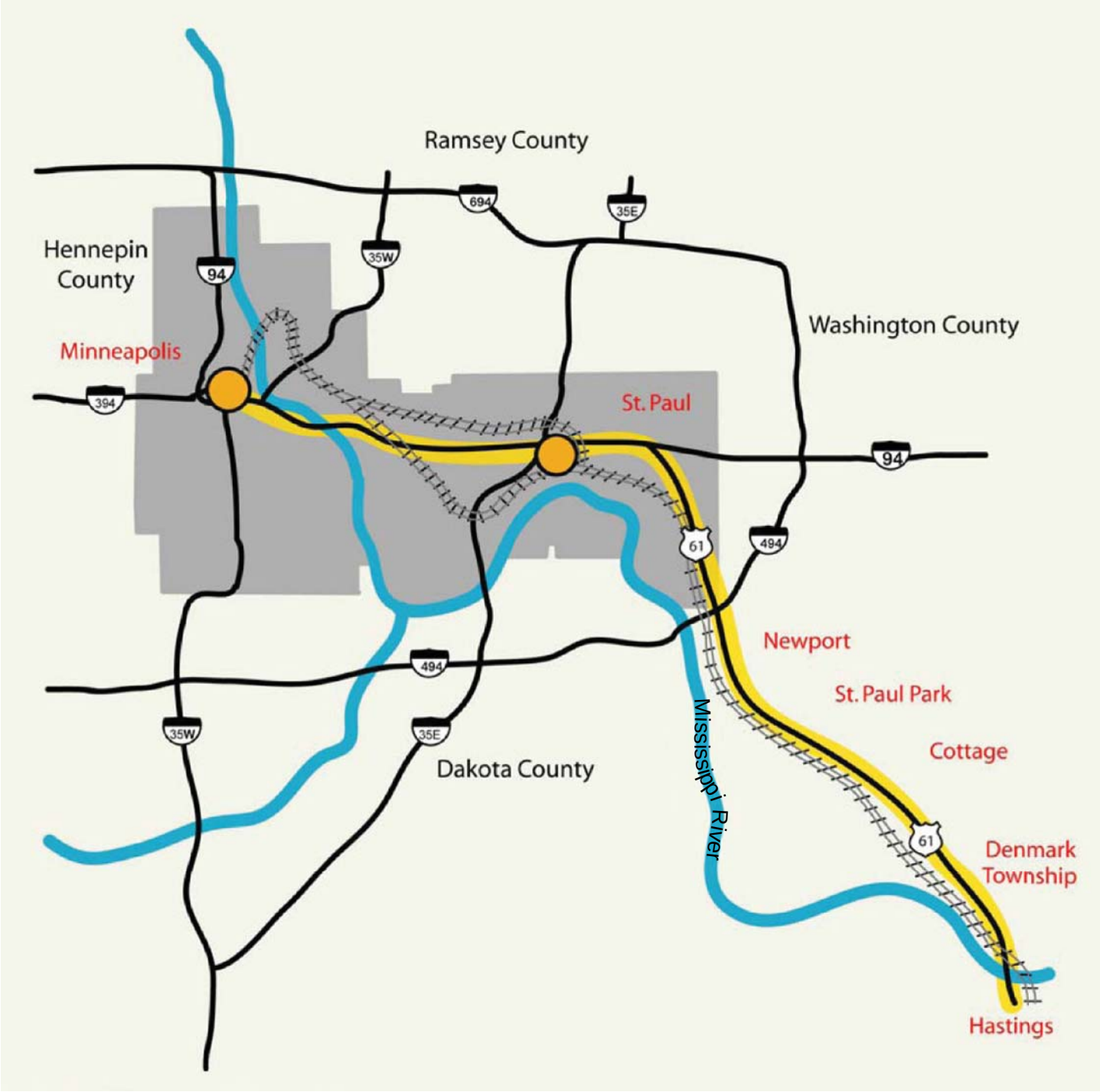
Figure 5-3: Trunk Hwy. 61 & I-94 Alignment



6.0 DESCRIPTION OF ALTERNATIVES EVALUATED

Graphics for Chapter 6.0 are included together at the end of this chapter.

Based on the initial and Phase II screening analysis, the technology and alignment alternatives identified for further evaluation were combined into several build alternatives. These build alternatives were subjected to more detailed quantitative analysis (ridership, capital costs and operational costs) to help identify a preferred alternative. For purposes of comparison, a No-Build Alternative was also developed. Each of the alternatives is described below.

6.1 No-Build Alternative

The No-Build Alternative is based on the Metropolitan Council's 2020 Plan. It consists of existing bus routes and also contains the following major projects: Northstar Commuter Rail, Central Corridor LRT, and Southwest Corridor LRT.

The No-Build Alternative has further been "enhanced" to include express bus service (Routes 361 and 365) that is proposed to be extended down to Hastings (currently service ends in Cottage Grove). Shoulder running bus operations would terminate at Lower Afton Road. Route 364 has been reconfigured to provide the local service provided by Route 361B. Thirty-minute peak period headways on the 361 and 365 were assumed to most closely compare to those in the proposed commuter rail service *(Note: The existing express bus service in the corridor operates at 20 to 30 minute peak period headways*).

6.2 Build Alternatives

Express Bus Alternative (Figures 6-1 and 6-2).

Three express bus service options were evaluated as part of the AA process to address the following questions:

- Will increasing the peak period bus service frequency on Routes 361 and 365 significantly increase the potential transit ridership? (Option 1)
- Will improving the bus travel speeds, by extending shoulder running service from Lower Afton Road to Hastings significantly increase the potential transit ridership? (Option 2)
- Will improving the travel time of the buses by a factor of approximately 20 percent corridor wide significantly improve the potential transit ridership? (Option 3)

Express Bus Option 1
Option 1 includes all the elements of the No-Build Alternative with 15 minute peak headways on Routes 361 and 365.

Express Bus Option 2
Option 2 includes all the elements of Option 1 with shoulder running on TH 61 extended from Lower Afton Road to Hastings.

Enhanced Bus Option 3
Option 3 includes all the elements of Option 2 with approximately a 20 percent corridor wide bus travel time improvement as a result of transportation improvements on TH 61.

Commuter Rail Alternative

Five commuter rail options were evaluated. From Hastings to St. Paul, each alignment would travel on CP rail alignment through Cottage Grove, then travel on joint BNSF/CP rail from Cottage Grove to the Union Depot. The St. Paul to Minneapolis portion would travel on CP or BNSF railway, depending on the option chosen. The reconfigured Route 364 remains in the build options to provide local service, however routes 361 and 365 in the peak periods would not be continued, as they would provide duplicative service as the commuter rail (assuming full system from Hastings to Minneapolis). The commuter rail options evaluated are summarized in **Table 6.1** and presented in **Figures 6-3** to **6-5**.

Under the commuter rail alternative, two sensitivity tests were run. The first evaluated the impact on ridership as a result of increasing commuter rail travel times by approximately 20 miles per hour from St. Paul to Minneapolis under Option 3 (Option 3 – Test). The second evaluated the impact to ridership if trains would run at 15 minute (Hastings to St. Paul) versus the assumed 30-minute frequencies during the peak periods (Option 5 – Test).

Table 6.1 – Stations and Alignments for Each Build Option

Proposed Station Location	Option 1 (Midway Sub - BNSF)- Limited Stations	Option 2 (Midway Sub - BNSF)	Option 3 (Merriam Park- CP)- Limited Stations	Option 4 (Merriam Park)- CP	Option 5 – St. Paul only
Hastings	✓	✓	✓	✓	✓
Cottage Grove	✓	✓	✓	✓	✓
Newport	✓	✓	✓	✓	✓
Lower Afton Road	✓	✓	✓	✓	✓
St. Paul	✓	✓	✓	✓	✓
Snelling (BNSF)		✓			
Snelling (CP)				✓	
University		✓		✓	
Minneapolis	✓	✓	✓	✓	

Source: LTK, *Analysis of Running Time*, *December 2006*

Commuter Rail Service Plan

The proposed commuter rail service concept is the basis for ridership forecasting, capital and operating cost estimates, and preliminary fleet sizing. The current service plan calls for a total of five trains sets heading north during the morning peak period and five train sets heading south during the evening peak periods. Reverse commute movements were not assumed in the service plan, but could be analyzed in future study phases as conditions warrant. Trains are assumed to be push-pull configured, with a 3,600 horsepower locomotive, with bi-level cars. Trains proposed to use the BNSF Midway Subdivision (Options 1 and 2) would experience a 10-minute dwell time at the Minnesota Union Depot while the crew switches ends of the train. Trains using the CP Merriam Park Subdivision (Options 3 and 4) would experience a two-minute dwell time at the Minnesota Union Depot, and continue in the same direction. Other station stops under each commuter rail option would have 45-second dwell times. Train route data,

including speeds, grades, curvature and track distances were generated from track charts of the CP and BNSF and topographic maps for the Minnesota Commercial Railway. Train speeds on the BSNF and CP tracks range from 15 miles per hour in the Minneapolis and St. Paul downtown areas to 70 miles per hour in sections of the track in Hastings, Cottage Grove, and near Lower Afton Road. A summary of the assumed speeds is included in **Appendix D.**

A running time analysis also was completed for each of the five commuter rail options. A summary of the travel times is presented in **Table 6.2.** A detailed summary of running times for each option is included in **Appendix D.**

Table 6.2 – Commuter Rail Running Times

Commuter Rail Option	West Bound Travel Time (Minutes)	East Bound Travel Time (Minutes)
Option 1 – BNSF Limited Stations	61	63
Option 2 – BNSF Full Stations	65	66
Options 3 – CP Limited Stations	55	55
Option 4 – CP Full Stations	58	58
Option 5 – Hastings to St. Paul	31	33

Note: Commuter rail running times reflect in-vehicle time only.

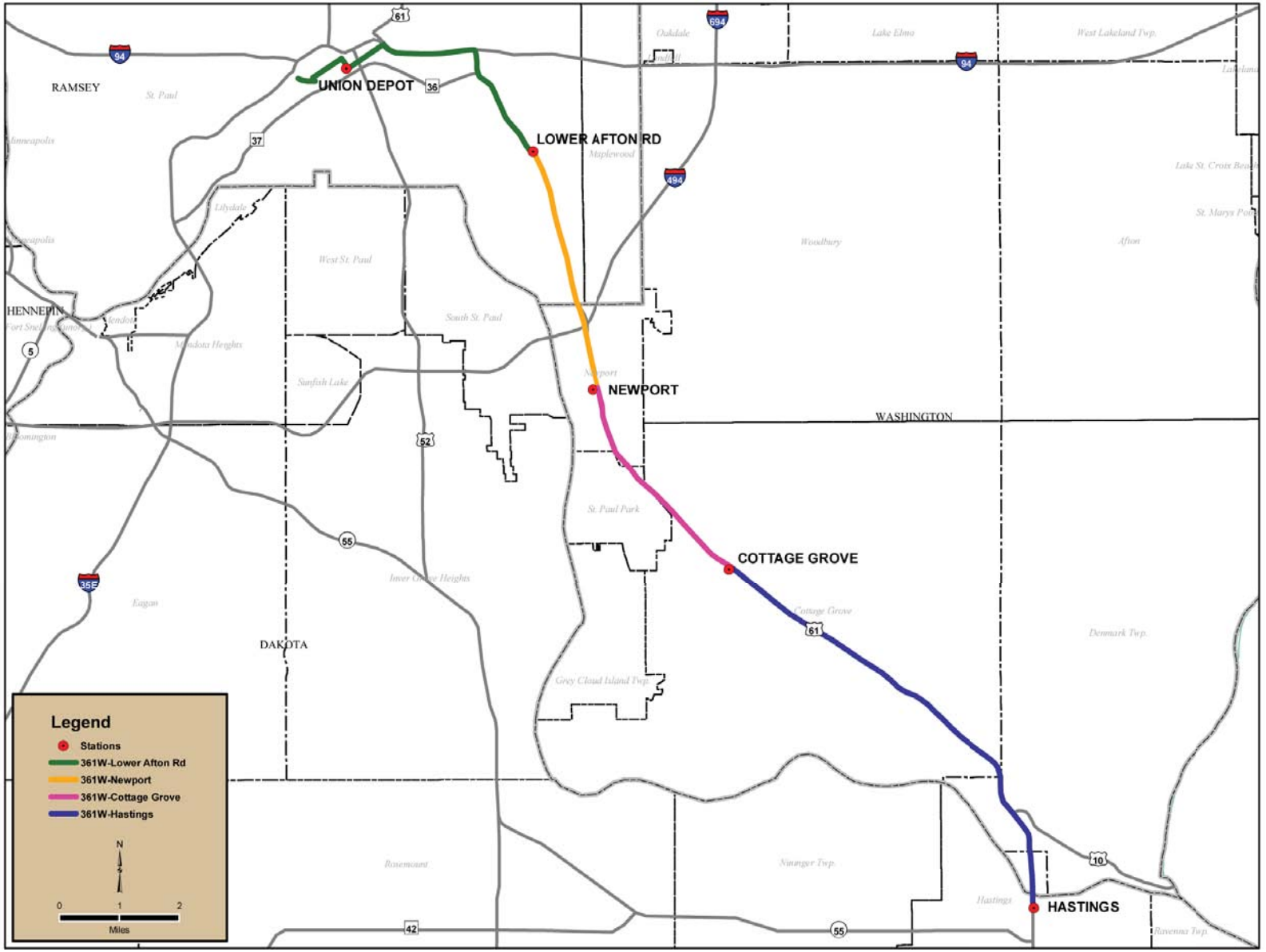
Preliminary train schedules also were prepared for each of the commuter rail options under evaluation and are included in **Appendix D.**

6.3 Minimum Operating Segment (MOS) Definition

Preliminary engineering is currently underway for Central Corridor, providing improved transit service between downtown St. Paul and downtown Minneapolis. Central Corridor LRT is anticipated to be operational by 2014. Based on the ridership forecasts and capital cost estimates developed for commuter rail options 1 through 4, it is most cost effective to define the first phase of commuter rail (minimum operating segment) from Hastings to the Minnesota Union Depot in downtown St. Paul (commuter rail option 5), with ultimate service to downtown Minneapolis in a subsequent phase. Red Rock users could continue service through to Minneapolis and other areas by transferring to Central Corridor LRT at the Minnesota Union Depot.

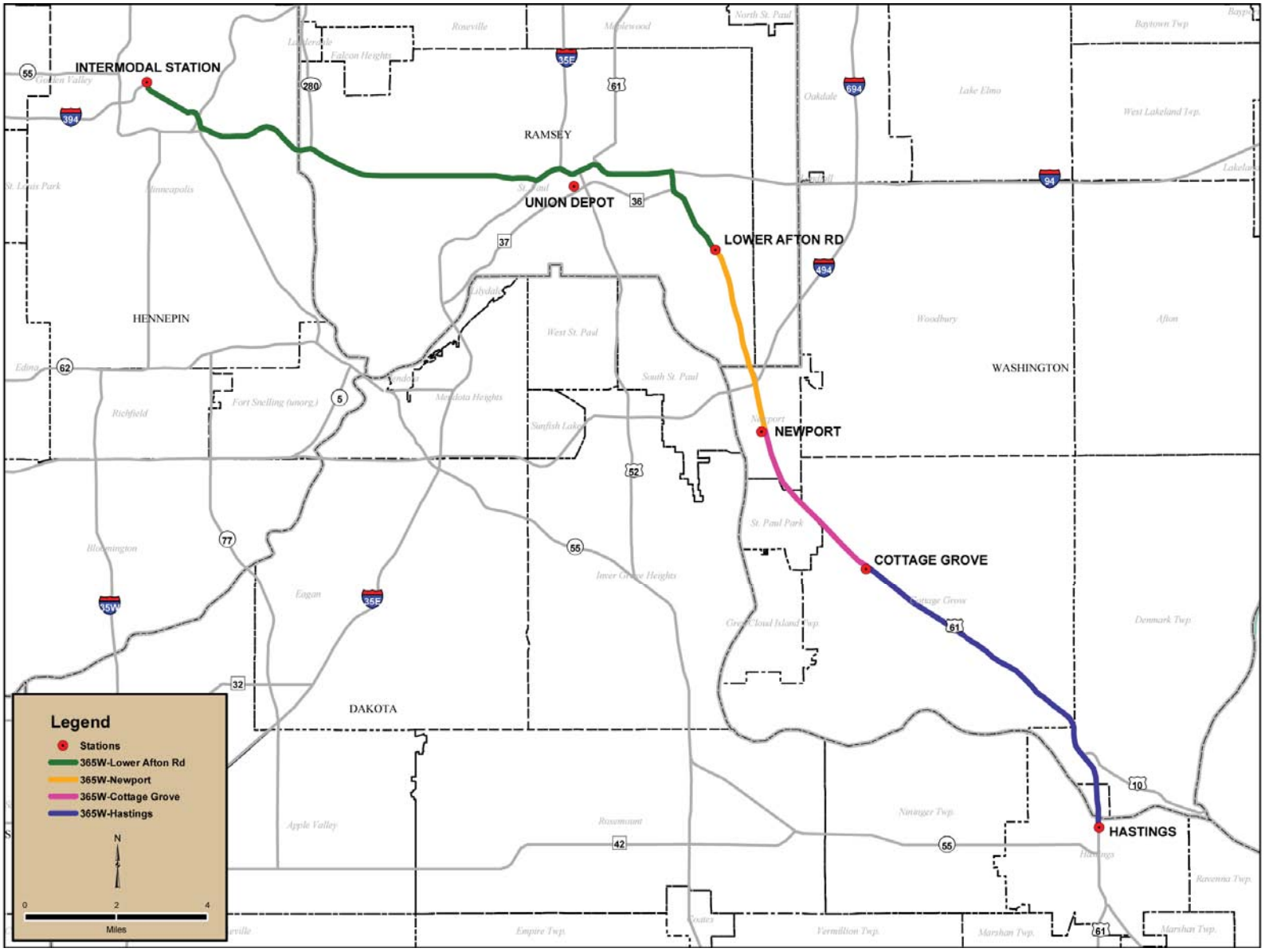
Figures 6-6 to **6-9** illustrate the general station locations and conceptual configurations in the Minimum Operating Segment from Hastings to St. Paul.

Figure 6-1: Bus Route 361



Kimley-Horn and Associates, Inc.

Figure 6-2: Bus Route 365



Kimley-Horn and Associates, Inc.

Figure 6-3: Commuter Rail Options 1 (BNSF) & 3 (CP)
Hastings to Minneapolis / Limited Stations

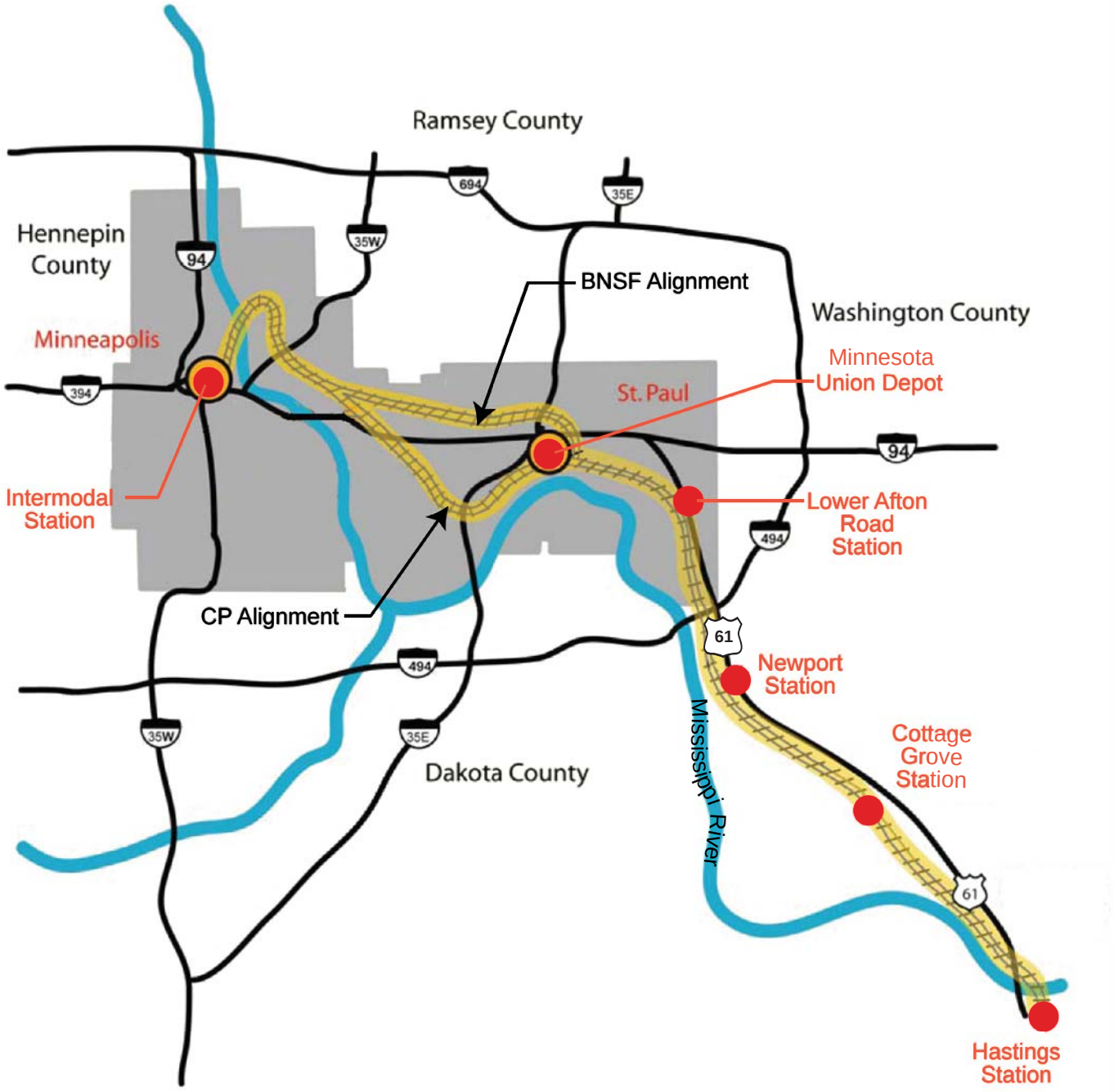
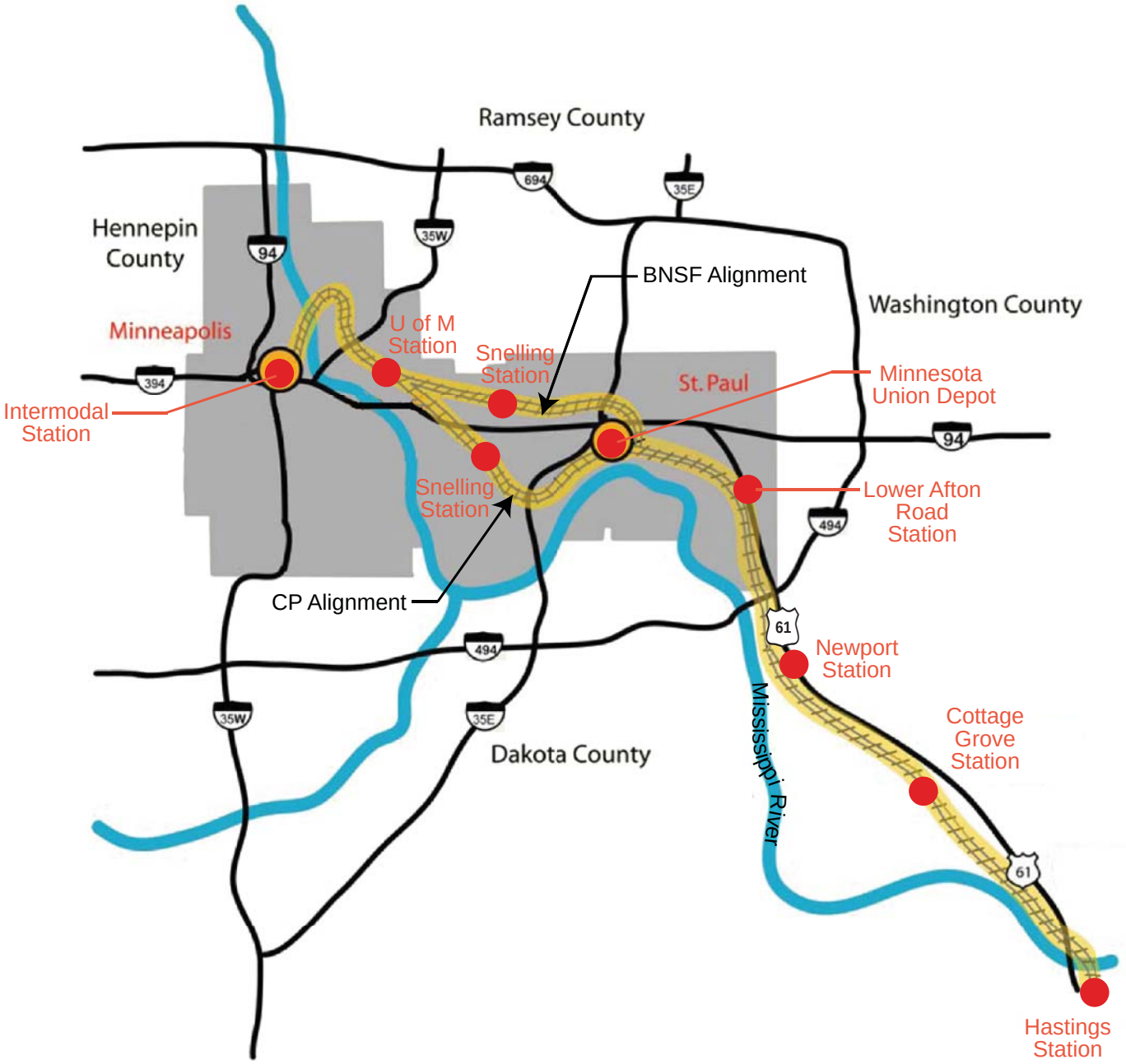


Figure 6-4: Commuter Rail Options 2 (BNSF) & 4 (CP) - Hastings to Minneapolis / Full Stations



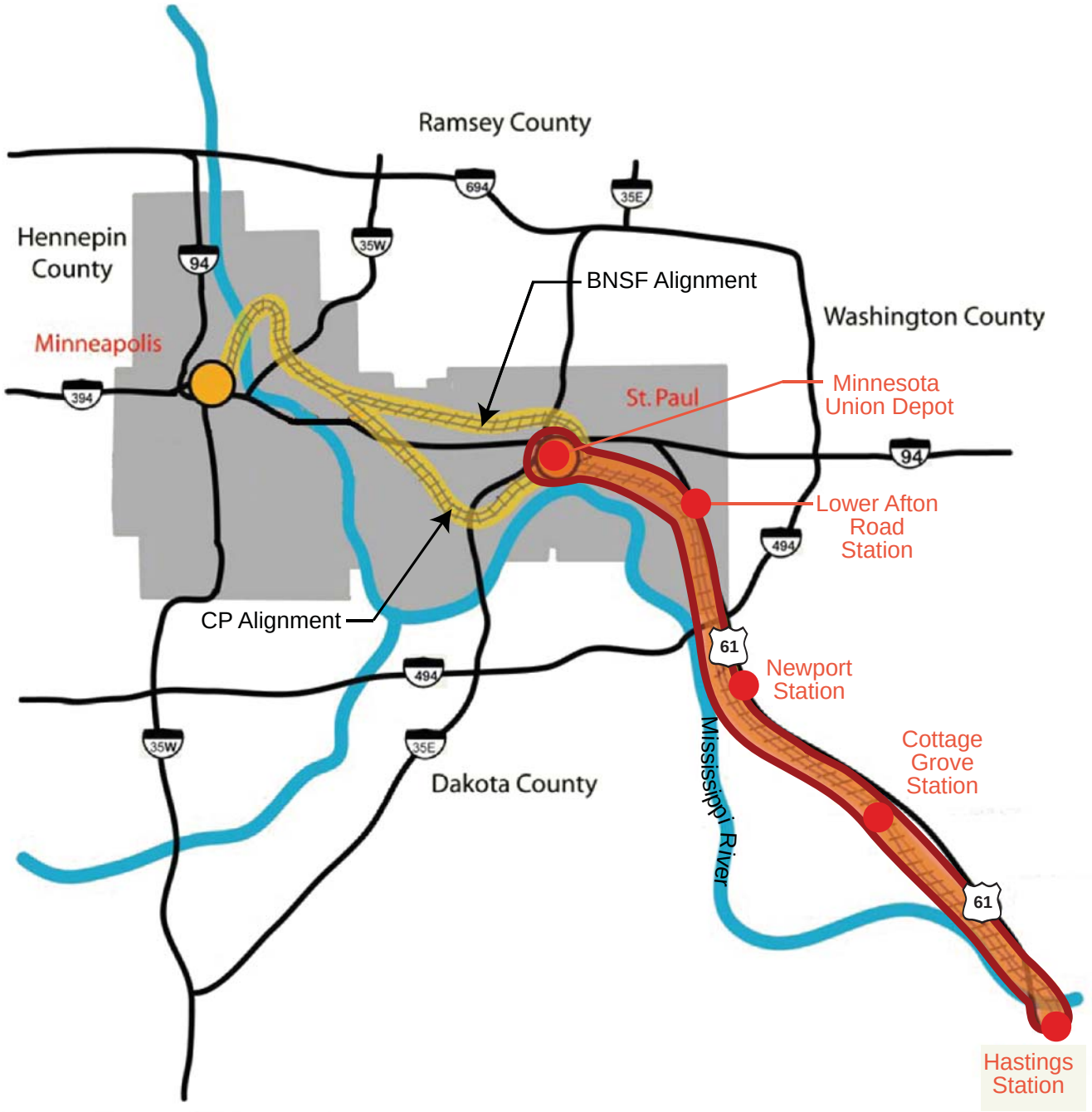

Ramsey County
Hennepin County
Washington County
Minneapolis
St. Paul
BNSF Alignment
CP Alignment
Minnesota Union Depot
Lower Afton Road Station
Newport Station
Cottage Grove Station
Hastings Station
Dakota County
Mississippi River
694
35E
35W
94
394
494
61

Figure 6-6: Hastings Station

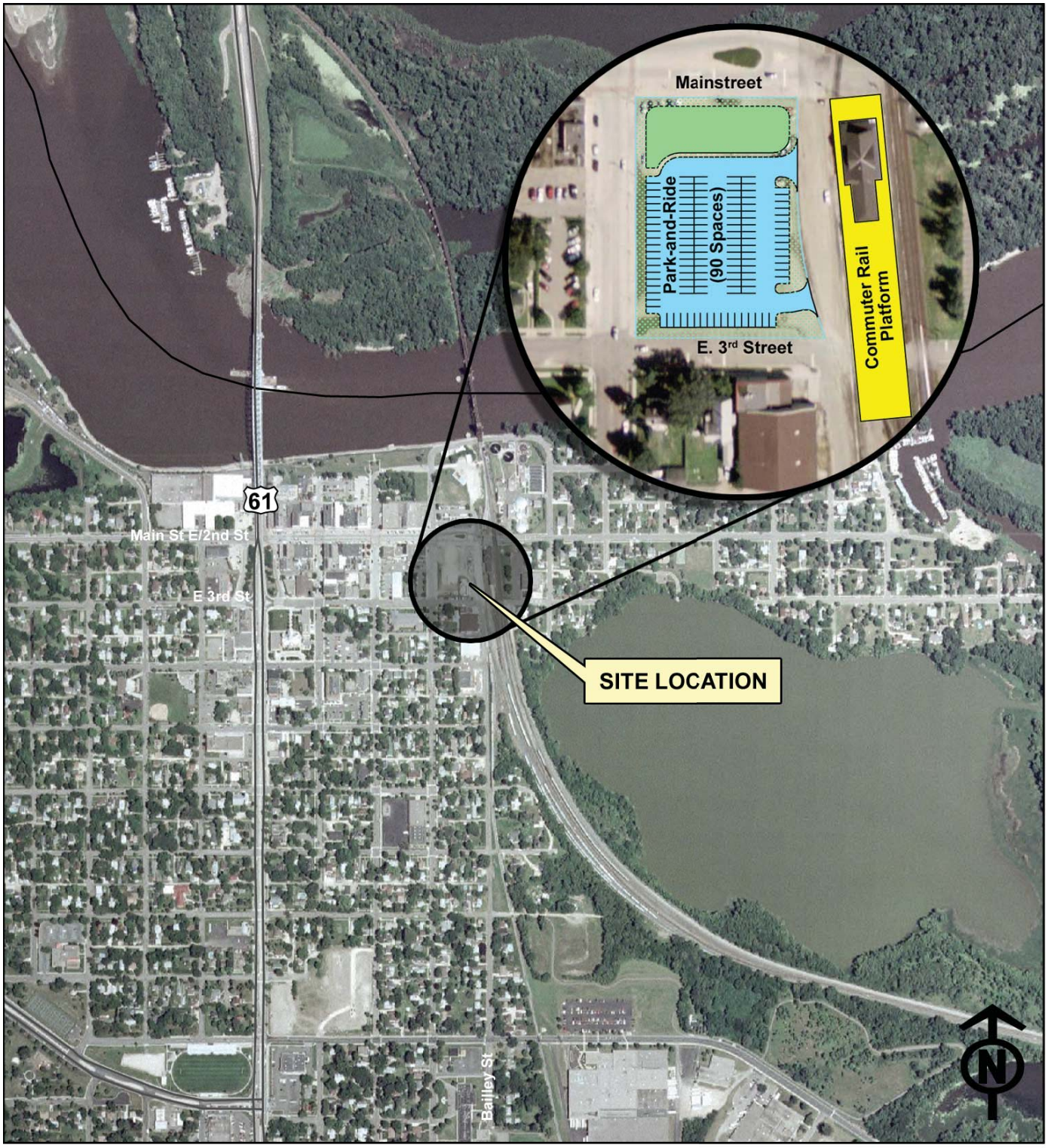


Figure 6-7: Cottage Grove Station

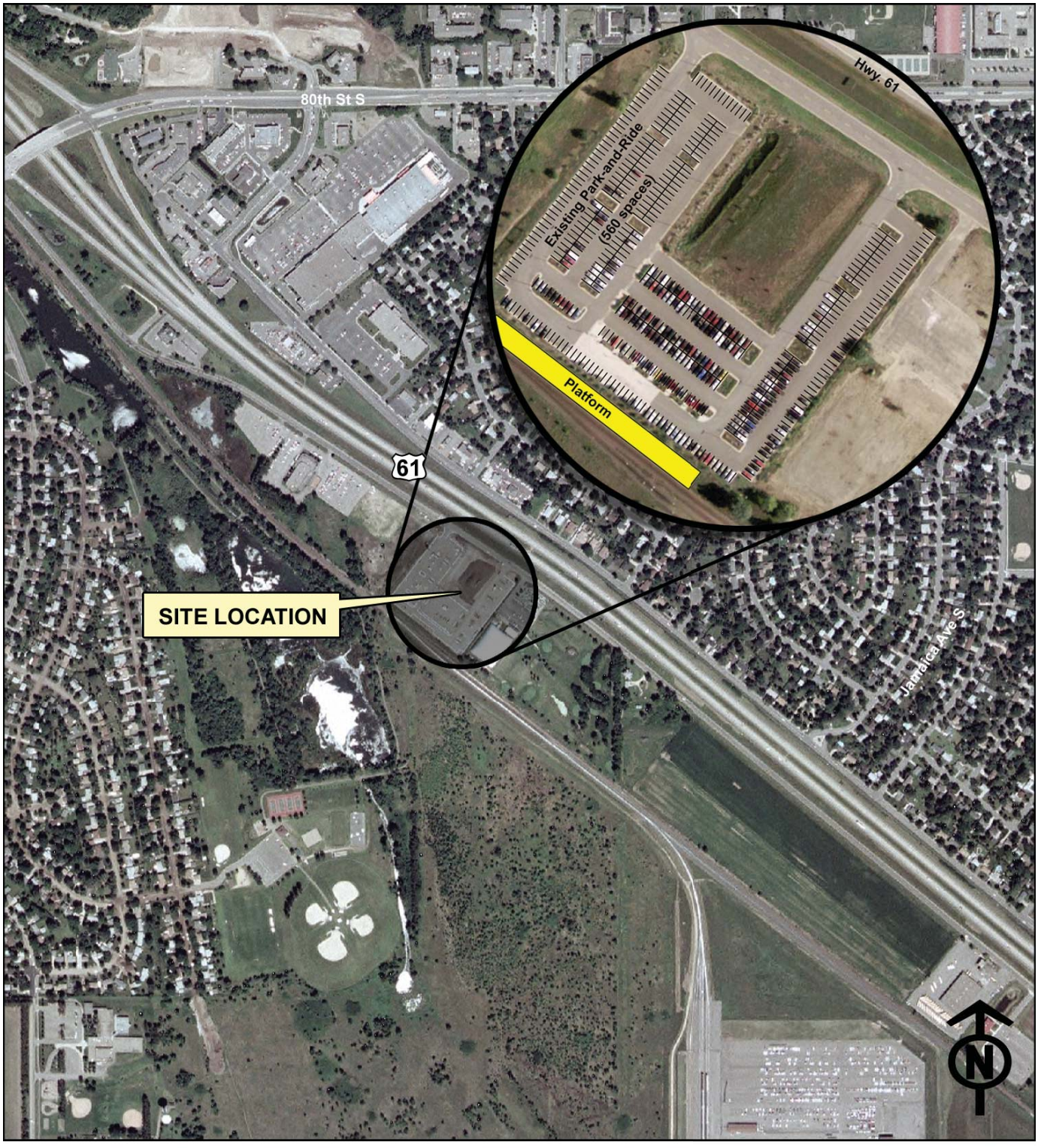


Figure 6-8: Newport Station

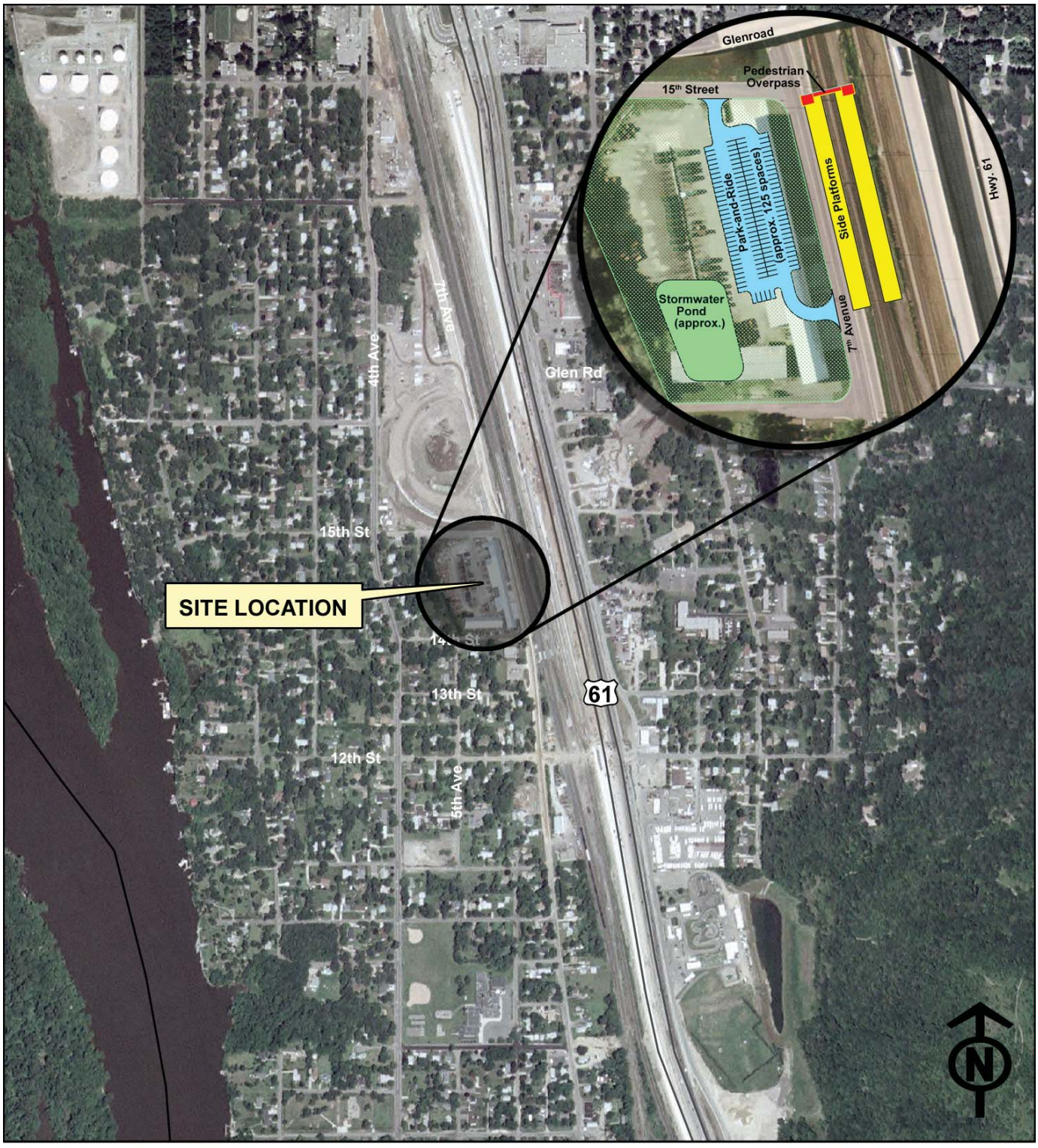
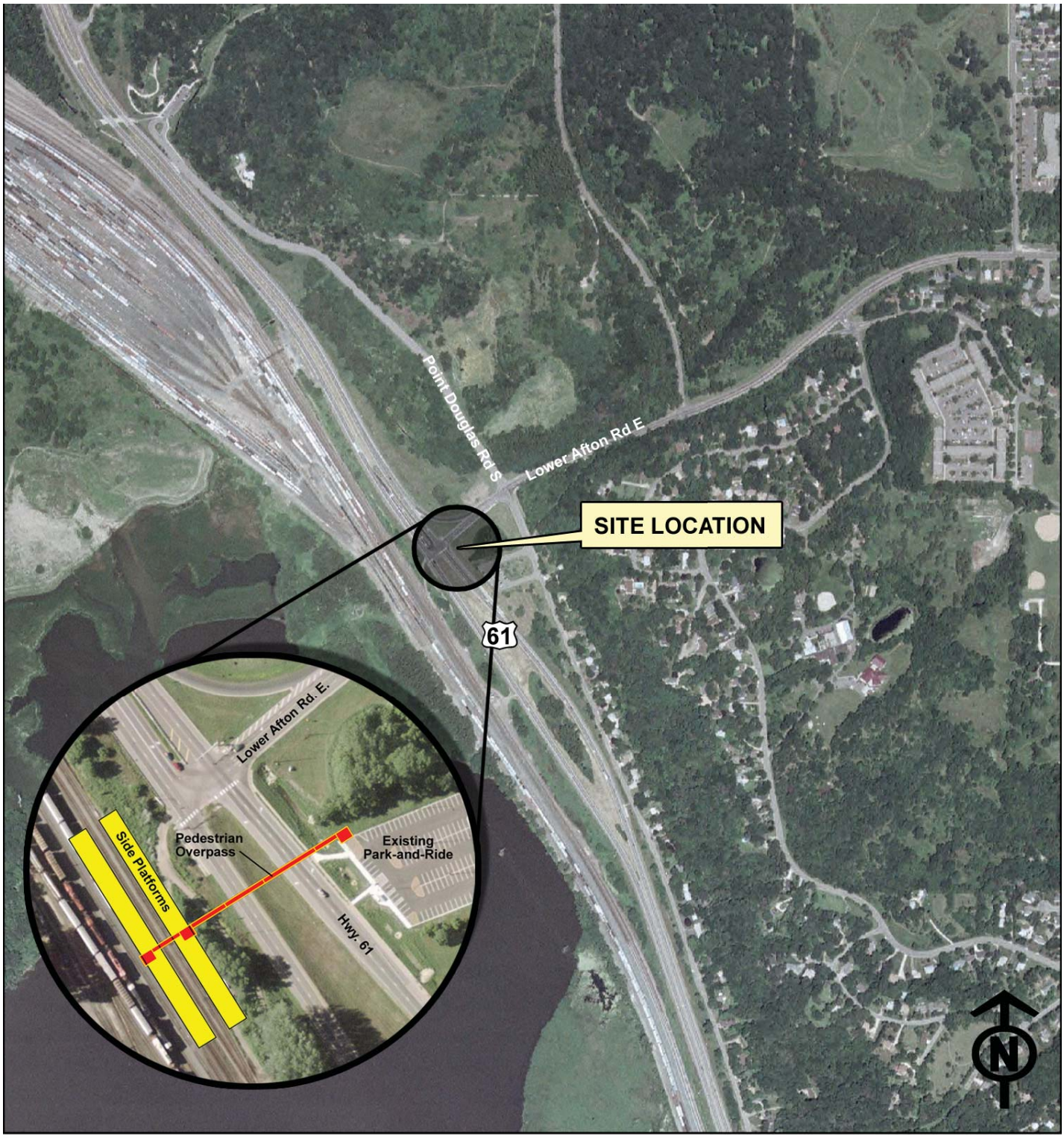


Figure 6-9: Lower Afton Road Station



7.0 PROJECT RIDERSHIP AND TRAVEL TIME ANALYSIS

Graphics for Chapter 7.0 are included together at the end of this chapter.

7.1 Previous Ridership Studies

Ridership forecasts for the Red Rock corridor were initially completed as part of the *Feasibility Study* published in 2001. A summary of this ridership analysis is presented below. For the *Feasibility Study*, ridership was forecast using the Twin Cities regional travel demand model approved at the time the *Feasibility Study* was completed (2001). One of the fundamental assumptions in the Red Rock forecast was that the Northstar commuter rail line would be operational by the time Red Rock begins revenue service for commuter rail. The forecast was prepared for a 2020 time horizon. Characteristics of the commuter rail ridership (home-based work trips only) forecast included:

- Daily ridership along the Red Rock/Central Corridor (*note: Central Corridor defined as commuter rail service between St. Paul and Minneapolis at this time in the analysis*) is estimated at 5,885 riders in 2020. About 3,560 (60 percent) of that ridership is attributable to the Red Rock portion (either origin or destination at Hastings, Cottage Grove, Newport, or Lower Afton Road).
- Transfer trips to/from Northstar represent about 15 percent of daily total ridership.
- Reverse commute trips account for about 22 percent of the commuter rail ridership. Red Rock's contribution to reverse commute trips is negligible (0.5 percent).
- Among passengers boarding commuter rail between Hastings and Lower Afton Road, the Depot is the most popular destination station.

The ridership analysis included some special considerations that factored into the ridership forecast for the Red Rock Corridor. Since 2001, when the feasibility study was completed, several of these considerations have changed or no longer reflect current conditions. These changes result in potential implications to the ridership numbers that were generated in 2001. The following summarizes the special considerations taken into account during the feasibility study and the change in these considerations since 2001.

2001 Considerations	Changes since 2001
Transportation network included projects committed through 2020. Transit projects included Hiawatha LRT, Riverview BRT, Northstar Commuter Rail, and Central Corridor Commuter Rail (on BNSF South alignment)	• Riverview BRT is no longer being studied. • The preferred alternative for Central Corridor is now light rail transit, not commuter rail. The current model assumes that Northstar Commuter Rail, Central Corridor LRT and Southwest LRT are in the network. Hence, there is a high transfer rate at the Minnesota Union Depot to Central LRT
The travel demand model used in 2001 was calibrated to 1990 conditions, which has a 50 percent observed mode share for work trips to downtown Minneapolis and St. Paul	• Current model is calibrated to 2000-2001 conditions, which has a 30 percent observed mode share to downtown Minneapolis and 15-20 percent mode share to downtown St. Paul
Travel demand model assumed an unsubstantiated rail bias	• Current model uses an off-peak rail bias based on Hiawatha LRT ridership
A timed transfer was provided between the Central and Northstar lines at the Northeast Minneapolis station	• There is no longer a Northeast station associated with Northstar Corridor
A proposed station at Rice Street was included in the ridership forecasts	• The station at Rice Street was removed from the analysis.

To accommodate these changes and better reflect the function of the Red Rock Corridor, additional ridership analysis was conducted and is described below.

7.2 Ridership and Travel Time Methodology

This section documents the following travel demand forecasting activities:

- Market analysis and corridor validation efforts with refinements to the Metropolitan Council (Met Council) travel demand model
- Service planning and other assumptions

Market Summary and Corridor Validation

The Minneapolis and St. Paul Central Business Districts (CBDs) are the main focus of the market analysis, as they would be the primary destination for commuters either on existing bus service, improved bus service, or a proposed commuter rail line.

Figure 7-1 shows the study districts used in the final corridor validation. These districts were originally defined by the project team and expanded to include areas identified in Met Council's On Board and Park-and-Ride surveys as potential transit market areas. Comparisons were made for each expanded corridor district to the Minneapolis CBD and the St. Paul CBD. **Appendix E** presents trip comparisons for 2000, 2005, and the 2030 Enhanced No Build, including average weekday work person trips; average weekday non-work person trips; and average weekday total person trips. Only the relevant districts from a commuting perspective are summarized (Hastings, Cottage Grove, Woodbury, Newport, St. Paul Park, and Other Corridor - Core and Ring Counties). The "Other Minneapolis" and "Other St. Paul" districts would likely use other non-Red Rock transit services to access each CBD (e.g., Metro Transit Routes 16, 50, 94, and in the future the proposed Central Corridor LRT).

The Metro Transit 2005 On Board Survey presented an opportunity to measure the model's performance in simulating transit trips in the Red Rock Corridor. **Figure 7-2** shows origins (and CBD destinations) for the records from the survey for Routes 361, 364, and 365. A survey tabulation and comparison for corridor trips to either CBD is presented in **Table 7.1**.

Table 7.1 – 2005 Average Weekday Observed vs. Modeled CBD-Bound Transit Trips

Red Rock Corridor(1) to	Survey	Modeled	Percent Difference
Minneapolis CBD	220	290	28%
St Paul CBD	240	200	-13%
Both CBDs	460	490	6%

(1) Hastings, Cottage Grove, Woodbury, Newport, St. Paul Park, and Other Corridor

The model slightly overpredicts transit trips to Minneapolis CBD and slightly underpredicts trips to the St. Paul CBD. The percentages overstate the differences given the overall magnitude of travel. Table 14 shows a route level comparison for the peak period (AM and PM).

Table 7.2 – 2005 Average Weekday Peak Period Observed vs. Modeled Route Boardings

Route	Observed	Modeled	Percent Difference
361	250	250	-2.4%
364	50	150	196.1%
365	340	300	-15.0%
Total	**640**	**700**	**6.7%**

Note: The percent difference for Route 361 is based on the observed ridership of 252 and the modeled ridership of 246. The ridership reflected in the table has been rounded.

The Metropolitan Council model, with minor adjustments, appears to reasonably replicate travel in the corridor to each downtown. Using this information, average weekday 2030 forecast results were prepared for the No-Build, express bus, and commuter rail alternatives. There are three bus alternatives, and five commuter rail alternatives with stations and alignments as summarized in Section 6.0. Each commuter rail alternative assumes five trains in the morning and evening peak periods except for the Rail Option 5 sensitivity test run, which assumes a 15-minute peak headway. The reconfigured Route 364 remains in the build options to provide local service. For this analysis, Hastings, Cottage Grove, Newport, and Lower Afton Road are assumed to be park-and-ride facilities with unconstrained parking.

7.3 Travel Time Analysis Results

Since the proposed bus alternatives and commuter rail alternatives would only operate in the AM and PM peaks, forecast results are presented only for the peak period. The headways for the corridor routes are presented in **Table 7.3** for each of the build alternatives. The modeled running times for each of the bus alternatives are summarized in **Table 7.4** and modeled running times for rail alternatives are summarized in **Table 7.5** with the rail running times from Hastings shown. "Rail Option 3 Test" is a sensitivity test where the rail running time between the Minnesota Union Depot and the Multimodal Terminal in downtown Minneapolis is 20 miles per hour (mph) faster than in the regular Option 3 alternative. The base year (2005) scheduled and modeled headways and running times are presented for comparison in these exhibits. For comparison, **Table 7.6** shows peak period modeled highway times corresponding to Routes 361 and 365.

Table 7.3 – Corridor Headways (Minutes in Peak Period)

Route	2005 Schedule	2005 Modeled	2030	
			No-Build	Build
Bus Alternatives				
361	40	36	30	15
364	30	36	40	40
365	40	36	30	15
Commuter Rail Alternatives				
361	40	36	30	-
364	40	36	40	40
365	40	36	30	-
Rail (except Option 5 Test)	-	-	-	30
Rail Option 5 Test				15

Note: The base year of 2005 was used for this analysis. Since 2005, the frequency of bus service has changed somewhat (15 to 30 minute frequencies) during the peak travel periods.

Table 7.4 – Bus Alternatives: Peak Period Peak Direction Corridor Running Times (Minutes)

Route	2005 Actual	2005 Modeled	2030			
			Enhanced No Build	Bus Option 1	Bus Option 2	Bus Option 3
361 (Hastings)	-	-	90	90	67	59
361 (Cottage Grove)	30	34	57	57	47	43
364	41	44	73	73	66	63
365 (Hastings)	-	-	99	99	75	68
365 (Cottage Grove)	50	53	63	63	55	52

Note: Modeled running times are based on the regional model, which takes into account congestion on designated roadways. Actual running times may vary.

Table 7.5 – Commuter Rail Alternatives: Peak Period Peak Direction Corridor Running Times (Minutes)

Route	2005 Actual	2005 Modeled	2030	
			Enhanced No-Build	Build
361 (Hastings)	-	-	90	-
361 (Cottage Grove)	30	34	57	-
364	41	44	73	73
365 (Hastings)	-	-	99	-
365 (Cottage Grove)	50	53	63	-
Rail Option 1	-	-	-	61
Rail Option 2	-	-	-	64
Rail Option 3	-	-	-	55
Rail Option 3 Test	-	-	-	43
Rail Option 4	-	-	-	58
Rail Option 5	-	-	-	30

Note: Commuter rail running times reflect in-vehicle travel time only from the Hastings station to the Downtown Minneapolis Intermodal Station (Rail Options 1 through 4) and Hastings to the Minnesota Union Depot for Rail Option 5.

Table 7.6 – Peak Period Peak Direction Modeled Highway Times (Minutes)

Route	2005	2030
Hastings to St Paul	47	62
Cottage Grove to St Paul	35	42
Hastings to Minneapolis	66	82
Cottage Grove to Minneapolis	54	62

7.4 Ridership Analysis Results

Bus Alternatives

Average weekday 2030 forecast results were prepared for the each of the alternatives described in the preceding section. Tables in **Appendix E** show work, non-work, and total person and transit travel to each downtown. It is important to remember that these exhibits show transit trips *only* to each downtown. These exhibits do not show trips to other parts of the region or trips that begin outside the district definition.

Tables 7-7 and 7-8 show route and station boardings for more of a "total" picture for each proposed bus alternative. **Table 7-7** shows average weekday boardings for year 2005 (observed and modeled) and each 2030 alternative (No-Build and each bus option). The Enhanced No-Build Alternative reflects 30-minute peak period frequencies, similar to the proposed commuter rail service. Routes 361 and 365 currently operate at frequencies between 15 and 30 minutes in the peak periods. **Table 7-8** shows average weekday station boardings for each bus option for Routes 361 and 365.

Table 7.7 – Peak Period Average Weekday Corridor Boardings

Route	2005 Actual	2005 Modeled	2030			
			No-Build	Bus Option 1	Bus Option 2	Bus Option 3
361	250	240	260	860	1,180	1,310
364	50	150	290	250	280	300
365	340	290	330	1,060	1,460	1,630
Total	**640**	**680**	**880**	**2,170**	**2,920**	**3,240**

Table 7.8 – Peak Period Year 2030 Average Weekday Station Boardings for Routes 361 and 365

Stations	Enhanced No-Build	Bus Option 1	Bus Option 2	Bus Option 3
Hastings	35	55	130	180
Cottage Grove	150	270	355	380
Newport	95	360	460	490
Lower Afton Road	20	280	380	420
Downtown St. Paul	130	425	590	655
Downtown Minneapolis	165	525	730	815
Total	**595**	**1,915**	**2,645**	**2,940**

Note: Totals presented in Table 7.8 reflect totals for Routes 361 and 365 only (Table 7.7 includes boardings for Route 364 too). Boarding numbers have been rounded.

Table 7.9 summarizes the 2030 average weekday benefits of each bus option over the Enhanced No-Build alternative. Change in corridor boardings, new riders, travel time savings, and travel time savings per rider are presented. These estimates are preliminary because they are compared against the No-Build alternative and not a formal baseline alternative that has been presented to the Federal Transit Administration (FTA) in the context of a Section 5309 New Starts submission.

Table 7.9 – Year 2030 Average Weekday Build Option Impacts over Enhanced No-Build

	Bus Option 1 vs. No Build	Bus Option 2 vs. No-Build	Bus Option 3 vs. No-Build
Change in Corridor Boardings	1,280	2,040	2,350
Change in Transit Linked Trips (New Riders)	370	750	930
Travel time savings (hours)	308	635	786
Travel time savings per boarding (minutes)	8.5	13.0	14.6

Commuter Rail Alternatives

Draft average weekday 2030 forecast results have been prepared for the each of the commuter rail options. **Appendix E** shows work, non-work, and total person and transit travel to each CBD. It is important to remember that these exhibits show transit trips *only* to each downtown. These exhibits do not show trips to other parts of the region or trips that begin outside the district definition in **Figure 7-1. Tables 7-10 and 7-11** show route boardings of more of a "total" picture for each proposed alternative. **Table 7-10** shows average weekday boardings for year 2005 (observed and modeled) and each 2030 alternative (Enhanced No-Build and each Build option). **Table 7-11** shows average weekday station boardings for each build option. **Table 7-12** shows transfers at the Minnesota Union Depot and the Intermodal Station in downtown Minneapolis.

Table 7.10 – Peak Period Average Weekday Corridor Boardings

Route	2005 Observed	2005 Modeled	2030							
			Enhanced No-Build	Option 1	Option 2	Option 3	Option3 Test	Option 4	Option 5	Option 5 Test
361	250	250	260[1]				-	-	-	-
364	50	150	290	265	265	260	240	265	265	155
365	340	290	330[1]					-	-	-
Commuter Rail	-	-	-	1,570	1,615	1,630	1,845	1,615	1,550	2,930
Total	640	690	880	1,835	1,880	1,890	2,085	1,880	1,815	3,085

[1]Reflects thirty-minute peak period headways on the 361 and 365 to most closely compare to proposed commuter rail service. The existing express bus service in the corridor operates at 20 to 30 minute peak period headways.

Table 7.11 – Peak Period Year 2030 Average Weekday Station Boarding

Station Name	Option 1	Option 2	Option 3	Option 3 Test	Option 4	Option 5	Option 5 Test
Hastings	175	175	180	195	175	170	250
Cottage Grove	390	390	400	435	395	390	625
Newport	215	215	225	260	210	210	400
Lower Afton Road	20	20	20	45	25	20	200
Union Depot	675	695	550	430	615	770	1450
Snelling CP	-		-	-	10		
Snelling BNSF	-	30	-	-			
University Campus	-	15	-	-	15		
Intermodal Station	105	80	260	490	160		
Total	**1,580**	**1,620**	**1,635**	**1,855**	**1,605**	**1,560**	**2,925**

Table 7.12 – Peak Period Year 2030
Average Weekday Transfers at Minnesota Union Depot and the Intermodal Terminal

		Option 1	Option 2	Option 3	Option 3 Test	Option 4	Option 5	Option 5 Test
Union Depot	LRT	360	355	345	235	355	360	685
	walk or bus	315	340	205	190	260	410	770
Intermodal Terminal	LRT	100	75	240	460	150	-	-
	walk or bus	10	5	15	30	10	-	-

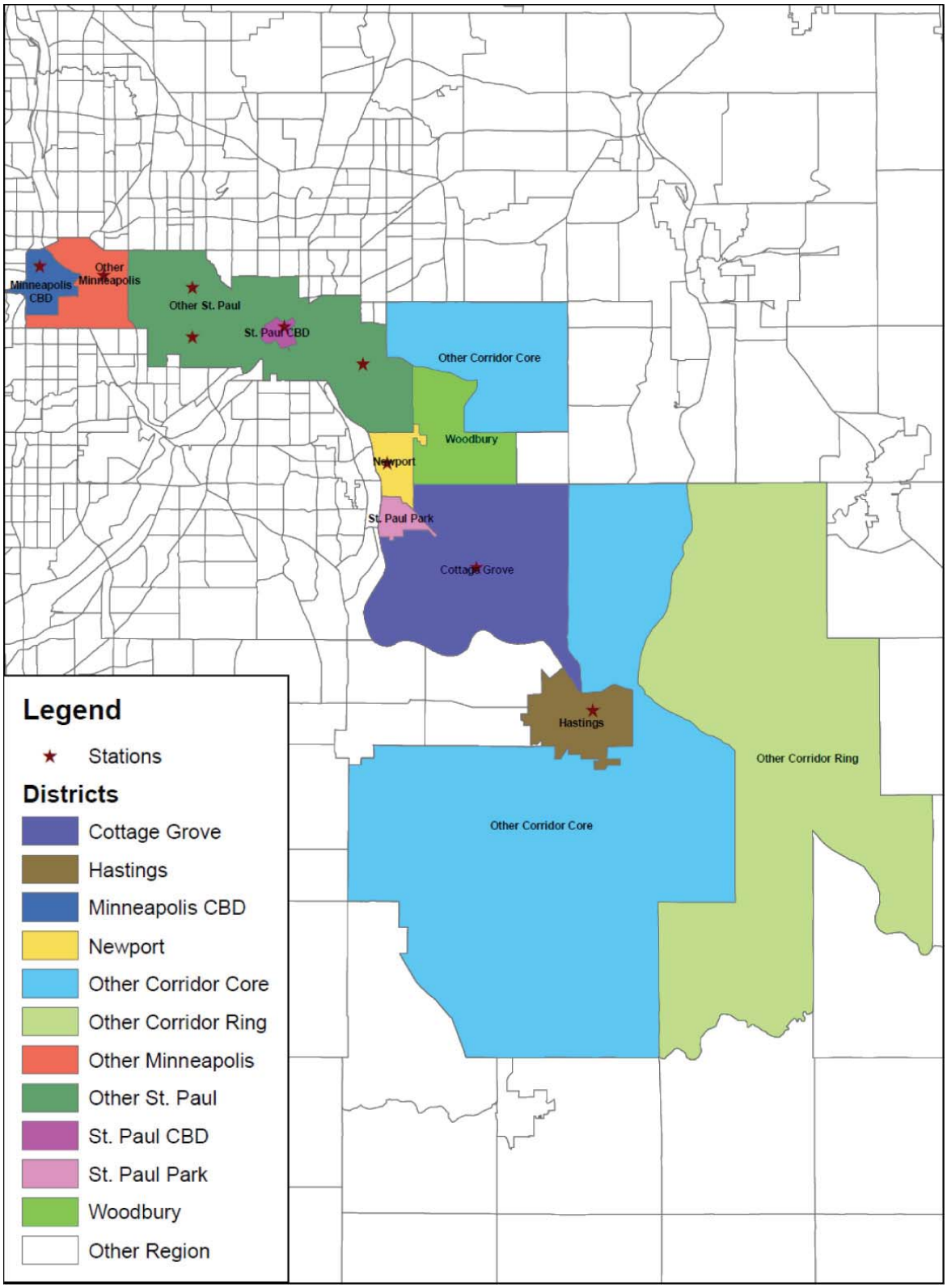
Table 7.13 summarizes the 2030 average weekday benefits of each commuter rail build option over the Enhanced No-Build alternative. Change in corridor boardings, new riders, travel time savings, and travel time savings per rider are presented. As presented in the table, the average weekday ridership would increase by approximately 935 riders under the commuter rail segment from Hastings to St. Paul (Option 5), and by approximately 1,000 riders for the full system from Hastings to Minneapolis (Options 1-4). An average travel time savings of approximately 17 minutes per rider is predicted for the commuter rail build options over the Enhanced No-Build. These estimates are preliminary because they are compared against the No-Build alternative and not a formal baseline alternative that has been presented to the Federal Transit Administration (FTA) in the context of a Section 5309 New Starts submission. The Option 5 Test showed that increasing the service frequency of the commuter trains from 30 minutes to 15 minutes would result in a doubling of net ridership over the No-Build Alternative. It is important to note that an Option 5 Test to the No-Build alternative would not likely be valid in an FTA context. Additionally, the Option 3 Test, which evaluated the impact of increasing travel speed by approximately 20 miles per hour from St. Paul to Minneapolis yielded an net increase of approximately 105 riders (as compared to Option 3).

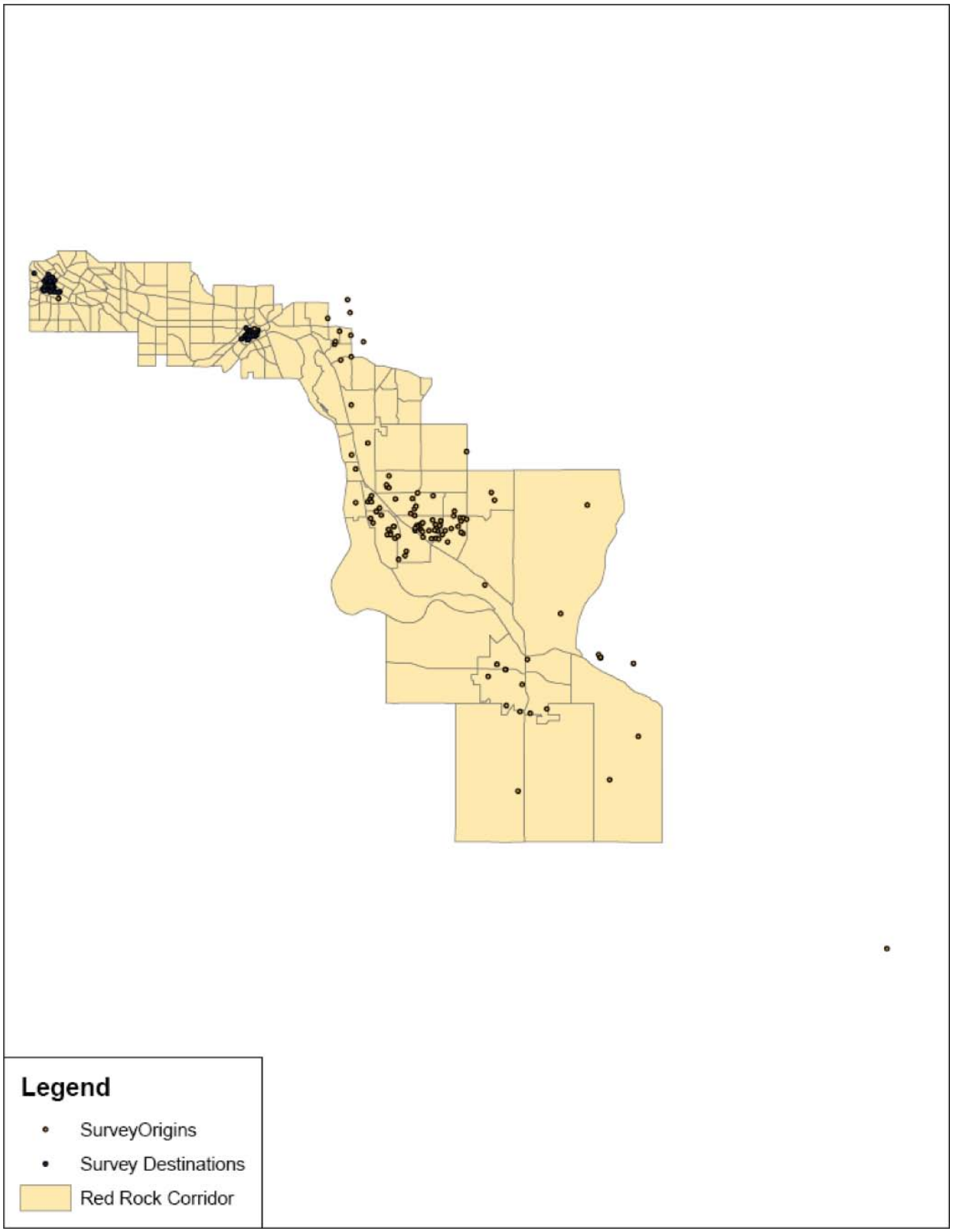
Table 7.13 – Year 2030 Average Weekday Build Option Impacts Over No-Build

	Option 1	Option 2	Option 3	Option 3 Test	Option 4	Option 5	Option 5 Test
Change in Corridor Boardings	955	1,000	1,010	1,205	1,000	935	2,205
Change in Transit-Linked Trips (New Riders)	595	610	625	725	610	590	1,330
Travel Time Savings Estimate (hours)	441	456	464	566	456	434	994
Travel Time Savings per Rider (minutes)	16.8	17.0	17.1	18.4	17.0	16.8	20.4

Note: The Option 3 test reflects an approximate 20 mile per hour travel time improvement assumption from St. Paul to Minneapolis. The Option 5 test reflects a 15-minute commuter rail frequency test during the peak periods.

Figure 7-1: Red Rock Alternatives Analysis Study Districts for Validation




Legend
SurveyOrigins
Survey Destinations
Red Rock Corridor

8.0 ESTIMATED CAPITAL COSTS

Graphics for Chapter 8.0 are included together at the end of this chapter.

8.1 Capital Cost Methodology

For the Hastings to St. Paul portion of the Red Rock Corridor, two different technical memorandums were used for reference in preparing the capital cost estimate for the commuter rail alternative. Both memorandums were prepared as part of the *Red Rock Corridor Commuter Rail Feasibility Study* prepared in 2001. Technical Memorandum #3, *Railroad Capacity Modeling and Proposed Infrastructure Improvements*, identified the capacity upgrades that would be required in order to maintain equal or somewhat better freight capacity and operating performance capabilities by the operating railroad. Technical Memorandum #4, *Estimate of Engineering and Capital Costs*, included preliminary cost estimates that were prepared for the project during the feasibility study, including preliminary cost estimates for capacity upgrades, maintenance/operations facility, and storage track improvements. Both of these memorandums, as well as current information from the Northstar Commuter Rail project were used in developing commuter rail capital costs. Preliminary cost summaries were prepared for the proposed maintenance/operations facility, railroad capacity and storage track improvements, Hoffman Junction/St. Paul Union Depot improvements, commuter rail trains and commuter rail stations.

For the downtown St. Paul to downtown Minneapolis portion, capital cost estimates were prepared based on capacity upgrades that were included in the *Central Corridor Commuter Rail Technical Feasibility Study* prepared for the Ramsey County Regional Railroad Authority in December 2001. The feasibility study included capacity upgrades for both the BNSF Midway Route (Commuter Rail Options 1 and 2) and CP Merriam Park Route (Commuter Rail Options 3 and 4).

Detailed project cost backup data including a complete list of upgrades is provided in **Appendix F.**

8.2 Commuter Rail Capital Cost Estimates

The capital cost estimates are organized into the following categories:

- Maintenance/Operations Facility
- Capacity Upgrades
- Hoffman Junction/Minnesota Union Depot
- Rolling Stock
- Storage Track Improvements
- Commuter Rail Stations

Maintenance and Operations Facility

The Red Rock Corridor maintenance and operation facility cost estimates are based on the current information from the construction costs associated with the Northstar Commuter Rail maintenance facility that is planned to be built in Big Lake, MN. The assumption in the Red Rock cost estimate is that the maintenance facility required for the Red Rock Corridor would be similar in size, or slightly smaller, than the maintenance facility that will be built as part of the Northstar Commuter Rail project. More specifically, the maintenance facility for the Northstar project requires 38 acres of property, with right-of-way acquisition costs at $55,000 per acre (Big Lake).

For Red Rock, it is assumed that approximately 38 acres would be required, at right-of-way costs estimated at $70,000 per acre to reflect the more urbanized location of a maintenance facility. The actual size of the maintenance facility would be 50,000 square feet, with a 9,000-square-foot train wash. Costs for the Red Rock maintenance building, site/civil and associated track work is estimated at $22.3 million. A summary of these costs are provided in **Table 8.1** with more detail in **Appendix F**.

Table 8.1 – Maintenance and Operations Facility Cost Estimate

	UNIT	QTY	UNIT COST	2007 Dollar
Maintenance/Operations Facility	LUMP SUM	1	$22,260,000	$22,260,000
Property Acquisition	ACRE	38	$ 70,000	$ 2,660,000
Subtotal				$24,920,000
Engineering (25 percent)				$ 6,230,000
Contingency (30 percent)				$ 7,480,000
Project Oversight (10 percent)				$ 2,490,000
Total				**$41,120,000**

Capacity Upgrades

The costs associated with capacity upgrades that were included in previous studies were revised to reflect current unit prices that BNSF has provided for capacity upgrades associated with the Northstar Commuter Rail project. Additionally, the following changes are included to allow for greater capacity by allowing trains to travel at consistently higher speeds through the corridor: the use of #24 turnouts/crossovers versus #20 turnouts/crossovers, and #20 turnouts/crossovers versus #11 turnouts/crossovers. Unit prices have also been adjusted to 2007 dollars. Capacity upgrades presented in the summary represent estimated costs for upgrades between Hastings and the Minnesota Union Depot. A separate estimate has been prepared for costs to accommodate commuter rail between downtown St Paul and Minneapolis based on estimates prepared as part of the *Central Corridor Commuter Rail Study*.

Table 8.2 summarizes the capital costs for capacity upgrades in the Hastings to St. Paul section. The location of the upgrades is also illustrated in **Figures 8-1** and **8-2**.

Table 8.2 – Capacity Upgrade Improvements: Hastings to St. Paul section

DESCRIPTION	2007 Dollars
Hastings CP – upgrade power switch and provide turnout	$1,180,000
St. Croix BNSF/CP – construct crossover and increase speed	$5,310,000
Newport-Dunn CP/BNSF – construct crossovers and increase speed	$11,960,000
Subtotal	$18,450,000

Note: Costs are based on current Northstar Commuter Rail project costs for track upgrades and the current real estate costs incurred for the Northstar Commuter Rail project.

Table 8.3 summarizes the capital costs for capacity upgrades in downtown St. Paul to downtown Minneapolis section. The costs included in the table originated with what was represented in the *Central Corridor Commuter Rail Feasibility Study* in 2001 dollars and inflated to 2007 dollars. Previous experience from the Northstar Commuter Rail project has shown that the railroad may require that #15 turnouts be installed versus #9 and #11 turnouts that are currently included in the feasibility study cost

estimate, and that #24 turnouts be installed for anything greater than #15 turnouts that are also currently included in the feasibility study cost estimate. Unit costs associated with turnouts and crossovers were also updated to maintain consistency with the previous cost estimate for the Red Rock Corridor. The updated unit costs are based on information received from BNSF for the Northstar Commuter Rail project.

Table 8.3 – Updated Capacity Upgrade Improvements: Downtown St. Paul to Minneapolis Section

BNSF MIDWAY ROUTE DESCRIPTION	UNIT COST	2007 Dollars
Downtown Minneapolis to St. Anthony	$ 20,244,000	$20,244,000
St. Anthony to 7th Street	$ 22,302,000	$22,302,000
7th Street to St. Paul Union Depot	$ 7,705,000	$ 7,705,000
Signal Improvements	$ 9,845,000	$ 9,845,000
SUBTOTAL		$60,096,000
RAILROAD REAL ESTATE COSTS	**$180,000,000 - $241,000,000**	

CP MERRIAM PARK ROUTE DESCRIPTION	UNIT COST	2007 Dollars
Downtown Minneapolis to St. Anthony	$20,244,350	$ 20,244,350
St. Anthony to Merriam Park	$ 3,190,000	$ 3,190,000
Merriam Park to Grand Avenue	$ 2,755,000	$ 2,755,000
Grand Avenue to Western Avenue	$18,318,000	$ 18,318,000
Western Avenue to Chestnut Street	$ 4,186,000	$ 4,186,000
Chestnut Street to St. Paul Union Depot	$ 4,042,000	$ 4,042,000
Signal Improvements	$ 4,042,000	$ 4,042,000
SUBTOTAL		$ 52,735,350
RAILROAD REAL ESTATE COSTS	**$158,000,000 - $211,000,000**	

Note: The railroad real estate costs presented in the tables above include the track and signal improvement costs.

Hoffman Junction/Minnesota Union Depot

The *St. Paul Union Depot Analysis* (November 2003), identified costs associated with correcting Hoffman Junction in order to implement passenger rail service to the Depot (now referred to as Minnesota Union Depot). The study recommended two different grade separated schemes to remove passenger traffic from the freight flow at Hoffman. Two different alternatives were presented in the study: a "duck under" option for $36.7 million (2003 dollars) and a "fly over" option for $60 million (2003 dollars). In order to implement either of these alternatives, the following rail improvements were noted as necessary:

- Item 5: Restore the Depot track bed ($8.2 million)
- Item 14: Connect the Depot trackage to freight lines ($10.9 million)
- Item 8: Add Red Rock commuter trains ($39.1 million)

The November 2003 study included 30 percent for contingency and 15 percent for engineering and project oversight. To remain consistent with the Red Rock capital cost estimate, the following was added

to the base cost: 30 percent for contingency, 25 percent for engineering and an additional 10 percent for project oversight. The total cost of improvements at Hoffman Junction would be $105.2 million in 2003 dollars, and $123 million in 2007 dollars. **Table 8.4** provides a summary of the costs associated with Hoffman Junction/Minnesota Union Depot improvements. **Appendix F** provides a detailed breakdown of the Hoffman Junction/Minnesota Union Depot improvements.

A separate study is currently underway to further refine the required improvements and their associated costs to accommodate transit at the Depot**.**

Table 8.4 – Hoffman Junction/St. Paul Union Depot Improvements

HOFFMAN JUNCTION	2003 Dollars	2007 Dollars
Hoffman Junction Alternatives		
"Duck Under" Option (Preferred Option)	$ 24,550,000	$ 28,240,000
"Fly Over" Option**	$ 41,210,000	$ 47,050,000
Restore the Depot Track Bed	$ 4,980,000	$ 5,830,000
Connect the Depot Trackage to Freight Lines	$ 6,630,000	$ 7,770,000
Add Red Rock Commuter Trains	$ 23,720,000	$ 27,740,000
Property Acquisition	$ 3,850,000	$ 4,500,000
SUBTOTAL	$ 63,730,000	$ 74,080,000
Engineering (25%)	$ 15,930,000	$ 18,520,000
Contingency (30%)	$ 19,120,000	$ 22,220,000
Project Oversight (10%)	$ 6,370,000	$ 7,410,000
TOTAL	**$ 105,150,000**	**$ 122,230,000**

Note: A four percent inflation rate was used to determine 2007 dollar costs.
***The "fly over" option is shown for reference only; it is not included in the subtotal.*

Rolling Stock

Based on current ridership forecasts, it is assumed that a consist of three vehicles (one locomotive and two coaches) would be adequate for this corridor. To maintain consistency between the Red Rock Corridor and the Northstar Commuter Rail project, it was decided to use the same train schedule for both projects, a five train schedule with four train sets, with the beginning train returning to its origin for the fifth trip. One spare train set was also included in the cost estimate. This means the initial fleet would be five locomotives, five trailer coaches and five cab coaches. Detailed cost estimate for rolling stock is provided in **Appendix F**.

Table 8.5 – Rolling Stock (Commuter Rail Trains) Cost Estimate

DESCRIPTION	UNIT COST	QTY	TOTAL COST
Locomotives	$2,600,000	5	$13,000,000
Trailer Coaches	$2,300,000	5	$11,500,000
Cab Coaches	$2,400,000	5	$12,000,000
		Subtotal	**$36,500,000**
	Engineering (25%)		$ 9,130,000
	Contingency (30%)		$10,950,000
	Project Oversight (1%)		$ 3,650,000
		Total	**$60,230,000**

Storage Track Improvements

Storage track improvements identified in the *Red Rock Corridor Commuter Rail Feasibility Study* were revised to reflect current unit prices for the construction of storage track at Hastings. Current unit prices are based on new track costs that were used for the Northstar Commuter Rail project. Storage track improvements for the Minnesota Union Depot were included in the feasibility study; however, these costs were reallocated to be included with the Hoffman Junction/Minnesota Union Depot improvements that were noted earlier. Detailed cost estimates for storage track improvements are provided in **Appendix F** and summarized in **Table 8.6**.

Table 8.6 – Storage Track Improvements Cost Estimate

	UNIT	QTY	UNIT COST*	2007 Dollars
Hastings – Storage Track	TF	1600	$230	$370,000
Engineering (25%)				$90,000
Contingency (30%)				$110,000
Project Oversight (10%)				$40,000
TOTAL				$610,000

Note: Based on current Northstar Commuter Rail project costs

Station Costs (Includes Structural Elements and Parking)

Hastings to St. Paul section

Sketch layouts were created for anticipated improvements at each station; including proposed platform configurations, parking, and required structural work (See **Figures 6-4** to **6-7).** Two options also depict representative estimated pond areas for stormwater management. Platforms were modeled after those in the Northstar project; the typical size would be 425 feet long by 35 feet wide. It is also assumed that the facilities and amenities would be similar to the Northstar project. For the Minnesota Union Depot, platform and right-of-way acquisition costs are included in the cost summary (see Hoffman Junction/Minnesota Union Depot Improvement section for additional costs associated with the improvements required to accommodate commuter rail at the Depot).
Station cost elements were derived from the latest Northstar Commuter Rail cost estimates (December 2006). More specifically, unit platform costs from the Big Lake (one platform), Elk River (two

platforms), and Anoka (two platforms) stations were used to determine unit platform costs for Red Rock (see Appendix F for cost breakdowns per station). The estimated cost was adjusted for inflation and also converted into a platform per square foot cost for use at the Hastings station.

The overhead pedestrian bridge costs were derived from the Northstar Commuter Rail-Coon Rapids Station pedestrian bridge cost estimate. This includes a fully enclosed canopy structure over the pedestrian bridge and a stair/elevator tower at each end of the structure. The costs for the pedestrian bridges include associated electrical and mechanical costs. The cost for the pedestrian bridge over TH 61 (Lower Afton Station) was calculated based off of an average square foot cost from the Coon Rapids Station pedestrian bridge.

In addition to the material and construction costs for the stations, electrical, civil/landscaping, communication and right-of-way/property costs were estimated. The electrical costs vary due to the presence or lack of additional structures. The Coon Rapids Station was used to gain additional cost data for structures and the associated electrical costs. An average for communication costs, based Northstar costs, was included in the estimates on a per platform basis.

The civil/landscaping costs were broken down into an approximate cost per parking space and incorporated where additional parking is anticipated. The estimate assumes that adequate parking is provided at both the Lower Afton and Cottage Grove sites (based on preliminary ridership estimates) and that the Minnesota Union Depot station would not include a park-and-ride facility.

Estimated right-of-way costs were derived from the values included in Technical Memorandum #4, with adjustments for inflation. It is recognized that real estate prices are market-driven and based on several factors. Additionally, it could be expected to see yearly increases at varying inflation rates from those used in the other calculations.

Table 8.7 – 2007 Station Costs: Hastings to St. Paul Section

DESCRIPTION	2007
Lower Afton Road[1]	$ 7,007,770
Newport	$ 5,032,930
Hastings	$ 3,695,050
Cottage Grove	$ 1,854,460
SUBTOTAL	$ 17,590,210
Engineering (25%)	$ 4,397,550
Contingency (30%)	$ 5,277,060
Project Oversight (10%)	$ 1,759,020
TOTAL	**$ 29,023,840**

Note: Lower Afton Road Station cost includes both pedestrian crossings

Downtown St. Paul to Downtown Minneapolis Stations

The *Central Corridor Commuter Rail Feasibility Study* provided preliminary cost estimates for commuter rail stations along the two proposed corridors analyzed in the *Red Rock Feasibility Study*, BNSF Midway, and CP Merriam routes. The BNSF Midway route included stations at Downtown Minneapolis, NE Minneapolis, University of Minnesota (U of M), Snelling Avenue, Rice Street, and the Minnesota Union Depot. The CP Merriam route included stations at Downtown Minneapolis, NE Minneapolis, U of M, Snelling Avenue, Science Museum, and the Minnesota Union Depot.

Costs that were included in the Feasibility Study for the U of M and Snelling Avenue commuter rail stations were included to provide a 2007 cost for each of the stations. The U of M station is located along the existing BNSF Midway Subdivision tracks in the area northeast of the U of M East Bank Campus. This station location would be the same for both of the proposed routes. The Snelling Avenue station would be located at the Snelling Avenue overpass along the BNSF Midway route, and at the intersection of Snelling Avenue and Marshall Avenue along the CP Merriam route. **Table 8.8** provides a summary of the costs both in 2001 dollars and inflated to 2007 dollars. The cost estimate included in the *Central Corridor Feasibility Study* included 20 percent for engineering and 30 percent for contingencies. To maintain consistency with the Red Rock Corridor capital cost estimate, these percentages were modified to be 25 percent for engineering, 30 percent for contingencies, and an additional 10 percent for project oversight.

Table 8.8 – Station Costs – St. Paul to Minneapolis Section

BNSF MIDWAY ROUTE					
DESCRIPTION	**UNIT**	**QTY**	**UNIT COST**	**2001 Dollars**	**2007 Dollars**
COMMUTER RAIL STATIONS					
University of Minnesota	LS	1	$ 3,000,000	$ 3,000,000	$ 4,089,000
Snelling Avenue	LS	1	$ 3,800,000	$ 3,800,000	$ 5,179,000
SUBTOTAL				$ 6,800,000	$ 9,268,000
Engineering (25 percent)				$ 1,700,000	$ 2,317,000
Contingency (30 percent)				$ 2,040,000	$ 2,780,400
Project Oversight (10 percent)				$ 680,000	$ 926,800
TOTAL				**$ 10,540,000**	**$ 14,365,400**
CP MERRIAM PARK ROUTE					
DESCRIPTION	**UNIT**	**QTY**	**UNIT COST**	**2001 Dollars**	**2007 Dollars**
COMMUTER RAIL STATIONS					
University of Minnesota	LS	1	$ 3,000,000	$ 3,000,000	$ 4,089,000
Snelling Avenue	LS	1	$ 3,000,000	$ 3,000,000	$ 4,089,000
SUBTOTAL				$ 6,000,000	$ 8,178,000
Engineering (25 percent)				$ 1,500,000	$ 2,044,500
Contingency (30 percent)				$ 1,800,000	$ 2,453,400
Project Oversight (10 percent)				$ 600,000	$ 817,800
TOTAL				**$ 9,300,000**	**$ 12,675,900**

Commuter Rail Cost Summary

Table 8.9 summarizes capital improvement costs in the Hastings to St. Paul section. **Table 8.10** summarizes the track improvement, signal improvement, and station costs for the Downtown St. Paul to Minneapolis section. As presented in the tables, the total cost estimate for the defined MOS segment, from Hastings to St. Paul ranges from approximately $348 to $366 million, with the railroad real estate costs serving as the varying factor in the estimate. In comparison, the capital cost for the section from St. Paul to Minneapolis would range from $171 million to $256 million, with the railroad real estate costs being the most significant varying factor (reflects assumed range for both the CP and BNSF alignments).

Table 8.9 – Capital Cost Summary – Hastings to St. Paul Section

	RED ROCK COMMUTER RAIL FEASIBLITY STUDY ESTIMATES		AA TOTAL COST ESTIMATE (2007 Dollars)
	2001 Dollars	**2007 Dollars**	
Maintenance/Operations Facility	$ 20,650,000	$ 28,140,000	$ 24,920,000
Layover Facility	$ 4,320,000	$ 5,890,000	$ -
Storage Track	$ 210,000	$ 290,000	$ 370,000
Vehicles (Rolling Stock)	$ 53,650,000	$ 77,500,000	$ 60,230,000
Stations	$ 15,910,000	$ 21,680,000	$ 17,590,000
SUBTOTAL	$ 94,740,000	$133,500,000	$ 103,110,000
Engineering (25 percent)	$ 23,690,000	$ 33,380,000	$ 25,780,000
Contingency (30 percent)	$ 28,420,000	$ 40,050,000	$ 30,930,000
Project Oversight (10 percent)	$ -	$ -	$ 10,310,000
Hoffman Junction/The Depot			$ 122,230,000
Railroad Real Estate Costs	$ 14,400,000*	$ 19,690,000*	$ 55,400,000 - $73,800,000
TOTAL	**$161,250,000**	**$226,620,000**	**$ 347,760,000 - $ 366,160,000**

Note: The Red Rock Corridor Commuter Rail Feasibility Study did not specifically include a railroad real estate cost estimate, but rather an overall track capacity improvement estimate. Hence, the estimates presented under the feasibility study reflect capacity improvements ONLY. The AA total cost estimate column in 2007 dollars under the railroad real estate cost reflect the estimate in this category based on track capacity improvements estimated at $18,450,000.

Station costs assume the pedestrian structure over TH 61 at Lower Afton Station.

Table 8.10 – Capital Cost Summary – Downtown St. Paul to Minneapolis Section

BNSF MIDWAY ROUTE	
	2007 Dollars
Track and Signal Improvements	$180,000,000 - $241,000,000
Commuter Rail Stations	$ 14,365,400
TOTAL	**$195,000,000 - $256,000,000**

CP MERRIAM ROUTE	
	2007 Dollars
Track and Signal Improvements	$158,000,000 - $211,000,000
Commuter Rail Stations	$ 12,675,900
TOTAL	**$171,000,000 - $224,000,000**

As the capacity improvements required to operate commuter rail service in the existing railroad rights- of-way are key elements in determining the overall capital cost estimates, representatives of the Red Rock project team met with Canadian Pacific Railway and BNSF Railway Company to review preliminary AA findings. A summary of each of these meetings is below.

Canadian Pacific Railway:
Red Rock Corridor staff met with Canadian Pacific Railway (CPR) staff on September 26, 2007 to discuss the results of the AA. Red Rock staff provided CPR staff with the methodology used to determine issues and solutions associated with the sharing of CPR track between fright trains and commuter trains. Additional detail was provided on how the costs were determined for these solutions and how this differed from the 2001 Commuter Rail Feasibility Study. The meeting resulted in the following:

- Agreement on the Red Rock methodology as a good starting point for determining the costs associated with implementing commuter rail on Canadian Pacific Railway track.
- Agreement that the capital and operating costs presented in the report will change based on further analysis and timing for the implementation of commuter rail.
- Agreement to continue to meet as needed to keep each other informed on each other's pertinent projects.
- Agreement to work to identify and seek funding for near-term capacity improvement projects along the Red Rock and High Speed Rail Corridors that can benefit commuter, passenger, and freight rail.

A letter from Canadian Pacific Railway documenting the meeting with Red Rock staff is included in **Appendix G.**

BNSF Railway Company:
Red Rock Corridor staff met with BNSF Railway staff on October 16, 2007 to discuss the results of the AA. Red Rock staff provided BNSF staff with the methodology used to determine issues and solutions associated with the sharing of BNSF track between fright trains and commuter trains. Additional detail was provided on how the costs were determined for these solutions and how this differed from the 2001 Commuter Rail Feasibility Study. BNSF staff was concerned about early costs being presented and

therefore establishing expectation; however they recognize the need to disclose the costs in the AA and understand the rationale used in developing the numbers. The meeting resulted in the following:

- Agreement on the Red Rock methodology as a good starting point for determining the costs associated with implementing commuter rail on BNSF track.
- Agreement that the capital and operating costs presented in the report will change based on further analysis and timing for the implementation of commuter rail.
- Agreement to keep BNSF informed of changes in the status of implementing commuter rail in the Corridor.

A letter from BNSF documenting the meeting with Red Rock staff is included in **Appendix G**. This letter lists additional comments and milestones that will need to be addressed as commuter rail moves toward implementation.

8.3 Enhanced Bus Service Capital Cost Estimates

Preliminary construction cost estimates (excluding right-of-way costs) were developed for Express Bus Options 2 and 3 to reflect the roadway improvements required to accommodate shoulder running buses from Lower Afton Road to Hastings, and improving the travel time of the shoulder running buses by approximately 20 percent. The cost estimates for shoulder running buses (Option 2) totals approximately $18 million (2007 dollars) and $75 million (2007 dollars) for Option 3 (shoulder running buses to Hastings and 20 percent travel time improvements) between Hastings and St. Paul. Proposed improvements included in the estimate are presented below:

- Queue jump at Hastings Bridge
- Added lane from BNSF bridge to Highway 10
- Highway 10 interchange (three-way)
- Added lane from Highway 10 to Highway 95
- Highway 95 interchange
- Formal shoulder lane from 70th to Glen Road
- Interchange adjustment at Glen Road
- Formal shoulder lane from Glen Road to I-494
- I-494 interchange adjustments
- Formal shoulder lane from I-494 to Carver Avenue
- Queue jump at Lower Afton Road
- Formal shoulder lane from Lower Afton Road to Warner Road
- Warner Road queue jump

Capital cost estimates associated with additional bus fleet requirements were not developed at this stage in the analysis, as it is undetermined at this time how many additional buses would be required to accommodate the proposed express bus service in the corridor.

Figure 8-1: PROPOSED SYSTEM IMPROVEMENTS - HASTINGS TO COTTAGE GROVE

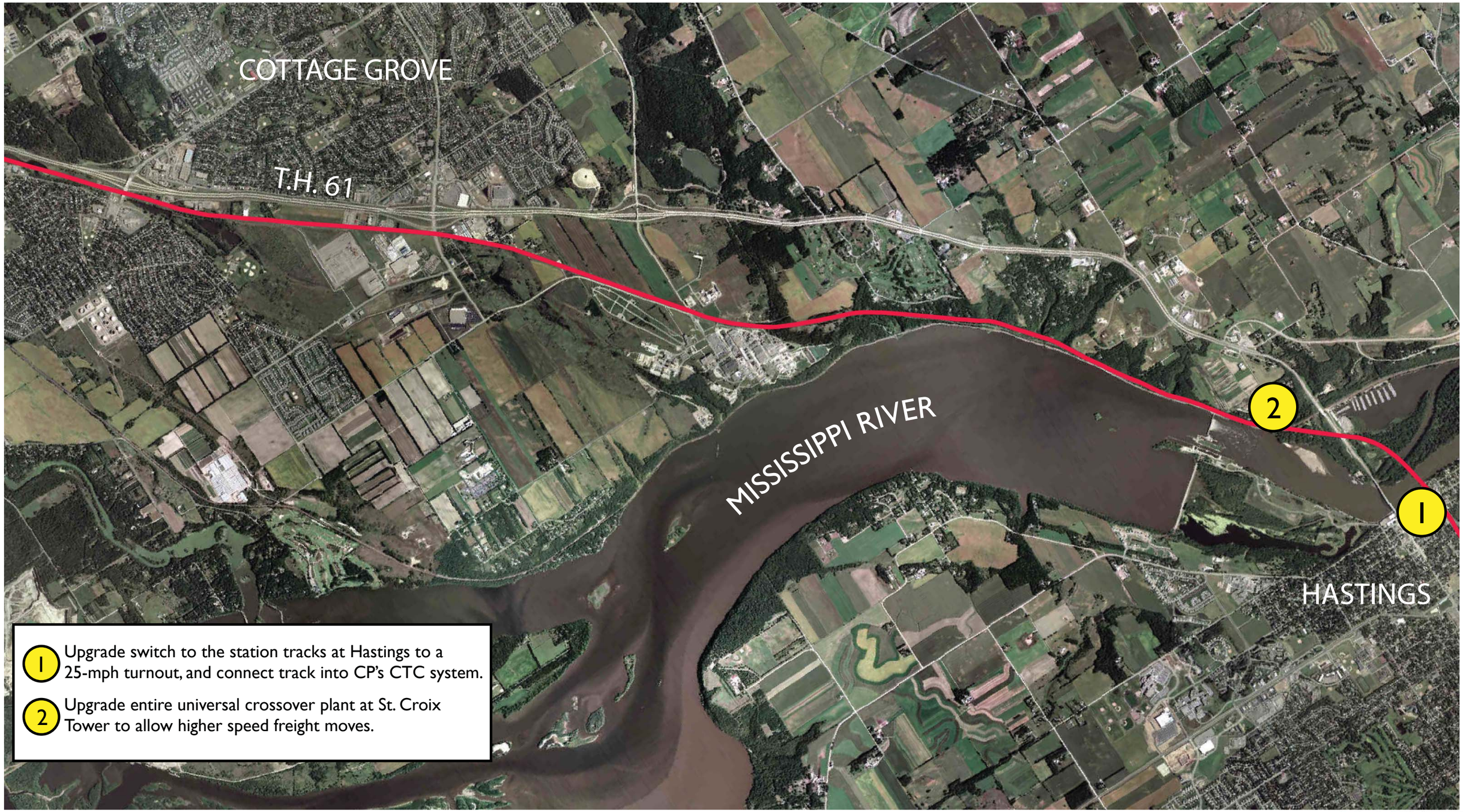
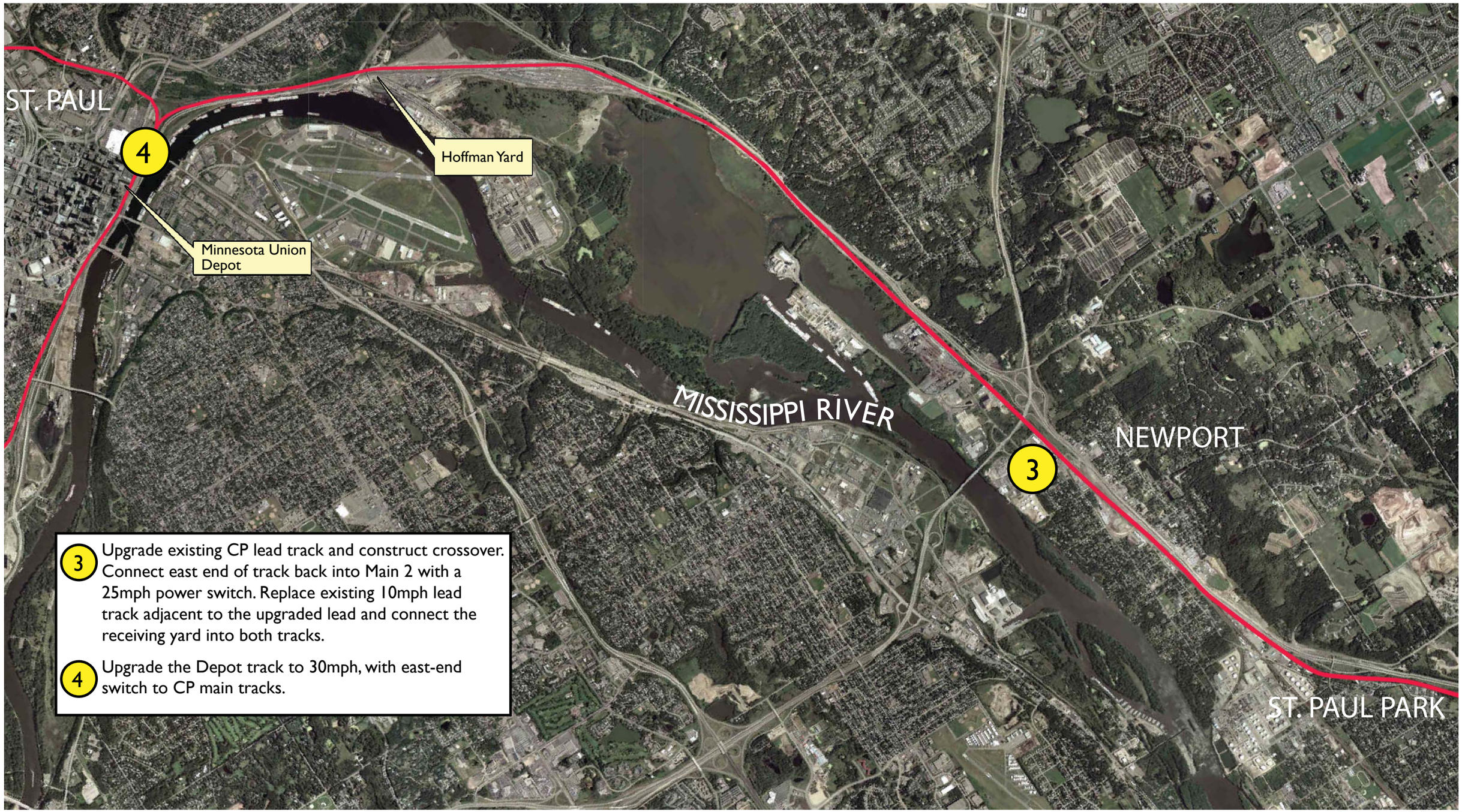


Figure 8-2: Proposed System Improvements - St. Paul Park to St. Paul



9.0 ESTIMATED OPERATING COSTS

9.1 Operating Cost Methodology

Calculation of the commuter rail operating costs was based on cost assumptions developed and approved by the FTA for the Northstar Commuter Rail Project. The commuter rail operating costs were developed for the MOS of the corridor, defined as Hastings to downtown St. Paul. The specific operating assumptions used in the cost estimate are presented in **Table 9.1**.

Table 9.1 – Commuter Rail Operating Cost Assumptions

OPERATING ASSUMPTIONS – Hastings to St. Paul	
Peak locomotives	4
Peak cars	8
Annual train trips	3,684
Annual rev train-miles	71,838
Annual rev car-miles	143,676
Annual rev loco-miles	71,838
Annual rev train-hours	1,903.4
Passenger stations	5
Route miles	19.5
Yards	1
Running time per trip	31 minutes (0.52 hour)
Fuel usage	1.7 gallons/rev train mile

Metro Transit is assumed to function as the operation and maintenance agency for commuter rail service in the Red Rock Corridor. Actual train operations and track maintenance will be contracted to the applicable railroads (BNSF or CP). Specific operating assumptions in the development of commuter rail operating and maintenance costs are as follows:

Metro Transit Rail Division Costs

Metro Transit's existing rail division will have operations oversight responsibilities. Specific departments that are anticipated to be impacted by commuter rail operations are as follows:

- *Risk Management and General Liability*—Operation of commuter rail service would trigger the need for additional insurance coverage.
- *Vehicle Maintenance*—It is assumed that Metro Transit staff will take on the responsibility of light vehicle maintenance and car cleaning functions. Heavy maintenance functions on locomotives are anticipated to be contracted to nearby railroad operators. The Red Rock cost estimate includes costs for additional mechanics and car cleaners. The cost for diesel fuel also is included in this department, and is based on a diesel fuel cost of $2.37 per gallon (Metro Transit's estimated diesel fuel rate for 2007).
- *Facility Maintenance*—An additional mechanic is assumed for station/maintenance repair. Costs are included for contracted station cleaning services, materials, and utilities.
- *Revenue Collection/Money Counting*—An additional staff person is assumed for revenue collection. Money counting security and costs for materials are based on Hiawatha cost experiences.

Metro Transit Bus Division Costs

Some of Metro Transit's departments fall under the bus division, but have both bus and rail service-related responsibilities. For example, the marketing department is organized under the bus division, but is responsible for marketing both bus and Hiawatha LRT services. The Red Rock Commuter Rail cost estimate includes potential additional costs for departments such as marketing that fall within the bus division. Specific departments that are anticipated to be impacted by commuter rail operations are as follows:

- *Finance*—An additional one-half full-time employee equivalent (FTE) is assumed for both accounts payable and money counting. Expenses also have been assumed for contracted services and other non-labor expenses.
- *Human Resources and Information Services*—Metro Transit's budget includes expenses to the Metropolitan Council for these two functions. Additional costs have been assumed for commuter rail operations.
- *Purchasing*—An additional one-half FTE is assumed for purchasing.
- *Marketing*—An additional one-quarter FTE (Marketing Development Specialist) is assumed for marketing, along with $100,000 for marketing services and costs for materials and supplies.
- *Safety*—An additional one-half FTE is assumed for the safety department.
- *Police/Security*—Two additional police officers are assumed. A security service cost of $200,000 also has been assumed for 24-hour/seven days per week security at the commuter rail yard.

Railroad Costs

Costs for railroad operations and track maintenance are based on recent negotiations completed for the Northstar Corridor project. Projected railroad fees total $3.4 million and are as follows:

- *Train operations:* $2.159 million
- *Management fee:* $324,000
- *Right-of-Way maintenance fees:* $838,500
- *Miscellaneous expenses:* $66,000

9.2 Commuter Rail Operating Cost Estimates

Overall, the estimated annual O&M cost for Red Rock Commuter Rail operations is $6.7 million and is summarized in **Table 9.2**, with greater detail provided in **Appendix H**. This is equivalent to $3,524 per revenue train-hour and $46.68 per revenue car-mile.

Table 9.2 – Operating Cost Summary: Minimum Operating Segment (Hastings to St. Paul)

Division/Department/Cost Item	Expense
Metro Transit Rail Division	
Risk Management	$ 819,100
Vehicle Maintenance	$ 1,048,920
Facility Maintenance	$ 488,530
Revenue Collection	$ 227,190
Subtotal	**$ 2,583,740**
Metro Transit Bus Division	
Finance	$ 86,010
Human Resources	$ 15,980
Information Services	$ 30,860
Purchasing	$ 39,310
Marketing	$ 134,365
Safety	$ 44,745
Police/Security	$ 384,070
Subtotal	**$ 735,340**
Railroad Expenses (Train Operations)	**$ 3,387,570**
TOTAL OPERATING COSTS	**$ 6,706,650**

9.3 Bus Operating Cost Estimates

The estimated bus operating costs were developed using Metro Transit's three point cost model, as defined as follows:

- $208 flat cost for operating peak period bus
- $52.37 per peak hour of bus operation
- $2.08 per bus mile traveled

Based on the three point cost model, the daily operating cost for existing Routes 361 and 365 in the corridor is $5,500.

The express bus service plan developed for the AA study reflects a plan that maximizes ridership potential. In other words, the bus operations assumes a one seat/one stop ride from the respective corridor station into either downtown St. Paul (Route 361) or downtown Minneapolis (Route 365). Hence, detailed operating costs were not developed at this stage in the evaluation. Based on Metro Transit experience on similar routes in the region, it is anticipated that under the various bus options, operating costs would at a minimum double compared to existing operating costs in the corridor. More detailed bus operating costs will be developed during the next phase of the project, and will include key inputs such as number of buses required to service ridership, number of hours per bus during the peak period, and number of miles projected for each bus in service.

10.0 SUMMARY OF PUBLIC INVOLVEMENT

The Red Rock Corridor Commission recognizes that public involvement and outreach is a key element in the development of a transit project in the Corridor. The Commission engaged the public in the first phase of the project, the Commuter Rail Feasibility Study, by providing various opportunities for stakeholder participation. The public involvement activities in the alternatives analysis built upon the Commuter Rail Feasibility Study public involvement program and sought to reach the stakeholders along the entire 30-mile corridor. Although some public involvement and communication activities took place throughout the project period, the public involvement work centered around two key points in the project: at project kick-off in 2004 and prior to the adoption of the Alternatives Analysis Study in 2007.

10.1 Key Messages

Of importance to any public involvement program is the development of key messages that ensure that all parties speaking or writing about the Project and the Corridor are providing clear and consistent messages. The messages presented below were developed in the Public Involvement Strategy Session, and are grouped by issues likely to be of importance to stakeholders.

What is the Red Rock Corridor?

- The Red Rock Corridor is a 30-mile corridor that runs from Hastings through St. Paul connecting to downtown Minneapolis.
- The Red Rock Corridor has a key stop at the Minnesota Union Depot station in St. Paul.
- The Red Rock Corridor terminates at the downtown multi-modal station in Minneapolis.

What is the Red Rock Corridor Commission?

- Commission members include the Regional Railroad Authorities of Dakota, Hennepin, Ramsey, and Washington Counties, the cities of Hastings, Denmark Township, Cottage Grove, St. Paul Park, Newport, St. Paul and Minneapolis.
- Ex-Officio members include the City of Red Wing, Goodhue County, the Prairie Island Indian Community and Canadian Pacific Railway.
- The Metropolitan Council, Metro Transit, and Mn/DOT provide staff assistance to the RRCC.

What is an Alternatives Analysis, its purpose, and the proposed timeline?

- An Alternatives Analysis objectively studies the benefits, costs and impacts of transit alternatives available to meet the transportation needs of the Corridor's residents and businesses.
- An Alternatives Analysis is required in order to receive federal New Starts funding to help with construction of any transit alternative.
- An Alternatives Analysis will result in a recommendation of the most effective and preferred methods of transit for the Red Rock Corridor.

Who is Paying for the Alternatives Analysis Study?

- The Red Rock Corridor Alternatives Analysis is funded through federal and local funds.

What happens after the Alternatives Analysis is Complete?

- The Red Rock Corridor Commission will determine if alternatives identified merit further analysis in a Draft Environmental Impact Statement or if interim steps are needed to advance transit in the corridor.

When will the transit service be open for use?

- Development of transit in the Red Rock Corridor is a long-term project with the timing dependent on the mode of transit selected, available funding, and the success of other transit corridors in the region.
- The Metropolitan Council's Transportation Policy Plan included the Red Rock Corridor as a Tier 2 transitway in its 2030 Transitway System description.

How does the Red Rock Corridor relate to the Central Corridor?

- The Central Corridor is the primary east-west transportation route between downtown Minneapolis, the University of Minnesota and downtown St. Paul. Bus Rapid Transit and Light Rail Transit were the two build alternatives considered in 2004. LRT has now been selected as the locally preferred alternative.
- The Red Rock Corridor follows Trunk Highway 61, Interstate 94, and the BNSF and CP tracks approximately 30 miles from Hastings through downtown St. Paul to downtown Minneapolis.

How does the Red Rock Corridor fit into the regional plans for transit?

- Red Rock is part of the planned transitway system for the Twin Cities.

Why should the public care that studies are continuing for the Red Rock Corridor?

- Because the future mobility needs of the public need to be addressed and planned for as congestion grows along the Corridor.
- Because commuters and non-commuters alike will be impacted by development in the Red Rock Corridor.
- Because development of a transportation alternative in the Red Rock Corridor gives commuters a choice of transportation modes for their trips.
- Because an alternative mode of transit in the Red Rock Corridor is one piece in the larger picture of regional transit and transportation needs.
- Because commercial and residential development that might occur in conjunction with the development of the Red Rock Corridor, and this would impact surrounding communities.

How can I become involved in the planning or find out more about the Corridor?

- A variety of involvement opportunities exist throughout the study period including participation in open house meetings. Information is available through newsletters, fact sheet, project website (redrockcorridor.com), newspaper stories, and community presentations.

10.2 Audiences

Public involvement efforts in 2004 and 2007 targeted the following audiences:

- Residents and businesses along the corridor
- City Councils and County Regional Railroad Authorities
- Legislators representing the Corridor

- Chambers/business organizations
- Stakeholder agencies
- Other Twin Cities corridors
- Ethnic Communities
- Environmental groups
- Housing groups

10.3 2004 Public Involvement Activities

Prior to beginning the alternatives analysis, several public involvement activities were undertaken to incorporate public input into the study.

Public Open House Meetings
Two public open house meetings were held September 8 and 9, 2004 in Cottage Grove and St. Paul, respectively. The goals of the open houses were to educate the public on transit technologies and process requirements, provide information on the options being studied and the project schedule, and receive public comment. Both open houses were well attended, with attendance at each location as follows:

September 8, 2004: Cottage Grove City Hall	40
September 9, 2004: St. Anthony Park Library	23
TOTAL	**63 people**

The open houses were held from 4:30p.m. to 7:30p.m., with an open question and answer format punctuated by two short presentations at 5:30p.m. and 6:30p.m. that provided an overview of the various transportation modes to be evaluated in the Red Rock Corridor. For a summary of comments received, see **Appendix I**.

The open house meetings were promoted in the newsletter, which was mailed to approximately 700 stakeholders. In addition to the newsletter, the Commission and staff promoted the open house meetings by seeking media coverage through advertising, interviews, and press releases. Press releases were distributed to the daily papers, community newspapers, and to the publications serving minority communities.

An informal survey found that approximately 30% of the open house attendees learned about the events through a newsletter, press release, or e-mail. The open house meetings received media coverage.

Newsletter
The first project newsletter on the alternatives analysis was developed in August 2004. The newsletter announced the public open houses, the start of the alternatives analysis, and provided general information on the project. 1,000 copies of the first newsletter were printed and distributed in mid- to late-August, prior to the open house meetings. 700 copies were distributed through the mail to stakeholder groups, residents and businesses along the corridor. Additional copies were provided as handouts at various government sites.

Fact Sheet Template
A four-color fact sheet template was designed using a design similar to the newsletters and in a format that updated project information could be inserted into the blank spaces. 1,200 copies of the Fact Sheet template were printed and distributed in 2004.

Presentation Package
A presentation highlighting the purpose of the Alternatives Study, background on the Corridor and opportunities for stakeholders to participate was developed. RRCC staff and Commission members made themselves available to present information on the Corridor to a variety of business and community groups. The presentations served a dual purpose, that of sharing information on the corridor and gathering comment on key elements of the study. Meetings with the cities of Newport and St. Paul Park staff, to provide a project overview, occurred in November 2004. Study overview presentations to Newport and St. Paul Park City Councils were made in early 2005. Corridor information was also made available via telephone to ethnic community groups in November 2004.

Media Relations
Press releases were distributed by the member counties immediately prior to the open house meetings held on September 8 and 9th, 2004. WCCO TV interviewed, Michael Rogers, Washington County, on September 8, 2004. The interview focused on the open house meetings and the purpose of the Alternatives Analysis Study. WCCO TV interview aired on September 8, 2004 on the 5:00 p.m., 6:00 p.m. and 10:00 p.m. news broadcasts. WCCO 830 Radio interviewed Alicia Vap, Ramsey County. The interview also focused on the open house meetings and aired on September 8 and 9, 2004.

South Washington County Cable TV taped a 30-minute segment with Michael Rogers, Washington County. The 30-minute segment was broadcast as part of the County Insight show and was aired numerous times throughout August 2004. The South Washington Cable TV station conducted two additional interviews with Corridor staff and these interviews aired in October.

The St. Paul Pioneer Press published a story on the Red Rock Corridor on Sunday, October 31, 2004. The story focused on the Alternatives Analysis Study and the Corridor transit development timeline.

Red Rock Corridor Commission meetings are televised on South Washington County cable TV. The Red Rock Corridor Study was pitched to the South Washington County Bulletin in late December, 2004.

Paid Advertising
A limited number of paid advertisements were placed in print publications in Cottage Grove, Newport and Hastings to announce the public open houses. The quarter-page advertisements included information on public open house dates and locations, as well as project contact information.

Coordination with Railroads
Coordination meetings were held during the project with Canadian Pacific Railway, BNSF Railway Company, and Union Pacific Railroad to update them on study progress and impacts to each respective railroad.

Outreach to Ethnic Communities
A list of community leaders and print publications was developed in 2004. Press releases announcing the 2004 open houses were sent to the minority press through the Washington County public affairs office.

2004 Public Involvement Themes

Common themes that emerged from the 2004 open houses and presentations included the following:

- Address growing congestion
- Provide options for transit-dependent people
- Address safety concerns
- Make sure travel times are competitive
- Reverse commuter options
- High speed rail benefits to the rail options
- Provide routes between downtowns
- Local funding needs for a cohesive national system
- Connectivity between different systems (i.e. Hiawatha)
- Look beyond "traditional borders" of regions
- Promote transit-friendly development
- Consider needs of commuters out of the city center
- Use existing infrastructure
- Consider air options
- Local connectivity (i.e. parking lots, local buses and shuttles)

10.4 2007 Public Involvement Activities

In 2007, public involvement activities were undertaken to summarize project activities to date, present the results of the alternatives analysis, and obtain public input on study results and next steps. A number of public involvement strategies were employed to reach the target audiences in 2007.

Public Open House Meetings

Four public open house meetings were held August 21, 22, and 23, 2007 in St. Paul, Hastings, and Cottage Grove, respectively; and September 11, 2007 in Red Wing. Locations were selected to reach the stakeholders along the entire 30-mile corridor, including its larger travel shed. Attendance at the open houses was as follows:

August 21, 2007: St. Anthony Park Library	5
August 22, 2007: Hastings City Hall	20
August 23, 2007: Cottage Grove City Hall	15
September 11, 2007: Red Wing Public Library	33
TOTAL	**73 people**

Each open house was held during a three-hour timeframe during which people were encouraged to view display boards and ask questions or provide comments to project staff. Display board topics included:

- Welcome
- Red Rock Corridor Commission member list
- Public involvement opportunities
- A map of the corridor (w/o regional connections)
- The need for transit improvements

- Project goals/purpose
- Implementation chart
- Alternatives Analysis (alternatives studied, key elements)
- Ridership forecasts
- Cost summary
- Definitions of commuter rail and express bus
- Aerial of the corridor
- Regional transitway map

A presentation was also given at each open house to provide more detailed information about the project. Staff responded to stakeholder questions during a question and answer period. Throughout the open house, the public had the opportunity to talk with project staff and commission members about their ideas and concerns on the project. The public also had the opportunity to provide written comments. For a summary of comments received, see **Appendix I**.

Presentations

In order to inform stakeholders about the project and the results of the alternatives analysis, numerous presentations were made to City Councils and other groups in 2007. These presentations included:

- City of Hastings: July 16, 2007
- Goodhue County/Prairie Island Indian Community: July 25, 2007
- City of Cottage Grove: August 8, 2007
- City of Redwing: August 13, 2007
- City of Newport: August 16, 2007
- Dakota County Regional Railroad Authority: August 23, 2007
- City of St. Paul (LOCATE Task Force) – September 17, 2007
- Ramsey County Regional Railroad Authority: September 25, 2007
- Washington County Regional Railroad Authority: October 2, 2007
- Metropolitan Council Transportation Committee: October 8, 2007
- Red Wing Area Chamber of Commerce: October 15, 2007
- City of St. Paul Park: October 15, 2007

Invitations were also extended to other transportation and environmental groups.

Newsletter

The second project newsletter on the alternatives analysis was developed in early August 2007. The newsletter announced the public open houses, the results of the alternatives analysis, and provided information on the project implementation plan. 6,000 copies of the newsletter were printed, of which more than 3,000 were mailed directly to property owners along the corridor. More than 300 copies were sent to interested parties. The remaining copies were distributed through city and county offices and at the Minnesota State Fair.

2007 Minnesota State Fair

The Red Rock Corridor had a presence at the Metro Transitways Development Board booth at the 2007 Minnesota State Fair. The project newsletter and fact sheet were distributed at the booth. In addition, Red Rock Corridor coasters were given away. The giveaway was well-received by fair-goers and may be used long-term. The booth was staffed by several Red Rock Corridor Commission members and staff.

Media Relations

Media relations were a key part of the public involvement process in July, August and September. A preliminary press release was distributed by the Washington County Public Affairs on June 29, 2007, to release preliminary results of the alternatives analysis.

Michael Rogers, Washington County was interviewed for an article appearing in the South Washington County Bulletin on July 4, 2007, announcing the preliminary results of the alternatives analysis. The main focus of the article was the ridership projections for the corridor.

Dakota County Commissioner Joseph Harris was interviewed for an article in the Hastings Star Gazette on July 5, 2007. The article highlighted key study findings, including ridership projections. Commissioner Harris noted that commuter rail is the ultimate goal for the corridor and he referenced the success of the Hiawatha LRT Line.

A second press release was distributed by the Washington County Public Affairs on August 6, 2007, to announce the public open houses and provide further information on the results of the alternatives analysis.

The Star Tribune interviewed Michael Rogers and Red Rock Corridor Commission Chairperson Myra Peterson on August 21, 2007. The interview focused on ridership projections and the need for transit in the corridor. An article on the project appeared in the Star Tribune on August 22, 2007.

A second article in the South Washington County Bulletin appeared on August 15, 2007, in which both Michael Rogers, Washington County and Red Rock Corridor Commission Chairperson Myra Peterson were interviewed. The article focused on ridership projections for the corridor and announced the public open house in Cottage Grove on August 23, 2007. A follow-up article appeared in the same publication on August 29, 2007, which included public comments from the public open house in Cottage Grove on August 23, 2007. The article profiled several Cottage Grove citizens who expressed great interest in seeing commuter rail being implemented in the Red Rock Corridor.

Cities and counties also assisted in additional promotions by further distributing the press release and newsletter, placing information on cable access channels, and contacting other communications outlets.

An additional press release on the alternatives analysis is planned for distribution following the adoption of the report.

Project Fact Sheet

A project fact sheet was developed to include key project elements and the Implementation Plan. The piece was distributed at presentations to stakeholder groups, as well as the public open houses. The fact sheet may continue to be used as the project progresses (see **Appendix I**).

Website

A project Web site was maintained and updated throughout the project. The website provided notice for the public open houses, including maps to each location. Other information on the website includes technical reports, project newsletters, frequently asked questions, and project contact information.

2007 Public Involvement Themes

Common themes that emerged from the 2007 open houses and presentations included the following:

- Overall people very interested in and supportive of the project.
- Desire for commuter rail to be implemented sooner.
- Interest in how Red Rock connects to other corridors.
- Interest in express bus service or expanded bus service.
- Ridership projections seemed low to many people.
- There were many questions asking for clarification regarding the differences between commuter rail, high speed rail, and light rail transit.
- There was much support for high speed rail.
- There was much interest in express bus service or expanded bus service.
- People wanted to know how they could help advance the project.

11.0 EVALUATION OF RESULTS AND RECOMMENDATIONS

11.1 Evaluation of Results

The project is needed to provide travelers with a choice and a means to avoid congestion and reduce travel time in the corridor, as well as provide increased modal alternatives and multimodal options and increase mobility for peak-hour travel to employment in the study area.

The defined Red Rock project goals serve as the foundation for evaluating the transit alternatives studied in the AA process and include the following:

- Cost-effectively address transportation problems in the Corridor
- Provide transportation options (mode choices) to people in the Corridor
- Stimulate community and economic development
- Enhance regional transit system performance
- Improve quality of natural and built environmental
- Financial feasibility

Upon reviewing the results of the ridership forecasts and capital and operating costs, as well as the existing and proposed land use and environmental conditions in the Red Rock corridor, the following primary conclusions can be reached regarding the transit alternatives evaluated in the AA study:

- Based on the existing commuter rail ridership forecasts (year 2030) of 1,600 riders per day (Hastings to St. Paul segment), along with the capital cost estimate of $348 to $366 million, the Red Rock Corridor will experience difficulty competing for funds under the current federal New Starts program. To improve its competitive standing, the Red Rock Corridor needs to increase transit ridership and/or reduce the anticipated capital expenditures required to accommodate commuter rail in the Corridor.

- To continue to build the transit base in the Red Rock Corridor, it is important that the local Red Rock communities plan for transit improvements in the following ways:

    - Station area master planning
    - Updated, transit-supportive comprehensive plans
    - Densification of land use
    - Connectivity between land uses that reduce the need for auto use

- It is important to continue to build the transit base in the Corridor through extending/expanding existing bus service and increasing bus service frequencies, particularly during the peak periods of the day. The success of the Northstar commuter coach program should be considered as a service that could be implemented in the Red Rock Corridor to continue to build the transit base, and attract new transit riders.

- Improve travel speeds for both the express bus and commuter rail service alternatives so that the result is a significant increase in transit ridership.

- The increase in frequency of service, under both the express bus and commuter rail alternatives, results in an increase in transit ridership. Stations in proximity to downtown St. Paul experience the highest increase in ridership.

- As congestion continues to grow on TH 61, auto and bus travel times in the corridor will continue to increase. Specifically, auto commute times from Hastings to St. Paul are projected to increase from 47 minutes in 2005 to 62 minutes in 2030. To maintain beneficial transit travel times in the future, roadway improvements will be required to accommodate competitive express bus service in the corridor.

- The Minnesota Union Depot is projected to be a high transfer location from commuter rail to either bus or LRT service.

- The relatively low increase in ridership projected between downtown Minneapolis and St. Paul on commuter rail is due to the excellent light rail and bus service expected to exist between the tow major downtowns in the corridor. This means Minneapolis bound riders can easily get to their destinations using a transfer from commuter rail to either bus or LRT service at the Minnesota Union Depot. The model shows the transfers from commuter rail to either express buses on I-94 or the programmed Central Corridor LRT line on University, provide comparable travel times and convenience to riding commuter rail all the into downtown Minneapolis. This is primarily due to the fact that commuter rail will make only one stop, at the new intermodal facility on the edge of downtown Minneapolis and most riders will have to add to their overall commute time through walking or transferring to another mode of transit.

- The current ridership forecasts indicate that relatively few riders would access the commuter rail system at the proposed Snelling Avenue and University of Minnesota stations. This can be explained by the proximity to the downtowns, distance from a commuter rail station to likely destinations, and the fact that excellent transit service is already provided in the corridor. However, land use changes are proposed in the Minneapolis SEMI area and within the University of Minnesota could impact ridership potential in the future. Hence, future ridership forecasts and station area planning efforts should continue to evaluate stations between St. Paul and Minneapolis.

- The Red Rock Corridor is part of a regional transit system that includes corridors such as Hiawatha, Northstar, Central, Cedar Avenue, Rush Line and Southwest. The success of the Hiawatha LRT has increased the demand for high quality transit. The Northstar Corridor is planned to open for operation in the fall of 2009. Similar to the Hiawatha LRT, once the Northstar Commuter Rail system is up and operational, the region will have real commuter rail numbers to include in the regional model. It is anticipated that the opening of Northstar will have a net positive impact on the projected commuter rail ridership in the Red Rock Corridor.

- Although high speed rail is not a part of this particular study, the potential improvements that would be required to accommodate high speed rail in this corridor would benefit the Red Rock corridor from a capital cost perspective.

- Commuter rail operating costs, for service between Hastings and St. Paul is estimated at $6.7 million (2007 dollars). In comparison, operating costs for existing bus routes 361 (Cottage Grove

to St. Paul) and 365 (Cottage Grove to Minneapolis) is approximately $1.4 million. The express bus service plan required to be competitive with commuter rail service could be cost-prohibitive from an operating perspective.

- Public interest in the implementation of commuter rail is strong and the public recognizes a need for transit improvements and land use planning to accommodate future transit. Comments received at the open house meetings in 2007 indicated support for not only the implementation of commuter rail in the corridor, but also for interim transit improvements such as express or expanded bus service. There is also interest in exploring a possible extension of the corridor to Red Wing.

- To build the transit base and incorporate the public's interests in the vision for the Corridor, the Red Rock Corridor Commission should regularly communicate about the transit developments in the Corridor and engage the public in dialogue about the immediate, near term and long term implementation plans.

11.2 Decision-Making Process

The findings and recommendations presented in this report have been developed in consultation with the representatives of the Red Rock TAC and presented to the public via the project Web site, newsletters, fact sheets, press releases, individual meetings/presentations and open houses. In addition, coordination with the CP and BNSF railroads has occurred during the AA process to keep them informed of the findings of the AA study, particularly as it relates to the overall project development process and actions proposed within their respective rights-of-way.

The Red Rock Corridor Commission approved the findings and recommendations set forth in the AA at their November 2007 meeting (see Resolution 2007-001 in **Appendix J**).

11.3 Implementation Plan

The results of the AA study indicate that expanding bus service, increasing bus frequency and providing additional park and ride facilities, are the first steps toward building a stronger transit base in the Corridor. This stronger base is a key component in the phasing of Corridor improvements prior to the construction of commuter rail.

An incremental phased approach has been identified to lay the groundwork for eventual commuter and high speed rail in the Red Rock Corridor. This approach has been split into immediate (0-5 year), near-term (6-10 year) and long-term (10-20 year) strategies. **Figure 11-1** illustrates the steps that are planned within each of these phases. Within each, the goal is to build a strong ridership base, plan for the future and consider lessons learned from other rail lines, and outline methods of corridor advocacy that will lead to the ultimate goal of high speed rail.

A summary of the strategies is presented below:

Short Term Strategies

- **Conduct a bus feasibility study to evaluate the costs and benefits of additional bus service in the Red Rock Corridor.** As noted in the previous section, there is a need to continue to expand efficient and reliable transit service in the corridor, particularly during the peak commute periods. The express bus ridership forecasts indicated that as peak period frequency is increased, the ridership increases by over two-fold. Additionally, to better serve the proposed express bus routes from Hastings to the two downtowns, local feeder bus networks should be studied and developed. By increasing transit service and commuting options within the corridor, it will serve to build the transit base towards commuter rail service.

- **Work with municipalities in the corridor so that land use planning accommodates future transit improvements.** Each of the corridor communities are currently in the process of updating their comprehensive plans, as mandated by the Metropolitan Council. Through this process, there is a great opportunity to provide the planning foundation for transit-oriented development in the corridor.

- **Pursue additional park-and-ride facilities.** The expansion, siting, and acquisition of additional right-of-way for new (or expansion of existing facilities) park-and-ride facilities in the corridor would benefit both the express bus and future commuter rail service in the corridor. The development of park-and-ride facilities to first serve express/commuter buses, followed by commuter rail service, is a successful model used in the Northstar Corridor.

- **Evaluate extending the Corridor to Red Wing and the Prairie Island Indian Community.** Goodhue County, the City of Red Wing, and the Prairie Island Indian Community continue to express a strong interest in extending commuter rail service to their communities to serve activity centers. The feasibility of this extension should be studied in greater detail during the next phase of analysis.

- **Advocate for High Speed Rail service from Chicago to Twin Cities.** It is acknowledged that the purpose of high-speed rail is to efficiently move patrons between metropolitan areas like the Twin Cities and Chicago with few stops. In contrast, commuter rail is intended to move commuters to and from the southeast suburbs to downtown St. Paul and Minneapolis. While the two do not serve the same transit purpose, they can share the same track. The implementation of high speed rail in and through the Red Rock corridor could benefit commuter rail in the Corridor by reducing the capital costs. A key piece to making both high speed and commuter rail service a reality in the Red Rock Corridor is the continued partnership with the respective railroads and Amtrak. CP and BNSF Railway staffs have agreed that the Red Rock methodology is a good starting point for determining the costs associated with implementing commuter rail on each respective track system, and Red Rock staff will keep the railroads up-to-date on any changes in status of the project.

Intermediate Strategies

- **Reevaluate commuter rail ridership and cost data after the Northstar Commuter Rail is in operation**. As noted in the previous section, once Northstar Commuter Rail is operational, the region will have actual transit ridership data to incorporate into the regional model. Similar to Hiawatha LRT's impact to Central LRT where ridership rose by almost 5,000, it is anticipated that incorporating Northstar ridership data into the regional model will increase Red Rock Commuter Rail ridership forecasts.

- **Conduct appropriate environmental and engineering work for commuter rail service.** Planning and engineering for a major transit project such as commuter rail service in the Red Rock Corridor typically takes several years to complete. The Commission recognizes that the FTA New Starts process is a competitive process, and one that is ever changing in terms of its requirements. Additionally, it is acknowledged that to enter into the federal environmental and engineering process, the proposed action must receive a favorable rating by the FTA. This rating is based on the Cost Effectiveness Rating (CEI) which takes into account ridership and costs. By continuing to build transit service in the Red Rock Corridor, planning for transit support land uses, and working with the stakeholders to manage costs; the Corridor will be well positioned to continue to move forward with the environmental and engineering work for commuter rail service.

- **Complete the implementation of recommendations from the bus feasibility study.** Again, the goal is to continue to build the transit base in the Corridor to better position its competitiveness for ultimate commuter rail service.

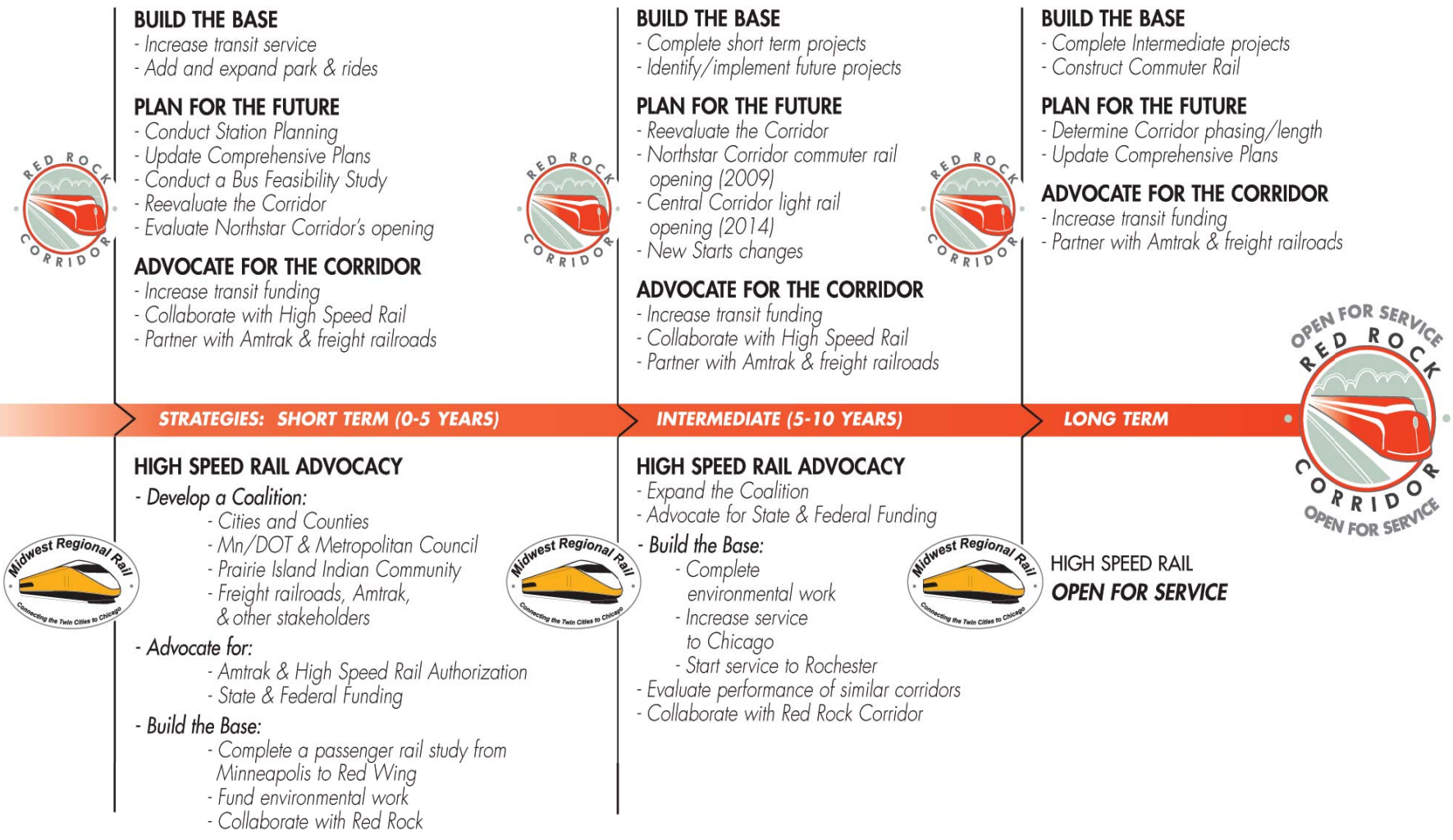
Long Term Strategies

- **Open Service for High Speed Rail.**

- **Construct Red Rock Corridor Commuter Rail.** The implementation of Red Rock Commuter Rail service is part of the overall regional transit system network outlined in both the Mn/DOT and Metropolitan Council studies**.**

Through each phase, the RRCC will regularly relay information pertaining to transit developments in the Corridor and engage the public in dialogue about the immediate, near term, and long term implementation plans. This will help to build the transit base and incorporate the public's interests in the vision for the Corridor.

Figure 11-1: Red Rock Corridor Implementation Plan



APPENDICES

APPENDIX A
Station Area Site Photos

Photo A1-1. Hastings Site 1; historic railroad depot; looking south.

Photo A1-2. Hastings Site 1; railroad crossing; looking east.

Photo A1-3. Hastings Site 1; unimproved parking lot; looking northwest.

Photo B-1. Cottage Grove Site; existing park-and-ride facility; looking northwest.

Photo B-2. Cottage Grove Site; undeveloped land; looking southeast.

Photo B-3. Cottage Grove Site; existing park-and-ride facility; looking southwest.

Photo C-1. Newport Site; Veolia Environmental Services and Onyx Waste Services; looking west.

Photo C-2. Newport Site; back storage area and potential wetland; looking southeast.

Photo C-3. Newport Site; back storage area; looking southwest.

Photo D-1. Lower Afton Road Site; existing park-and-ride facility; looking southwest.

Photo D-2. Lower Afton Road Site; existing park-and-ride facility; looking west.

Photo D-3. Lower Afton Road Site; railroad tracks and unimproved access road; looking northwest.

Photo E-1. Snelling CP Site; Hague Avenue beneath overpass; looking west.