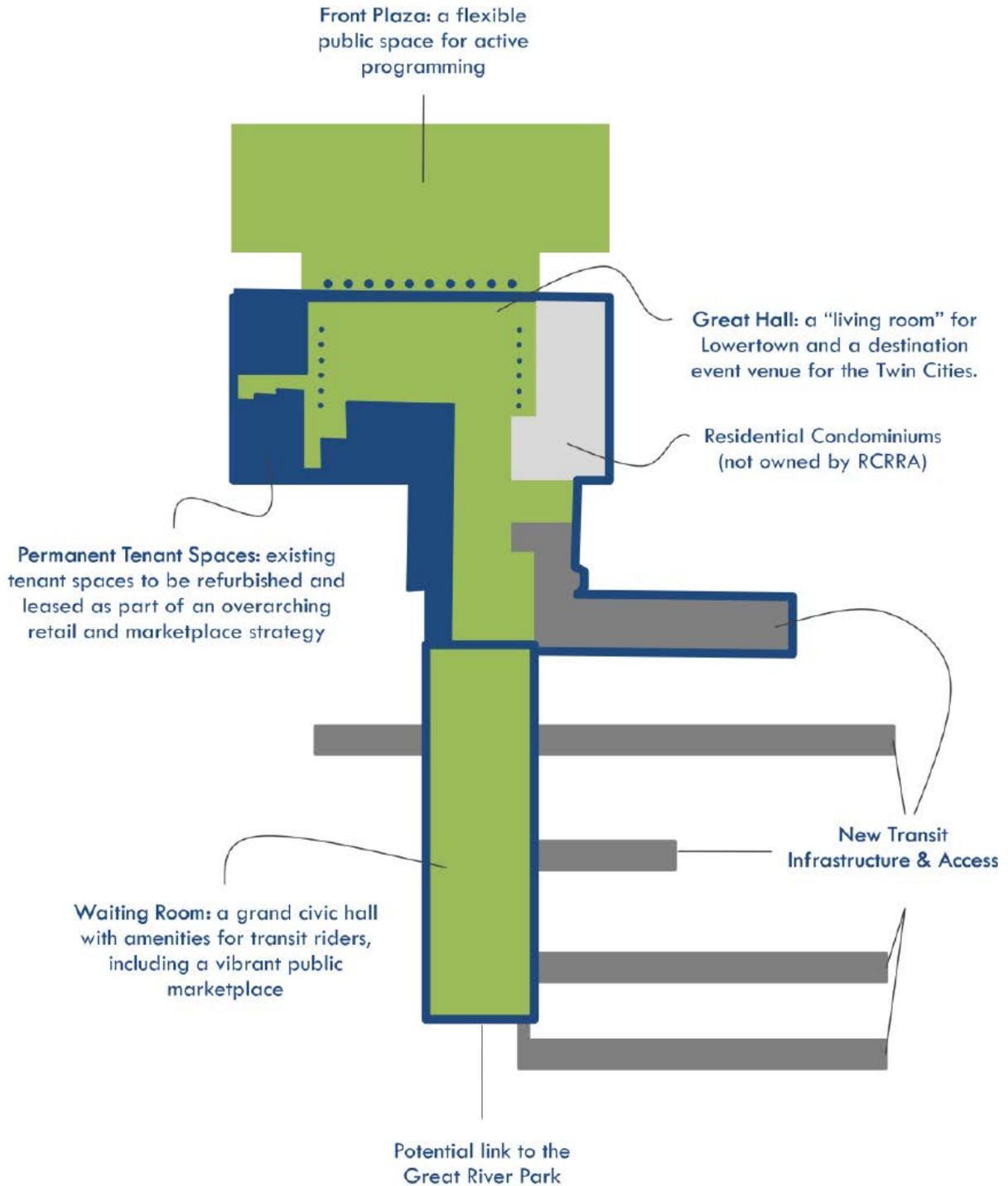
This report summarized the vision for Union Depot and the potential benefits it can bring to St. Paul and the Region. The market assessment indicated that there were 4,500 residents and 35,000 workers within ½ mile from the Depot, and that the growth in this area between 2000 and 2009 was extensive. The report provided a three-phase vision for the Depot, as follows:

Phase 1 – 175,000 riders per year – Amtrak, Greyhound, Jefferson Lines, and Metro Transit

Phase 2 – 925,000 riders per year – all of the above plus the Central Corridor LRT

Phase 3 – 3,870,000 riders per year – all of the above plus high-speed rail, inter-city rail service, Red Rock service, Rush line service, Gateway service, Riverview service, Mankato service, and Robert Street service.

A concept plan for the depot is shown in the image below.



Source: Union Depot Activation and Development Strategy



### **2.4.3 2012 - Station Area Planning Final Report**

#### *Hastings Station Summary Notes:*

The proposed Hastings Station is located at the edge of downtown Hastings along 2<sup>nd</sup> Street, which is lined with historic 2- and 3-story buildings. The development and activity peters out in the blocks closest to the station site. There is development potential around the station at several sites, notably along 2<sup>nd</sup> Street and in the blocks along the CP corridor. This document proposes future uses and building heights at these sites.

The station would have a 600' platform. The document proposes that the preferred track for the commuter rail serve would be the one furthest West, which is currently used to serve a freight customer off of the main line. However, it also suggests that having the ability to use tracks on both sides of the existing depot would be ideal in a situation where the commuter rail line is extended or high-speed rail is introduced into the corridor.

There is an at-grade crossing at 2<sup>nd</sup> Street and it is designated a "quiet zone." Additional safety features are added to crossings in "quiet zones" so that the train horns do not need to be sounded.

When commuter rail starts to serve Hastings, it is envisioned that Hastings Station would not only serve Hastings residents, but also residents in eastern Dakota County and the Red Wing area as a terminus station. There is the possibility of the commuter rail line being extended south of Hastings at a future date.

The station plan uses the assumption that 500 stalls will be needed for commuter parking. The plan noted that the Metropolitan Council had estimated a parking demand of 90 at this station, the Bus Feasibility Study had recommended 115 to 285 stalls, while the Alternatives Analysis had recommended 195 stalls. The plan also suggests that the parking initially be provided through surface lots, but as time goes by and there is greater development, that a parking structure ("ramp") be built and that the surface parking just West of the station be used for short-term parking.

In addition to driving, passengers would be able to access the station via the sidewalk network or via the bicycle network which runs along the Mississippi River.

The anticipated costs for the station area include \$14.75 million for public infrastructure and \$56.6 million for development. A park and pool lot has been constructed at this site in anticipation of future transit enhancements. A map of the near-term station area plan is provided below.



Source: Station Area Plan

#### *Langdon Village Station Summary Notes:*

The site is different that the site currently served with bus service and with a park-and-ride facility. This site has the advantage of meeting the Community's planning goals and not requiring passengers to cross active tracks. It is further south from the current express bus station, and is expected to be a more central location in the future given expectations of future residential development.

The site is currently underdeveloped. The City of Cottage Grove's Public Works facility is located on the site, and the City has been purchasing other parcels in the vicinity to create space for future transit-oriented development.

A second track could be built in this location to add capacity and reduce conflicts between passenger and freight trains.

Park-and-ride is envisioned first on surface lots, and as development progresses, in parking structures. The plan foresees a need for 850 parking stalls for commuters. This is in addition to 3,948 stalls needed for the new developments. The current Hamlet Park park-and-ride facility has 545 stalls.

A completely new roadway system, including sidewalks and regional trail facilities, would have to be built in this area.

The public investment is anticipated to be \$36.4 million and the private investment is estimated at \$247.7 million. The near term plan for the station is shown below.



Source: Station Area Plan

#### *Newport Station Summary Notes:*

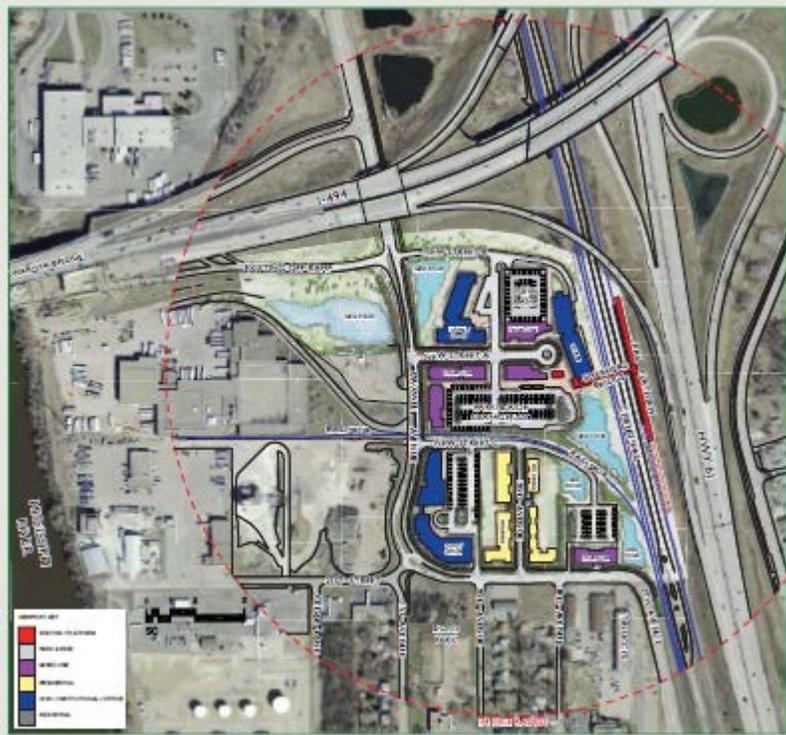
The land for the future station has been purchased by the Washington County Regional Rail Authority in 2010. It is located at the intersection of I-494 and Highway 61. There are some existing residential and commercial areas south of the station, but the existing development, roadway network, and sidewalk system is limited. The site is likely larger than what is needed for a transit station and park-and-ride facility, so other uses could fit there, such as office space and a hotel. The plan suggests an almost complete change in the land uses in the station area, although it is cautious about saying how marketable development on this piece of land will be.

Passengers will be required to use an overhead walkway to access the station due to the presence of active mainline tracks between the commuter rail tracks and the park-and-ride site.

The park-and-ride demand is expected to require about 500 stalls. Metropolitan Council estimated a demand of 125 stalls for bus service, and the Washington County Capital Improvement Plan suggests 500 stalls are required. The parking stall requirements related to the new development is estimated to be 2783.



The estimated costs are \$28.9 million for transit costs and \$205.3 million for private development.



Source: Station Area Plan

#### *Afton Station Summary Notes:*

This proposed station is located just north of the existing park-and-ride lot. This location would allow for the efficient use of space, for views to be maintained, and for easier access by drivers in the morning. The old site is constrained by Native American burial grounds and the shape of the land parcel. The plan is to move the park-and-ride to the north lot and allow the existing lot to be returned to nature.

The current park-and-ride is at capacity with 114 stalls. Most people using this facility are traveling to downtown Minneapolis, as St. Paul is too close to be an attractive destination by bus. The new facility is expected to accommodate 275 commuters.

There is no development potential around this site, although a small private development could be possible within the new parking structure. The suggested use is a welcome center for the adjacent regional park.

Circulator routes 350 and 363 could be adjusted so that they serve the new facility.



The public costs are assumed to be \$15.1 million, while the private costs would be \$0.5 million. The long-term plan for the station area is shown below.



Source: Station Area Plan

Vision Notes:

Vision elements for all of the stations included the following:

- Bus service between Hastings and the two downtowns will develop ridership for the eventual commuter rail service.
- Station area development will happen slowly over time.
- Current uses will remain until they choose to leave.
- The planning horizon is 2020 for service to Hastings, and the line may be extended by the 2040 planning horizon.



## 2.5 ORDINANCES OR DESIGN STANDARDS

### 2.5.1 1997 - Guidelines on Shoulder Use by Buses

The purpose of allowing buses to use the shoulder lanes of highways is to encourage transit use and fully use the capacity of the highway system. These guidelines describe how the shoulder lanes are to be used by buses.

Firstly, buses can only use designated shoulder lanes if their operations are funded by the Metropolitan Council and their drivers have received instructions on how to drive in these shoulder lanes. Designated shoulder lanes should be provided in segments of the highway system where there are predictable congestion delays, defined as speeds of less than 35 mph during the peak periods. To be considered, congestion delays should occur at least once a week, at least six transit buses per week should use the shoulder lane, and the expected times savings should at least eight minutes per mile per week. The width of the shoulder lane should be ten feet or more.

Guidelines for operating in the designated shoulder lanes are as follows:

- Bus shoulders can only be used when traffic is moving less than 35 mph
- The maximum speed of buses while using the shoulder is 35 mph
- Buses in the shoulders should not operate more than 15 mph greater than the regular traffic
- If traffic is stopped, the speed of buses should be no more than 15 mph
- Use of shoulders should be reduced if water, snow, or ice is present
- Bus shoulders can be used for deadheading

This MnDOT policy document is still current and valid.

### 2.5.2 2012 - Regional Transitway Guidelines

This document develops guidelines for four transitway modes: (1) commuter rail, (2) LRT, (3) Highway BRT, and (4) Arterial BRT. They do not directly address Express Bus or BRT within an exclusive guideway. Highway BRT service types include station-to-station service (all-day frequent service) and express service (commuter express service coordinated with Highway BRT station-to-station service). Highway BRT station-to-station service is a coordinated set of routes that stop at most stations in a BRT corridor, which is defined by stations and a runningway. It provides service 7 days a week, 16 hours a day, and at least every 10 minutes during peak periods with lower frequencies during the mid-day and evenings. Weekend frequency is based on demand. Highway BRT is coordinated with station-to-station service, using the same BRT runningway and park-and-ride facilities as the station-to-station service. It provides at least 30-



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minute service in the peak periods in Transit Market Areas I and II with at least three peak period trips in Transit Market Areas III and IV.

These guidelines require coordination of transit services, the elimination of competing routes, appropriate route structure, minimum frequencies, minimum span of service, travel times, productivity, and acceptable loading. They also address station siting and spacing, vehicle design, and fare collection system design.



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## 3.0 Data Review

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The following summarizes information available from existing transitway services, surveys, and regional transportation modeling.

### 3.1 TRAVEL

#### 3.1.1 2010 Travel Behavior Inventory (TBI) Household Survey

The “*draft version*” of the TBI survey data consists of three sets of information including:

- Person Records,
- Household Records, and
- Trip Records

The data was gathered by the Metropolitan Council via two different survey types, GPS Survey and Home Interview Survey (HIS). There were 10,362 household records in the survey dataset, 214 of them were collected via GPS survey while the remaining 10,148 records were obtained via HIS. The survey followed 21,298 individuals from those 10,362 households and generated a total of 79,236 trips that traveled between December 2010 and November 2011. Trips include information about origin, destination, mode choice, and trip time of day.

#### 3.1.2 Transit On-Board Survey

The transit on-board survey was conducted by the Metropolitan Council and the results are trip data from 2005 and 2010 that have been combined. Each trip record was geocoded with the traveler’s origin zone, destination zone, and boarding and alighting zones. The survey also included some other pertinent trip information such as access and egress modes, number of transfers, and time-of-day. The 2010 survey was conducted in four separate time-of-day periods, including AM Early, AM Peak, Midday, and PM Peak, while the 2005 survey was conducted only for two time periods, peak and off-peak. The 2010 data set will be used primarily for this study, while the expanded 2005 records can be used for an enhanced sample, if necessary.



### 3.1.3 Twin Cities Regional Travel Demand Forecast Model (RTDFM)

The Metropolitan Council owns the Twin Cities Regional Travel Demand Forecast Model (RTDFM). The model was mainly developed using the Cube/TPPlus (TPP) software package and is executed in a DOS environment. The model also contains several FORTRAN executable routines and a DLL file (DFORRT.DLL). The model chain is executed using a DOS batch file that comprises a series of TPP scripts or routines and executable files. This model is used in conjunction with updated 2010 and 2030 highway networks and the 2010 socioeconomic data (SED) from the Metropolitan Council.

COUNTY	POPULATION			HOUSEHOLDS			TOTAL EMPLOYMENT		
	2010	2030	CAGR	2010	2030	CAGR	2010	2030	CAGR
Anoka	330,844	425,260	1.3%	121,227	168,690	1.7%	106,635	153,810	1.8%
Carver	91,042	195,400	3.9%	32,891	76,180	4.3%	31,676	59,080	3.2%
Dakota	398,552	520,930	1.3%	152,060	209,770	1.6%	167,076	215,250	1.3%
Hennepin	1,152,425	1,387,900	0.9%	475,913	586,840	1.1%	796,448	1,105,230	1.7%
Ramsey	508,640	607,880	0.9%	202,691	249,938	1.1%	315,928	430,890	1.6%
Scott	129,928	221,770	2.7%	45,108	86,990	3.3%	39,966	56,190	1.7%
Washington	238,136	357,290	2.0%	87,859	142,159	2.4%	69,891	128,000	3.1%
<b>Total</b>	<b>2,849,567</b>	<b>3,716,430</b>	<b>1.3%</b>	<b>1,117,749</b>	<b>1,520,567</b>	<b>1.6%</b>	<b>1,527,620</b>	<b>2,148,450</b>	<b>1.7%</b>

The 2010 and 2030 socioeconomic data (SED) for the seven counties within the modeled region are shown in the table above. The compounded annual growth rate (CAGR) for regional population between 2010 and 2030 is approximately 1.3%, while the CAGR for regional households and total employments are 1.6% and 1.7%, respectively. Carver County was projected to have the fastest growing population and employments at approximately 3.9% and 3.2% per year, respectively. Although it currently has the lowest total population and employment among the seven counties, Washington County, where Cottage Grove and most of the Red Rock alignment are located, has a relatively high employment growth rate at 3.1% per year. The population and employment in the Red Rock Corridor's study area grow approximately 1.2% and 1.6% per year, respectively, compounded annually as shown in the table below.

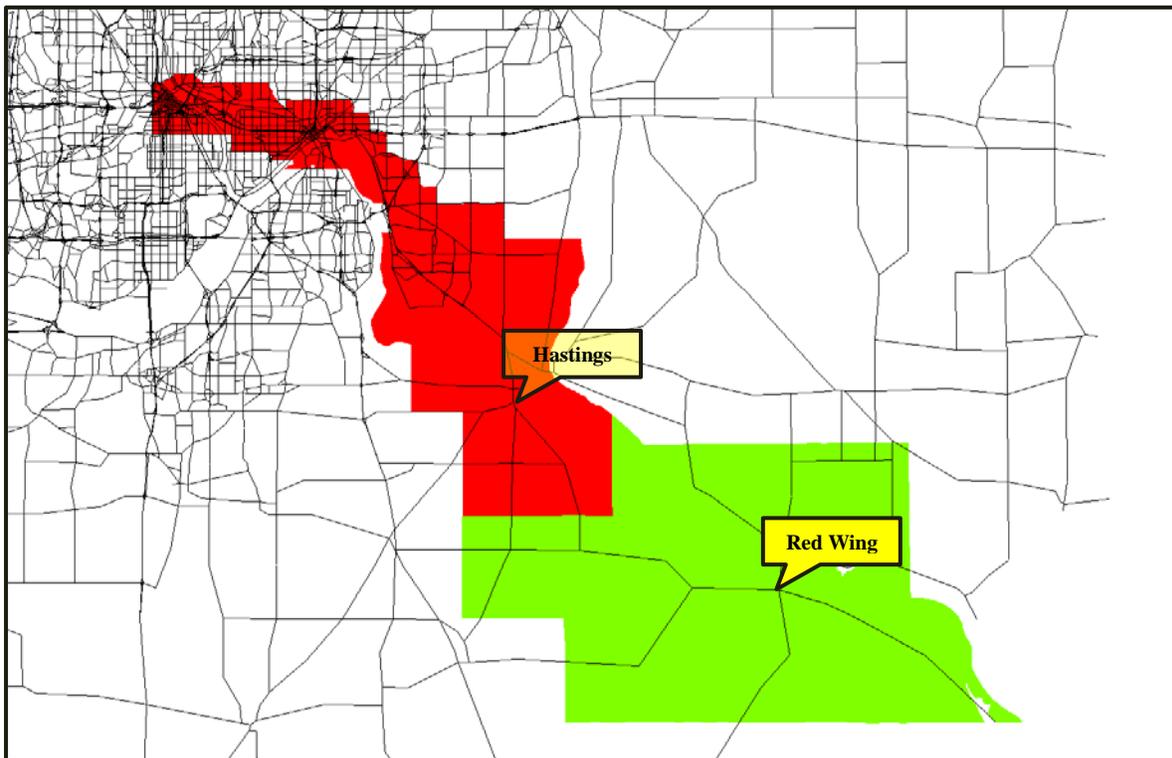


**Socioeconomic Data Summary in the Red Rock Corridor**

COUNTY	POPULATION		
	2010	2030	CAGR
Population	398,991	509,098	1.2%
Households	160,154	211,667	1.4%
Employment	373,367	515,789	1.6%

The study area coverage for the Red Rock Alternatives Analysis Update is shown in the figure below. It is made up of the designated Red Rock Corridor and points to the southeast of Hastings to Red Wing.

**Red Rock Alternatives Analysis Update Study Corridor**



A review of the model has suggested that only Routes 361 and 364 were coded. Route 365 will have to be incorporated into to the model for the ridership analysis for this alternatives analysis update. The express bus routes proposed in the Commuter Bus Feasibility Study were not included in the Met Council’s transit network model.



3.1.4 2012 - Park-and-Ride User Origins Data Collected: September/October 2012

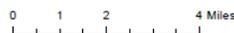
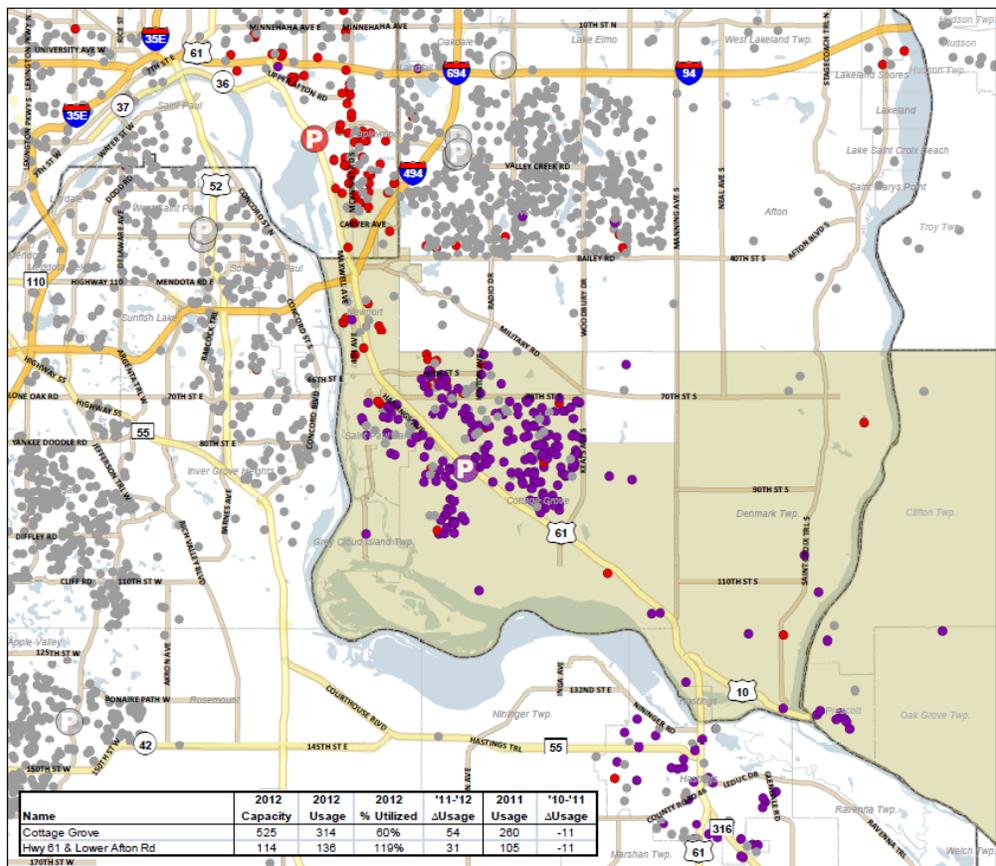
The document provides a summary of the current usage of the two existing park-and-ride facilities in the Red Rock Corridor.

It shows that the Cottage Grover park-and-ride facility is currently 60% utilized. The majority of its users come from the City of Cottage Grove, but there are clusters of people from Saint Paul Park and Hastings. The park-and-ride at Lower Afton Road is over-utilized at 119%. The majority of users come from St. Paul, but there are also pockets of users from Newport and Cottage Grove.

Hwy 61 South

Park & Ride Facilities & 2012 User Origins

- P Hwy 61 & Lower Afton Rd
- Hwy 61 & Lower Afton Rd P&R User
- P Cottage Grove
- Cottage Grove P&R User
- P Other Park and Ride Facilities
- Other P&R Users
- Hwy 61 South Travel Corridor



Map Created: 2/12/2013

Park-and-Ride User Origins Data Collected: September/October 2012

3.2 POPULATION

Population figures for 2010, as well as forecasts for 2020 and 2030, are available by traffic analysis zone (TAZ). These values will be used for the travel forecasting work.



### 3.3 EMPLOYMENT

Employment figures for 2010, as well as forecasts for 2020 and 2030, are available by traffic analysis zone (TAZ). These values will be used for the travel forecasting work.

### 3.4 TRANSPORTATION SERVICES

The following lists information about existing and planned transitways in the Minneapolis-St. Paul area.

#### 3.4.1 Northstar Commuter Rail

The following information is from the National Transit Database: It provides a summary of the operations and costs of the Northstar Commuter Rail service which opened in 2009 and serves travel between Big Lake and downtown Minneapolis.

	2011	2010	2009
Vehicles Operated in Maximum Service	20	23	23
Unlinked Trips	703,424	710,426	78,782
Operating Costs	\$15,957,385	\$15,591,215	\$4,977,709
Fare Revenues	\$2,670,812	\$2,458,233	\$269,527
Vehicle Revenue Miles	537,307	593,428	68,513
Vehicle Revenue Hours	14,595	16,341	1,474
Operating Expense per Vehicle Revenue Mile	\$29.70	\$26.27	\$72.65
Operating Expense per Vehicle Revenue Hour	\$1093.35	\$954.12	\$3377.01



### **3.4.2 2012 Cedar Avenue Transitway Update**

This presentation summarizes the elements included in the three stages of the Cedar Avenue BRT project. In the first stage, there will be station-to-station service between the Mall of America and Apple Valley Station. In subsequent stages, infill stations will be built and the line will be extended to 215<sup>th</sup> St Station. The line includes a mix of walk-up and park-and-ride stations. The total cost of construction is \$250 million, although stage 1 only costs \$112 million.

The Metro Red Line (the new name for the Cedar Avenue BRT), which will operate along the transitway, will replace a handful of express bus services and operate every 15 minutes throughout the day. The service will make use of new 40-ft buses and new transit signal priority in the corridor. At the stations, customers will be able to look at real-time bus arrival time information and use ticket vending machines similar to the ones on the LRT and commuter rail lines.

The presentation discusses the various roles of the Council, DCRRA, and MVTA as well as the funding source for Stage 1 investments.

### **3.4.3 Orange Line (I-35W BRT)**

METRO Orange Line BRT will utilize roadway improvements, upgraded transit stations, and improved bus service to provide fast, frequent, and reliable all-day transit service along I-35W south of downtown Minneapolis. The 22-mile corridor has been the most heavily traveled express bus corridor since the 1970s, with about 14,000 daily rides.

Buses will travel on Marquette and 2<sup>nd</sup> Avenues in downtown Minneapolis, utilizing congestion-free, transit-only lanes. South of downtown, the Orange Line will provide frequent, limited-stop service to upgraded stations at Lake Street, 46<sup>th</sup> Street, 66<sup>th</sup> Street, American Boulevard, 98<sup>th</sup> Street, and Burnsville Transit Station. The second phase of the project is planned to extend service and improvements from Burnsville to Lakeville.

Numerous investments in the I-35W South corridor have helped to establish strong transit markets for both station-to-station and express BRT, and provided major station improvements that are critical to opening Orange Line service. These include the construction of an online station at 46<sup>th</sup> Street and a park-and-ride at Kenrick Avenue in Lakeville, and the restructuring of service in the corridor serve these stations. A family of corridor transitway services, including Orange Line BRT and BRT Express, will continue to benefit from shared capital improvements and complimentary service planning.

In 2013, Metro Transit will update the project plan for the corridor, engaging community members, employers, institutions, and other stakeholders. The purpose of this project plan update is to complete conceptual station design, estimate costs, and update ridership information.



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## 4.0 Conclusion

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In the 1990s, there was a push in the Minneapolis-St. Paul area for commuter rail service, and MnDOT became the lead agency for commuter rail planning efforts. This resulted in early planning for a commuter rail network and led to the eventual creation of the Northstar Commuter Rail service. The Red Rock Corridor was included in this early planning work as another potential commuter rail corridor.

Meanwhile, high-speed rail was being considered for the greater Midwest region. The proposed network of high speed lines included a link between Chicago and St. Paul. An initial study assumed that this link would travel through Rochester, but given the potential synergies between high-speed rail investments and commuter rail investments, the high-speed rail service was soon assumed to be using the Red Rock Corridor.

In 2007, the Red Rock Corridor Alternatives Analysis was developed as an initial phase in attaining federal funding for future commuter rail service. This analysis concluded that commuter rail was appropriate for the long term, especially in the event that high speed rail was introduced into the corridor and provided a mechanism for reducing capital costs. The analysis recommended that commuter bus services be developed in the short-term to build transit demand.

The results of the alternatives analysis lead to the study of commuter bus services in the Corridor and station area planning work that assumed a long-term plan for commuter rail services. However, other regional planning work led by the Metropolitan Council, such as the 2008 Transit Master Study and the 2010 Park-and-Ride Study, appeared to be less confident that commuter rail was an appropriate investment for the corridor, viewing the potential ridership as too low and the potential costs as too high. Therefore, it seems that there is some uncertainty in the Region as to the future transit services in the Red Rock Corridor. The most recent Transportation Policy Plan identifies the Red Rock Corridor as being served by BRT, LRT, or commuter rail.

The document review suggests that the areas that need to be focused on for the Alternatives Analysis Update include:

- Verifying the costs for commuter rail in a situation in which high-speed rail is implemented in the Red Rock Corridor
- Verifying the costs of commuter rail in a situation in which high-speed rail is not implemented in the Red Rock Corridor
- Verifying that there are no alternative rights of way except TH 61 and the CP Rail Corridor for transit in the Red Rock Corridor (as assumption made in the AA)
- Exploring BRT / Express Bus concepts for the Red Rock Corridor that use bus-only shoulders and other transit “advantages” given work done since 2007 on TH 61 and elsewhere



- The condition of the existing infrastructure and congestion levels
- Verifying the travel demand that is serving as the basis for the ridership estimates given new census information, a new discussion of the proposed catchment areas, economic data, and the affirming of station locations
- Updating commuter rail costs and feasibility in light of the East Metro Commuter Rail Study
- Updating forecasts and cost estimates based on Northstar Commuter Rail service and planning work done to date on Cedar Avenue BRT
- Explore new federal requirements related to funding and safety
- Explore potential funding sources
- Updated information related to Union Depot
- Updated information from recent Comprehensive Plans