

City of Minneapolis

GRANARY CORRIDOR STUDY

**Granary Corridor
Cost/Benefit Analysis**

FINAL REPORT

PREPARED FOR:
 **Minneapolis**
City of Lakes

PREPARED BY:
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GRANARY CORRIDOR STUDY



Kimley-Horn
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EXECUTIVE SUMMARY

The Granary Corridor from the Minneapolis city limits to I-35W has long been envisioned as a key component to redevelopment for the Southeast Minneapolis Industrial (SEMI) area, a traffic reliever for University Ave SE and 4th St SE, and an opportunity to connect and revitalize underutilized areas of the city. The City of Minneapolis initiated a study to objectively evaluate the benefits and costs of making improvements to the Granary Corridor. The goal of the Cost/Benefit Analysis was to identify and document the benefits and costs of various alternatives for the Granary Corridor, considering the needs and desires of each of the stakeholder agencies, neighborhood residents and businesses, and the traveling public. The results of the study are intended to be used to assist decision makers in determining the appropriate future steps in the development of the Granary Corridor project.

The study was conducted in two phases. In Phase 1, alternatives screening was necessary to narrow more



than 20 potential alternatives to a smaller number of options while still encompassing the range of possible improvements in the corridor. Seven categories of evaluation criteria were established to capture the many different aspects of potential benefits and impacts: Vehicular Traffic, Other Modes (Ped/Bike/Transit), Railroad, Livability, Environmental Quality, and Plan Consistency. Stakeholder input in Phase 1 was used to gain consensus on the alternatives to move forward to the Phase 2 analysis, refine the evaluation criteria, and identify priorities.

Phase 2 of the study was focused on more detailed analysis of the six alternatives that moved forward from the Phase 1 screening. The Cost/Benefit Analysis was conducted by quantifying the benefits and impacts of each alternative with respect to the seven evaluation categories and 26 individual evaluation criteria. Each alternative was first scored according to the evaluation criteria and the summary scores for each alternative were then compiled, interpreted, and discussed with stakeholders. At the same time, cost estimates including construction, environmental clean-up, right-of-way acquisition, and indirect costs were developed for each alternative.

Stakeholder involvement in Phase 2 was used to influence the weighting and scoring of the evaluation criteria, develop the greenway sub-alternatives, and review the results of scoring for reasonableness. The most common concerns expressed by community members throughout the project were regarding increased traffic, especially truck traffic, on 2nd St SE, Main St SE, and local streets in the Marcy-Holmes and Nicollet Island East Bank neighborhoods as a result of the Full Build alternative.

Layouts and illustrative sections of the six alternatives and two sub-alternatives, along with the total evaluation scores



and project costs, are shown in **Figures ES-1 to ES-6**. The key findings from the evaluation process are summarized in **Tables ES-1 and ES-2** and in the following bullets:

- While a roadway in the Granary Corridor has been envisioned as a traffic reliever for the area, the maximum reductions in 2030 daily traffic on University Ave SE/4th St SE would be expected to be 15 to 20 percent, or about a two minute travel time savings in the 2030 PM peak hour.
- The more improvements and investments that are made in the corridor (e.g., constructing three segments rather than only one segment), the greater the benefits that are realized. This is a generally expected result for a corridor that is currently underused and undeveloped.
- Although the five alternatives that include improvements for the full length of Granary Corridor (Full Build, SEMI Access with Extended Full Greenway, SEMI Access with Extended Reduced Greenway, SEMI Access

Plus with Full Greenway, and SEMI Access Plus with Reduced Greenway) have some significant differences among them, the total scores were within a few points of each other.

• The evaluation categories that showed the most differentiation among categories were Vehicular Traffic, Livability, and Economic Development. While the roadway alternatives scored highest for Vehicular Traffic, they also had some impacts that resulted in lower Livability scores. The greenway alternatives clearly had the highest scores in the Livability category, but were not shown to relieve traffic congestion in the study area.

Each of the segments of Granary Corridor requires significant right-of-

way acquisition, which in turn significantly impacts the project costs. The Limited Build alternative has the highest cost/benefit ratio based on its relatively low cost compared to the other alternatives. Of the five full length alternatives, the SEMI Access with Extended Reduced Greenway was calculated as the most cost effective, based largely on the reduced right-of-way width and corresponding costs. In general, the Reduced Greenway alternatives were shown to have nearly the same benefits of the Full Greenway alternatives, but at significantly lower costs.

Due to the significant cost of each of the alternatives and the challenges associated with right-of-way acquisition in this area, the partnership, cooperation, and resources of multiple stakeholders will be needed if any of the alternatives are to be advanced. Key stakeholders include the University of Minnesota, Hennepin County, Minneapolis Park and Recreation Board, the City of Saint Paul, Metropolitan Council and others. The City of Minneapolis intends to continue discussions about the Granary Corridor to take advantage of potential future opportunities and to actively plan for the future of the corridor.

Figure ES-1. Limited Build Alternative



Figure ES-2. SEMI Access Alternative



Figure ES-3. SEMI Access Plus Alternative

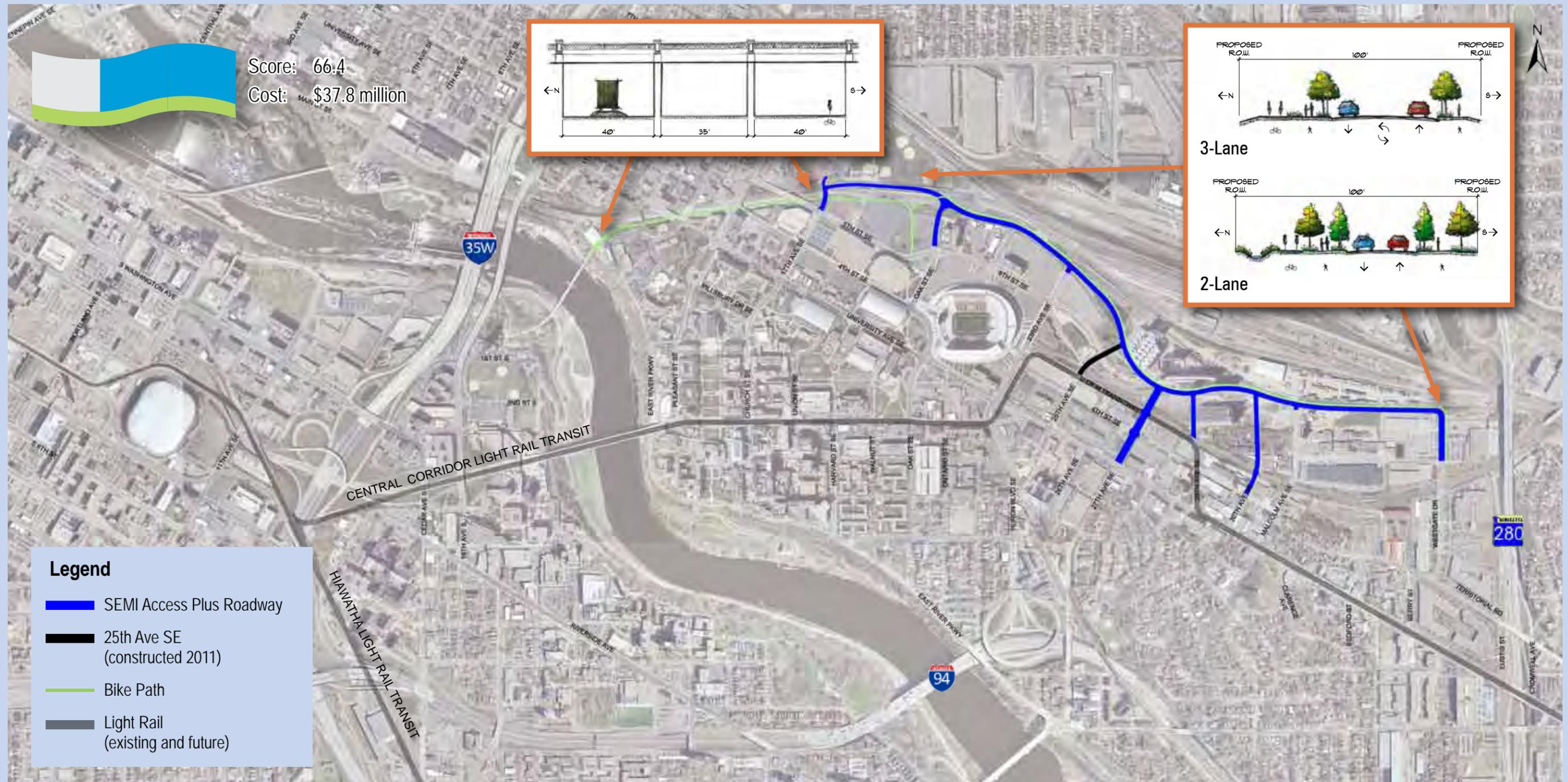


Figure ES-4. Full Build Alternative

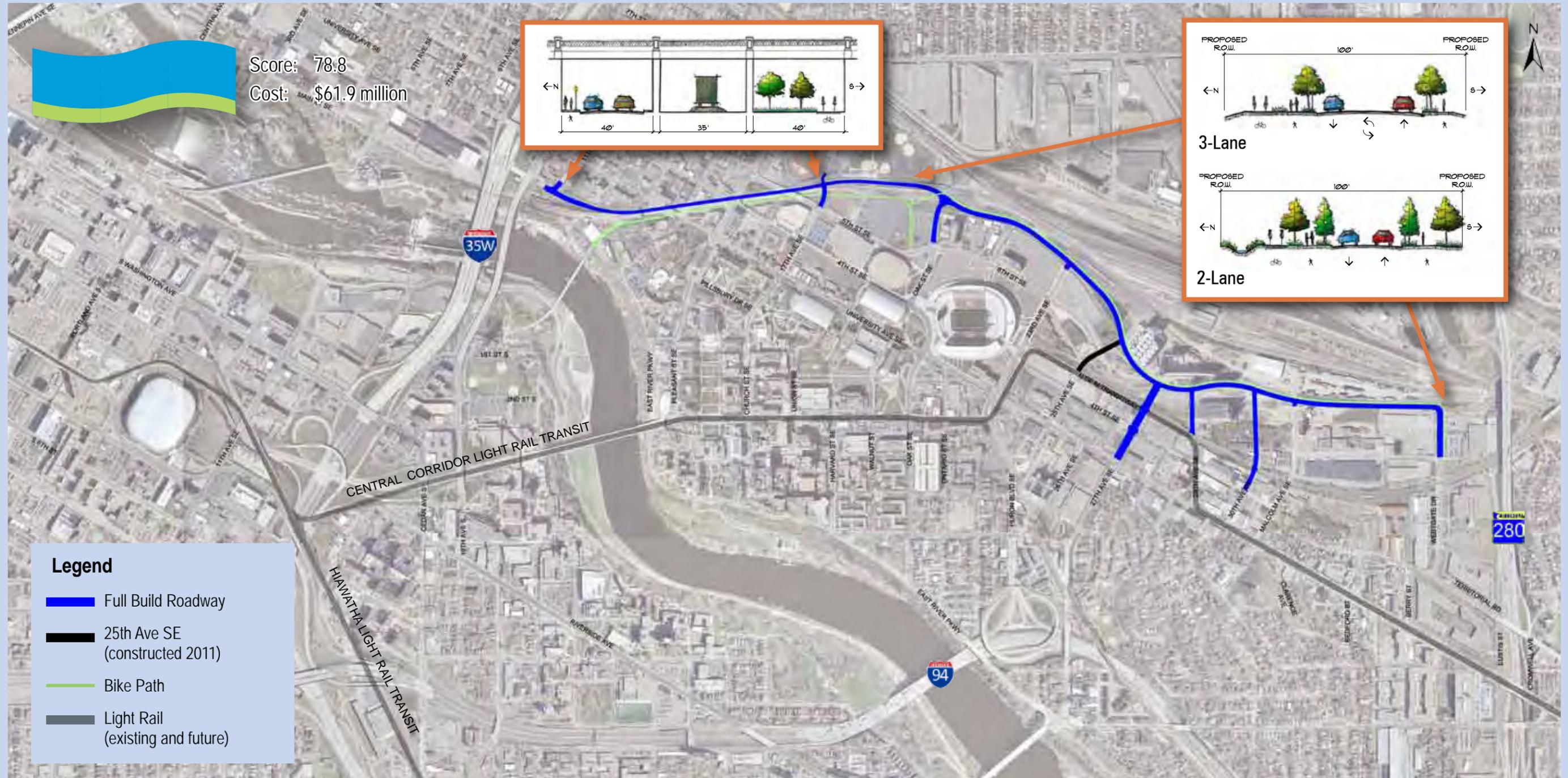


Figure ES-5. SEMI Access with Extended Greenway Alternatives

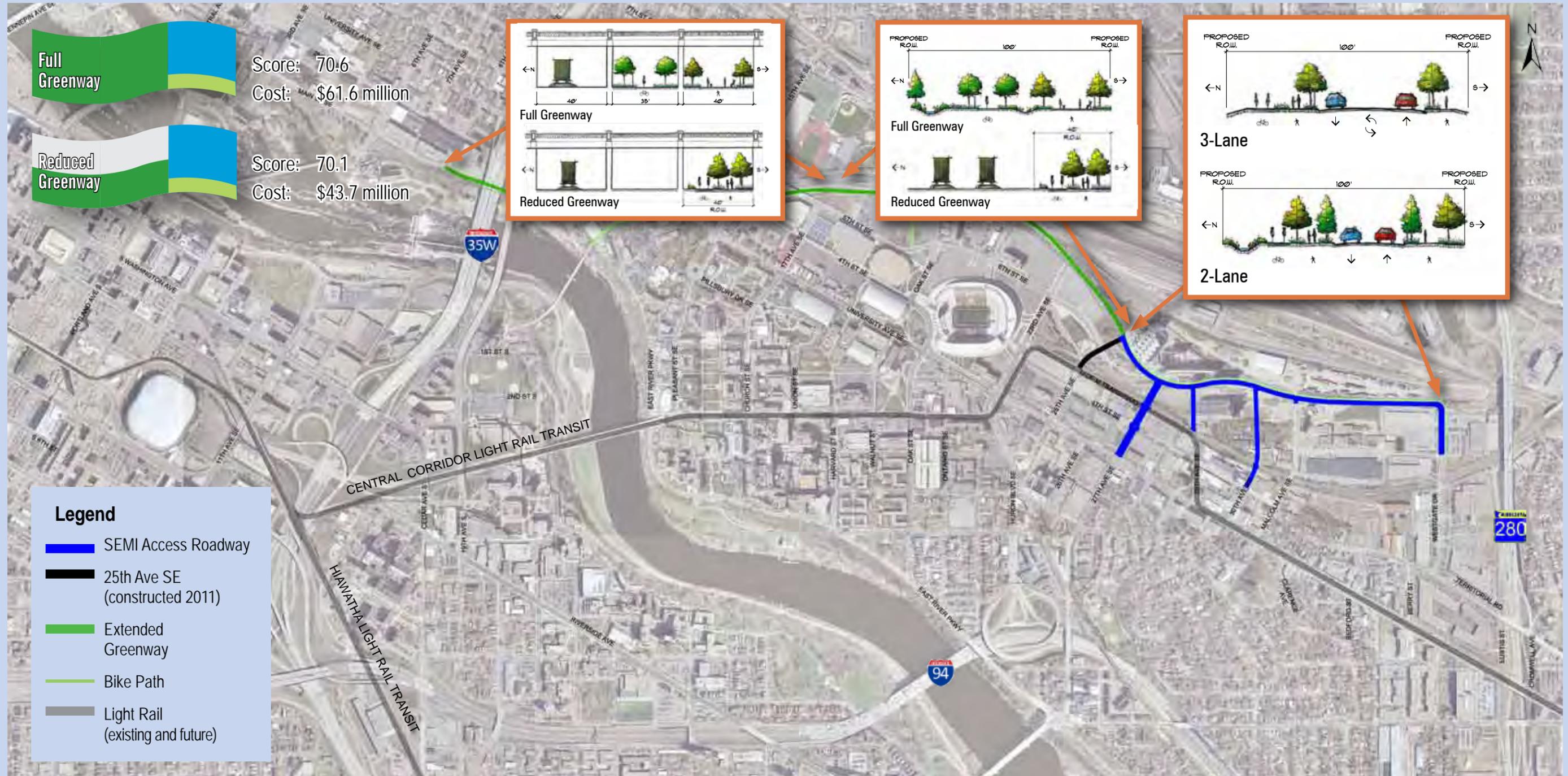
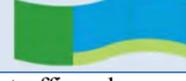


Figure ES-6. SEMI Access Plus with Greenway Alternatives



Table ES-1. Alternatives Evaluation Findings

	Limited Build	SEMI Access	SEMI Access Plus	Full Build	SEMI Access with Extended Greenway		SEMI Access Plus with Greenway	
					SEMI Access Extended Full Greenway 	SEMI Access Extended Reduced Greenway 	SEMI Access Plus Full Greenway 	SEMI Access Plus Reduced Greenway 
Benefits	<p>Daily traffic volumes on University Ave SE and 4th St SE = 27,000-45,500 vehicles per day</p> <p>5 key intersections operate at LOS E/F during 2030 peak hours</p> <p>9.9 min travel time from TH 280 to I-35W in 2030 PM peak 4,000 feet of trail</p> <p>Limited green space</p> <p>Vehicle access to 6 redevelopment parcels</p> <p>Land use projections = 220 households and 700 jobs</p>	<p>Daily traffic volume reduced: 3,000 vehicles on University Ave SE, Huron Blvd to TH 280 (-13%)</p> <p>1 intersection on University Ave SE improves from LOS E to LOS C in 2030 PM peak</p> <p>0.9 min travel time savings from TH 280 to I-35W in 2030 PM peak 8,000 feet of trail</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>3.8 acres green space</p> <p>Vehicle access to 12 redevelopment parcels</p> <p>Land use projections = 550 households and 1,750 jobs</p>	<p>Daily traffic volume reduced: 3,500 vehicles on University Ave SE, Huron Blvd to TH 280 (-15%) 1,000 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd (-2%)</p> <p>2 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>1.0 min travel time savings from TH 280 to I-35W in 2030 PM peak 11,000 feet of trail</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>7.8 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 4 University parcels</p> <p>Land use projections = 690 households and 2,650 jobs</p>	<p>Daily traffic volume reduced: 4,000 vehicles on University Ave SE, Huron Blvd to TH 280 (-17%) 2,500 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd (-6%) 5,500 vehicles on University Ave SE/4th St SE, I-35W to 17th Ave SE (-12%)</p> <p>3 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>2.0 min travel time savings from TH 280 to I-35W in 2030 PM peak 11,000 feet of trail</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>9.9 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 7 University parcels</p> <p>Land use projections = 1,330 households and 4,500 jobs</p>	<p>Daily traffic volume reduced: 3,000 vehicles on University Ave SE, Huron Blvd to TH 280 (-13%)</p> <p>1 intersection on University Ave SE improves from LOS E to LOS C in 2030 PM peak</p> <p>0.9 min travel time savings from TH 280 to I-35W in 2030 PM peak 4,000 feet of trail 8,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>14.9 acres green space</p> <p>Vehicle access to 12 redevelopment parcels</p> <p>Land use projections = 980 households and 3,400 jobs</p>	<p>Daily traffic volume reduced: 3,000 vehicles on University Ave SE, Huron Blvd to TH 280 (-13%)</p> <p>1 intersection on University Ave SE improves from LOS E to LOS C in 2030 PM peak</p> <p>0.9 min travel time savings from TH 280 to I-35W in 2030 PM peak 4,000 feet of trail 8,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>7.5 acres green space</p> <p>Vehicle access to 12 redevelopment parcels</p> <p>Land use projections = 980 households and 3,400 jobs</p>	<p>Daily traffic volume reduced: 3,500 vehicles on University Ave SE, Huron Blvd to TH 280 (-15%) 1,000 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd (-2%)</p> <p>2 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>1.0 min travel time savings from TH 280 to I-35W in 2030 PM peak 7,000 feet of trail 5,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>13.5 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 4 University parcels</p> <p>Land use projections = 1,010 households and 3,580 jobs</p>	<p>Daily traffic volume reduced: 3,500 vehicles on University Ave SE, Huron Blvd to TH 280 (-15%) 1,000 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd (-2%)</p> <p>2 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>1.0 min travel time savings from TH 280 to I-35W in 2030 PM peak 7,000 feet of trail 5,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>9.7 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 4 University parcels</p> <p>Land use projections = 1,010 households and 3,580 jobs</p>
Impacts	Requires 0.2 acres of railroad right-of-way	Requires 4.1 acres of railroad right-of-way	Requires 9.6 acres of railroad right-of-way	Requires 13.8 acres of railroad right-of-way At-grade rail crossing near 17 th Ave SE Traffic volumes increased 1,500-2,000 vehicles per day on 2 nd St SE, 8 th Ave SE, and 11 th Ave SE	Requires 16.1 acres of railroad right-of-way	Requires 8.9 acres of railroad right-of-way	Requires 16.1 acres of railroad right-of-way	Requires 11.7 acres of railroad right-of-way
	Cost \$5.5 million	Cost \$21.8 million	Cost \$37.8 million	Cost \$61.9 million	Cost \$61.6 million	Cost \$43.7 million	Cost \$62.8 million	Cost \$52.3 million

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Table ES-2. Alternatives Evaluation Scoring and Cost/Benefit Summary

Evaluation Category	Limited Build	SEMI Access	SEMI Access Plus	Full Build	SEMI Access with Extended Greenway		SEMI Access Plus with Greenway	
					Full Greenway	Reduced Greenway	Full Greenway	Reduced Greenway
Vehicular Traffic (24 points)	7.9	13.6	16.9	20.4	13.7	14.0	16.7	17.0
Other Modes (Ped/Bike/Transit) (13 points)	2.8	5.9	8.8	10.1	11.3	10.7	10.8	10.6
Railroad (5 points)	4.9	3.8	2.2	1.0	1.0	2.6	1.0	1.6
Livability (24 points)	10.4	11.8	15.5	16.3	20.5	18.9	20.6	19.9
Economic Development (24 points)	5.0	9.8	16.3	22.8	17.3	17.3	19.2	19.2
Environmental Quality (5 points)	2.7	3.0	3.0	3.3	3.2	3.1	3.2	3.1
Plan Consistency (5 points)	1.0	2.2	3.7	4.9	3.6	3.5	4.2	4.1
TOTAL (100 Points)	34.7	50.1	66.4	78.8	70.6	70.1	75.7	75.5
Total Project Cost (millions)	\$5.5	\$21.8	\$37.8	\$61.9	\$61.6	\$43.7	\$62.8	\$52.3
Cost Per Point (millions)	\$0.16	\$0.44	\$0.57	\$0.79	\$0.87	\$0.62	\$0.83	\$0.69

1 INTRODUCTION

A roadway concept in the Granary Corridor has been included in City of Minneapolis planning documents for more than 20 years. Granary Corridor is generally defined as an east-west corridor parallel to University Ave SE that extends from TH 280 to I-35W along the Burlington Northern Santa Fe (BNSF) railroad mainline. While multiple studies have been conducted and the project is shown in the City's 2012-2016 Capital Improvement Plan, no segments of the Granary alignment have yet been constructed. In 2008, discussions regarding the Granary Corridor intensified due to the proposed design of the Washington Avenue Transit Mall, which would close a portion of Washington Ave SE to all traffic except light rail, bus, and emergency vehicles as part of the Central Corridor light rail transit (LRT) project. As a result of the agreement to proceed with the Washington Avenue Transit Mall, the City of Minneapolis, Hennepin County, University of Minnesota, and the Metropolitan Council committed to further study the future of the Granary Corridor.¹

In March 2011, the City of Minneapolis initiated a study to objectively evaluate the benefits and costs of making improvements to the Granary Corridor. The goal of the Cost/Benefit Analysis was to identify and document the benefits and costs of various alternatives for the Granary Corridor, considering the needs and desires of each of the stakeholder agencies, neighborhood residents and businesses, and the traveling public. The results of the study are intended to be used to assist decision makers in determining the appropriate future steps in the development of the Granary Corridor project.

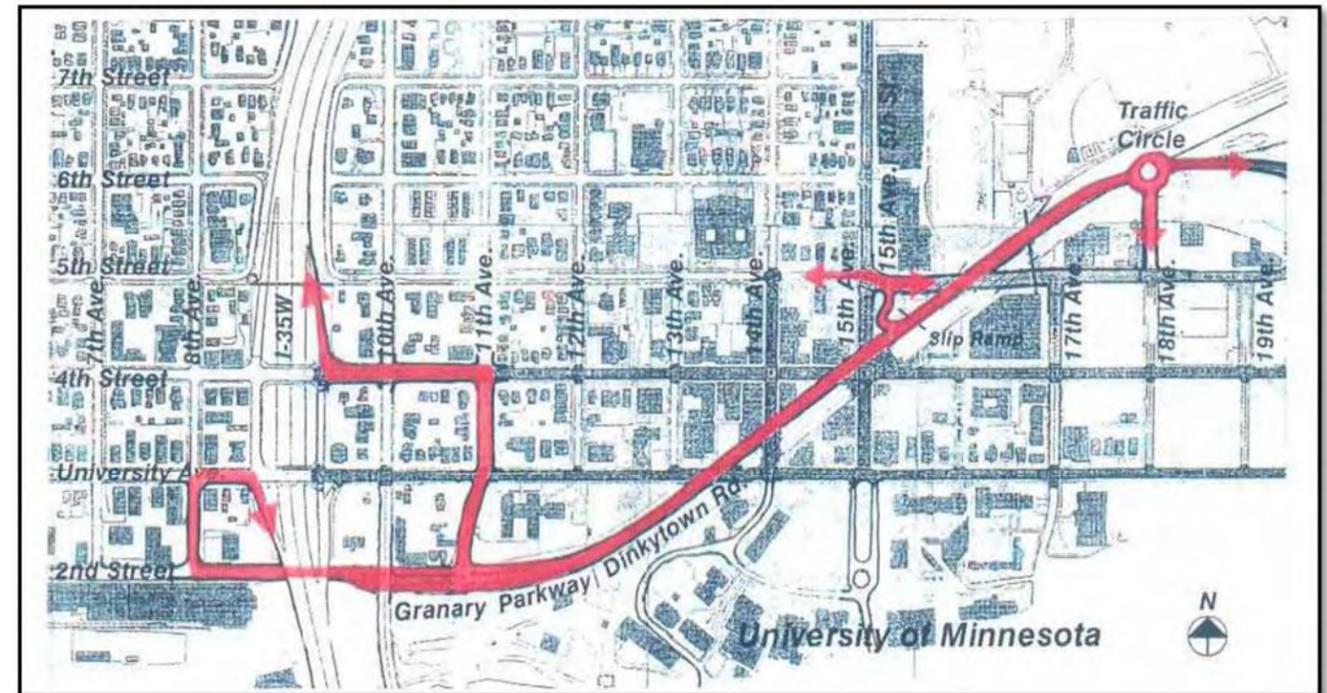
1.1 HISTORY

A vision for the Granary Corridor was originally established as part of the planning for redevelopment of a 700-acre area of land bounded by University Ave

SE, TH 280, the BNSF mainline, Elm St SE, and 15th Ave SE, which is known as the Southeast Minneapolis Industrial (SEMI) area. The SEMI area lies within the Cities of Minneapolis and Saint Paul, and is surrounded by the University of Minnesota, residential neighborhoods, and the Dinkytown and Stadium Village commercial areas. This area has historically been the site of railroad activity, grain storage, automotive recycling and wood creosoting. However, by the year 2000 many of these activities had declined or ended altogether, turning a once-successful industrial area into a collection of brownfield sites. Although the SEMI area offers a prime location relative to redevelopment, it also has several significant barriers and challenges: the need for remediation of polluted sites; the need for demolition of obsolete and abandoned buildings, including grain elevators; and the need for significant roadway and stormwater infrastructure improvements.

In May 2001, an Alternative Urban Areawide Review (AUAR) and a Refined Master Plan were prepared to focus on the Southeast Minneapolis Industrial (SEMI)/Bridal Veil area. The framework for redevelopment and revitalization was outlined conceptually, with the goal being a transformed and enhanced economic development landscape for the SEMI area. As part of the SEMI AUAR, new transportation infrastructure was recommended to support the redevelopment of the area since very little infrastructure currently exists within the area. These improvements included strong emphasis on the creation of Granary Parkway, linking it to a new roadway in the Dinkytown trench, and extending existing streets to intersect with Granary Parkway. This network of proposed infrastructure was intended to "create recognizable and understandable urban blocks"², provide access to properties for redevelopment purposes, and relieve traffic congestion on other roadways in the area, such as University Ave SE.

² SEMI Refined Master Plan, City of Minneapolis and Minneapolis Community Development Agency, May 2001, p 22.



Source: Southeast Minneapolis Industrial/Bridal Veil Refined Master Plan, City of Minneapolis, 2001

A number of other studies have been completed that reference planned infrastructure in the Granary Corridor or include discussion of the SEMI study area:

- The Minneapolis Plan for Sustainable Growth, City of Minneapolis, 2009
- Mississippi River Critical Area Plan, City of Minneapolis, 2006
- Industrial Land Use Study and Employment Policy Plan, City of Minneapolis, 2006
- Analysis of Rail Operations in the Granary Road Corridor, City of Minneapolis, 2010
- East River Parkway Extension Concept Study, City of Minneapolis, 1999
- University Avenue SE/29th Avenue SE Transit Corridor Development Objectives, City of Minneapolis, 2005
- Westgate Station Area Plan, City of Saint Paul, 2008
- Comprehensive Plan 2007-2020, Minneapolis Park and Recreation Board, 2007
- Grand Rounds – Missing Link Development Study Report, Minneapolis Park and Recreation Board, 2008
- 15th Avenue SE Urban Design Plan, Marcy-Holmes Neighborhood Association, 2008
- Master Plan, Marcy-Holmes Neighborhood Association, 2003
- Neighborhood Revitalization Program, Prospect Park East River Road Improvement Association, 2005
- Neighborhood Revitalization Program, Southeast Como Improvement Association, 2006
- Multimodal Traffic Study of Stadium Village Intermodal Transportation Center, University of Minnesota, 2010
- Twin Cities Campus Master Plan, University of Minnesota, 2009

¹ Central Corridor Washington Avenue Transit Mall Memorandum Of Understanding, 2008.



- 2007-2009 Progress Report, University District Alliance, 2009
- U of M Minneapolis Area Neighborhood Impact Report, University District Alliance, 2008
- Toward an Urban Design Framework for the University District, University District Alliance (undated)
- Transforming the Materiality of the Void: Realizing the Urban Vitality of Granary Corridor, University District Alliance, 2010

A summary of these past studies in the project area is included in the *Granary Corridor Summary of Background Information* available from the City of Minneapolis.

Since the completion of the AUAR, the City of Minneapolis has pursued funding and construction of portions of roadway in or connecting to the Granary Corridor:

- Construction of Malcolm Ave SE from 5th St SE to the future connection with Granary Road – completed 2010.
- Construction of 25th Ave SE from the University of Minnesota Transitway to the future connection with Granary Road – completed 2011.
- Construction of the University of Minnesota trail (Phase 3) from Bridge 9 to 5th St SE – planned for construction in 2012.
- Award of \$7 million in federal Surface Transportation Program (STP) funds for construction of Phase 2 of Granary Road from 25th Ave SE to 17th Ave SE in the 2013 fiscal year.

1.2 PROJECT PROCESS

The study area for the current study extends significantly beyond the SEMI area, in order to fully capture the potential benefits and impacts of the alternatives considered for the Granary Corridor. As shown in **Figure 1**, the study area is bounded by TH

280 to the east, Central Ave (TH 65) to the west, Franklin Ave to the south, and Como Ave to the north.

The project was divided into two overall phases, as shown in **Figure 2**. The Preliminary Screening phase was used to develop the 15 potential alternatives and narrow them down to seven alternatives that moved forward into the Cost/Benefit Analysis. The Cost/Benefit Analysis phase involved the more detailed analysis and scoring of each alternative, as well as cost estimating, used to develop a cost/benefit ratio for each alternative. The screening and evaluation processes are discussed in greater detail in Sections 2 and 3 of this report.



Stormwater features are part of the SEMI Master Plan, including this pond near the newly constructed 25th Ave SE extension.

1.3 COMMUNITY INVOLVEMENT

At the start of the Cost/Benefit Analysis, a Project Management Team (PMT) was formed that consisted of representatives of the following stakeholder organizations:

- City of Minneapolis: Public Works Department, City of Minneapolis Community Planning and Economic Development Department, and City Council
- Hennepin County: Public Works Department
- University of Minnesota: Capital Planning and Project Management
- Minneapolis Park and Recreation Board
- University District Alliance
- Neighborhood Associations

The purpose of the PMT was to review and provide input to the analysis, facilitate communication and share project information with their respective agencies, and guide the community involvement process.

In addition to regular PMT meetings, stakeholder workshops were held in July 2011 and November 2011 and a community meeting was held in May 2012. The workshops were opportunities for the PMT to present the project to a wider group of stakeholders, share project data and progress, and gather input on project issues and priorities. Stakeholders from the following organizations were invited to participate in the workshops:

- City of Saint Paul: Public Works Department, Planning and Economic Development Department
- Metropolitan Council: Central Corridor LRT Project Office
- University of Minnesota: Transportation and Parking Services, Capital Planning and Project Management, University Services
- Minneapolis Park and Recreation Board: Planning Services
- Minneapolis Riverfront Partnership
- SEMI area land owners
- Minnesota Science Park
- Stadium Village Commercial Association
- Southeast Business Association
- Dinkytown Business Association
- Prospect Park East River Road Improvement Association
- Marcy-Holmes Neighborhood Association
- Southeast Como Improvement Association
- Nicollet Island East Bank Neighborhood Association

The community meeting was used to present the study process and results to a wider audience and was open to the public. Public comments on the project received through the end of June 2012 have been documented in this report.



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Figure 1. Project Area

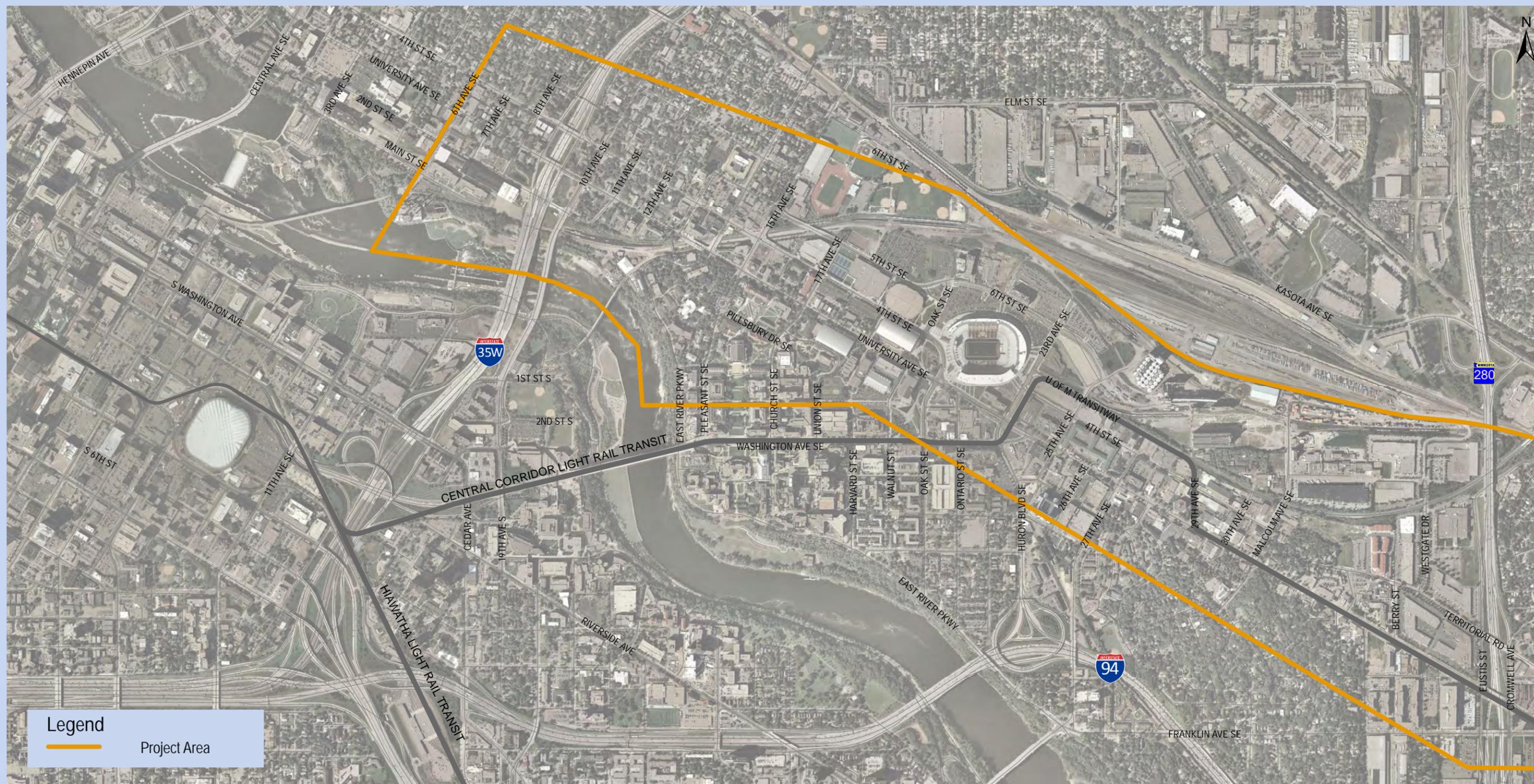
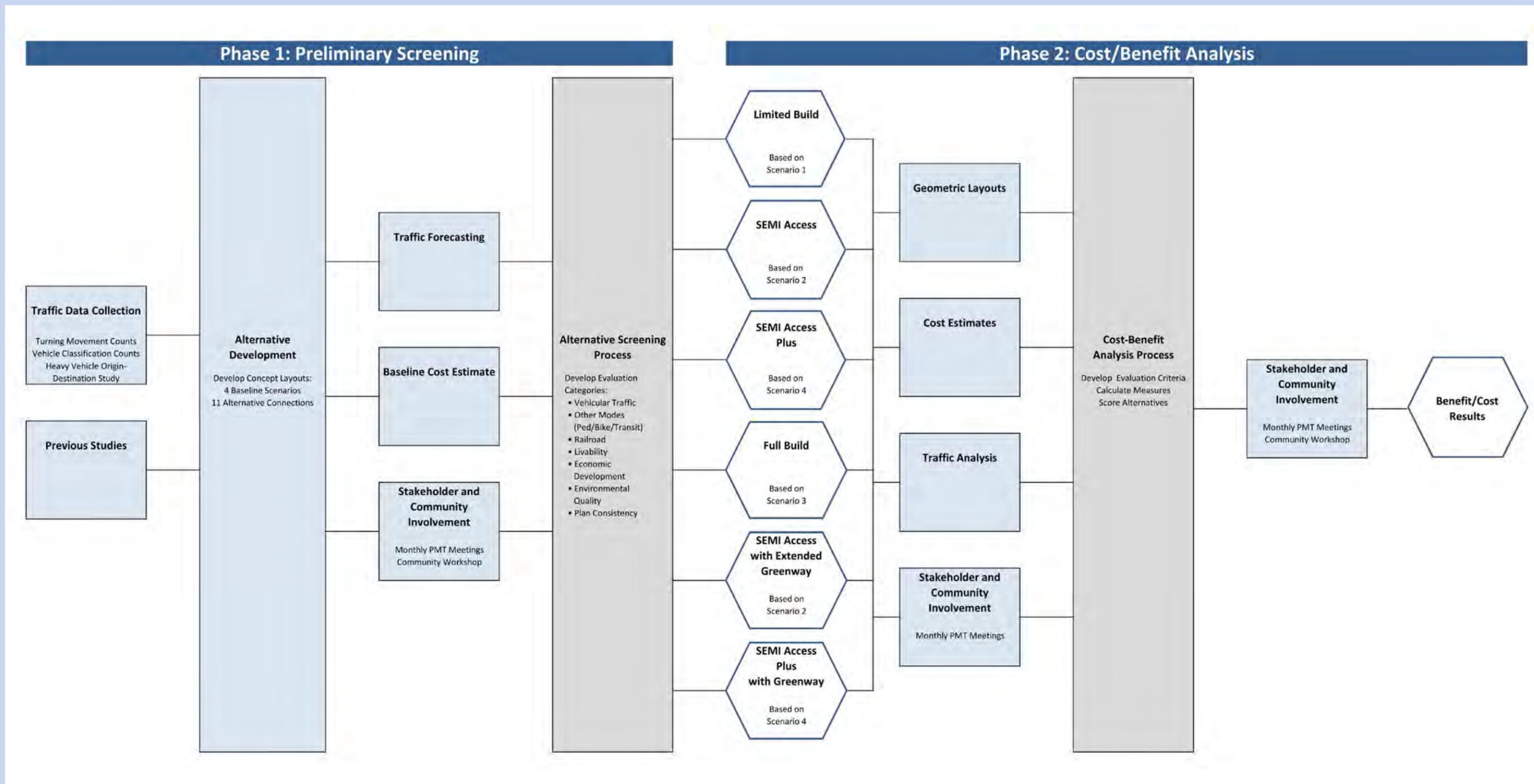




Figure 2. Project Process



2 PHASE 1: PRELIMINARY SCREENING

The purpose of Phase 1 was to establish traffic and cost data for the four baseline alternatives, as well as to screen the multiple design alternatives and to create a smaller number of options to move into the detailed analysis of Phase 2.

2.1 DATA COLLECTION

To evaluate the potential alternatives for the Granary Corridor, significant quantities of data were collected and assembled. The types, sources, and methodologies used in the data collection efforts are described in the following sections.

2.1.1 Traffic Counts

Daily roadway traffic volumes and intersection turning movement data for the weekday morning (AM) and afternoon (PM) peak hours were obtained from the City of Minneapolis and from modeling work recently completed for the Central Corridor LRT project. All counts were obtained prior to the start of major construction on the Central Corridor LRT line, including the closure of Washington Ave SE between Pleasant Ave SE and Walnut St SE. A summary of the daily traffic volumes and the locations where turning movement count data was gathered are provided in **Figure 3**.

In addition to the existing count data, an origin-destination study was completed to capture through truck traffic in the road network between I-35W and TH 280. The purpose of the origin-destination study was to estimate the volume of through truck traffic in the existing University Ave SE/4th St SE corridors that therefore may want to use the Granary Corridor as an alternate route to access the regional highway system.

The origin-destination study was conducted between 7:00 AM and 5:00 PM in May 2011. The hours of the study were chosen based on truck traffic patterns, which typically occur earlier in the day and do not extend into or past the PM peak hour. The study was conducted by recording truck license plate numbers at

each data collection point and then matching the license plate numbers between origins and destinations. An average travel time between each origin-destination pair was used to evaluate whether a truck had made a stop within the network. For example, if the average travel time was 5 minutes, but a truck took 15 minutes to travel the route, then it was assumed the truck had a destination within the study area and would be unlikely to utilize a new roadway within the Granary Corridor for its trip. Trucks that were recorded as both entering and exiting the study area within the expected time were considered “through” traffic. The origin-destination data collection stations, the results of the origin-destination analysis, and existing daily heavy vehicle volumes are shown on **Figure 4**.

2.1.2 Infrastructure Data

In addition to traffic data, other mapping and infrastructure data was assembled for the project, including the following:

- 25th Ave SE design plans
- Previously developed concept layouts for Granary Road
- Right-of-way mapping
- Topographic mapping
- Aerial photography
- Existing bridge plans for the trench section from 17th Ave SE to I-35W
- Existing roadway plans
- Existing utility plans
- Proposed drainage plans and concepts

This data was used both in assessing the feasibility of the alternatives in Phase 1 and further development of the alternatives in Phase 2.

2.2 ALTERNATIVES DEVELOPMENT

The purpose of the preliminary analysis was twofold: generate multiple layouts and design alternatives for the Granary Corridor, and then narrow the options to a smaller group that could be evaluated in more detail.

2.2.1 Baseline Scenarios

The four options identified as Baseline scenarios for Granary Corridor were based on past studies and proposed phasing of roadway construction. Historically, roadway construction in the Granary Corridor has been divided into three segments:

- East Phase/Phase 1 – Malcolm Ave SE to 25th Ave SE
- Middle Phase/Phase 2 – 25th Ave SE to 17th Ave SE
- West Phase/Phase 3 – 17th Ave SE to I-35W

The Baseline alternatives assume construction of some or all phases of the roadway, as well as one alternative that includes a greenway with no vehicular traffic in that segment. Within each of the Baseline scenarios, it is assumed construction would be phased over time. The purpose of Baseline Scenarios 2 and 4 was to analyze the benefits and impacts if a roadway was not constructed through the entire corridor. The Baseline alternatives are displayed in **Figures 5-8** and described in the following bullets.

- **Scenario 1** is a “Limited Build” option, with no roadway segments in the Granary Corridor itself. However, 27th Ave SE, 29th Ave SE, and 30th Ave SE would be extended into the SEMI area to provide improved parcel access and allow for redevelopment. Also included in this scenario is the construction of the University of Minnesota trail from Bridge 9 to 5th St SE/6th St SE. The purpose of Scenario 1 is to serve as a basis of comparison for the other scenarios. The roadway and trail improvements included in Scenario 1 are also part of all the scenarios considered.
- **Scenario 2** includes construction of Phase 1 of Granary Road and extends the roadway east to the Minneapolis city limits. The purpose of this scenario would be to further encourage redevelopment in the SEMI area and also to reduce local SEMI area traffic from University Ave SE.

- **Scenario 3** involves the construction of all three phases of Granary Road, extending to the Minneapolis city limit on the east end and connecting to 2nd St SE on the west end. The existing 2nd St SE/1st Ave SE would be eliminated in this scenario, creating a cul-de-sac on 11th Ave S north of Granary Road.
- **Scenario 4** is based on the proposal of the University District Alliance to construct a greenway section with no vehicular traffic on the west end of the corridor. The roadway section would extend from the Minneapolis city limits to Oak St SE, and the greenway would start at 17th Ave SE and connect to Main St SE. The greenway segment was assumed to include trail and sidewalk, but no vehicular traffic or transit vehicles.



Source: *Discovering the Future of Granary Corridor*, Metropolitan Design Center, 2010

Figure 3. Existing Traffic Volumes

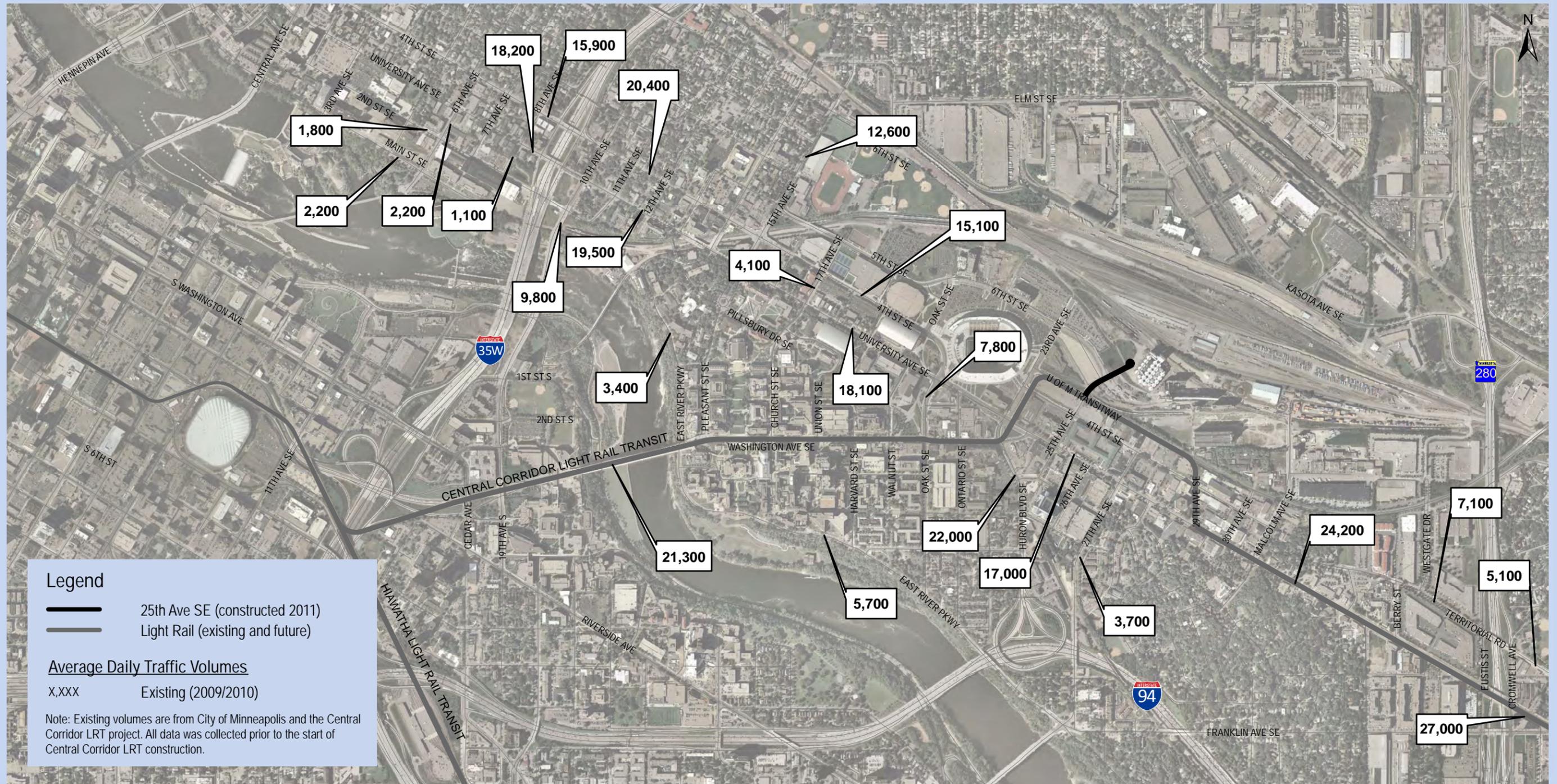


Figure 4. Heavy Vehicle Origin-Destination Data

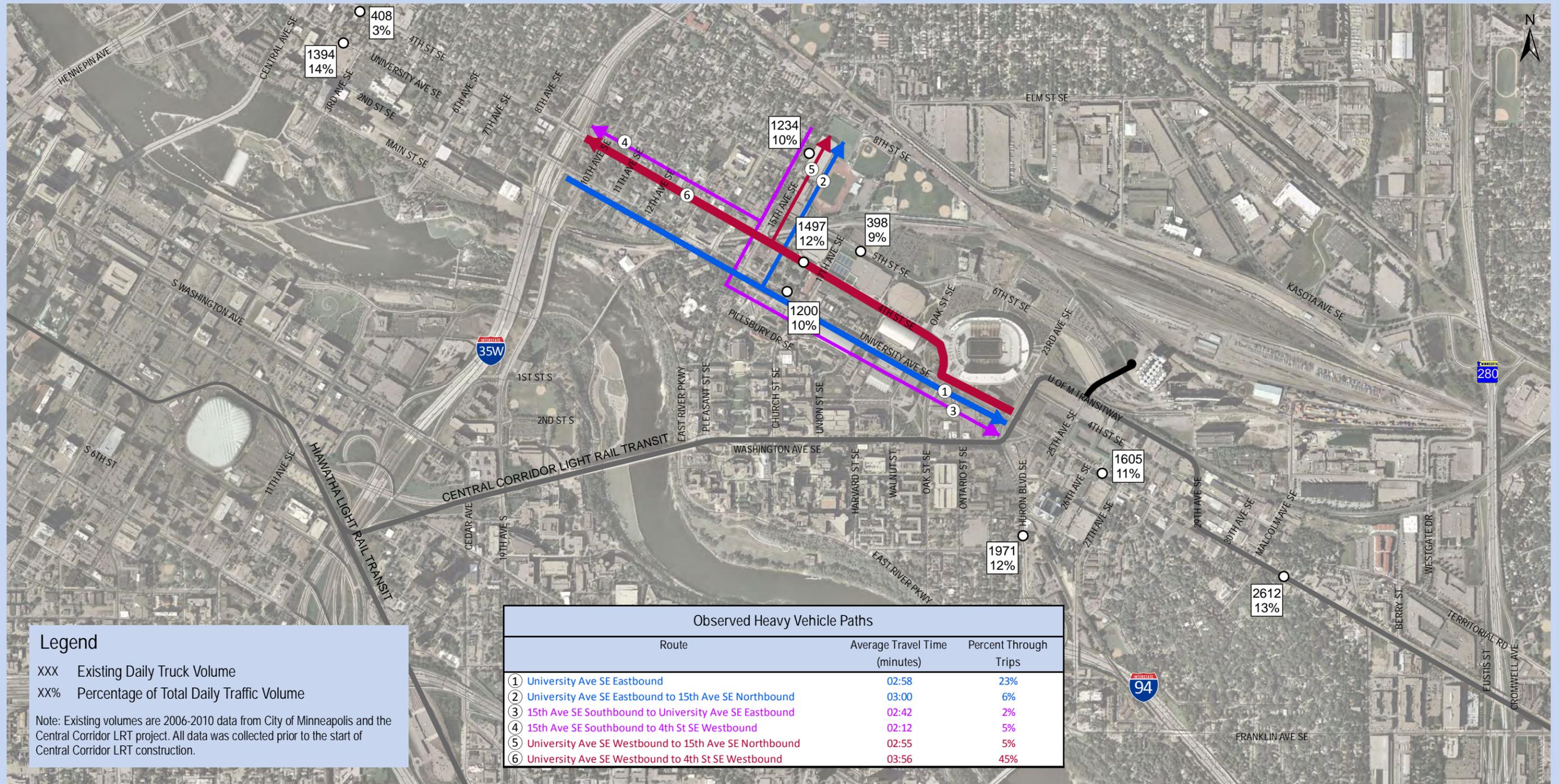


Figure 5. Baseline Scenario 1



Figure 6. Baseline Scenario 2

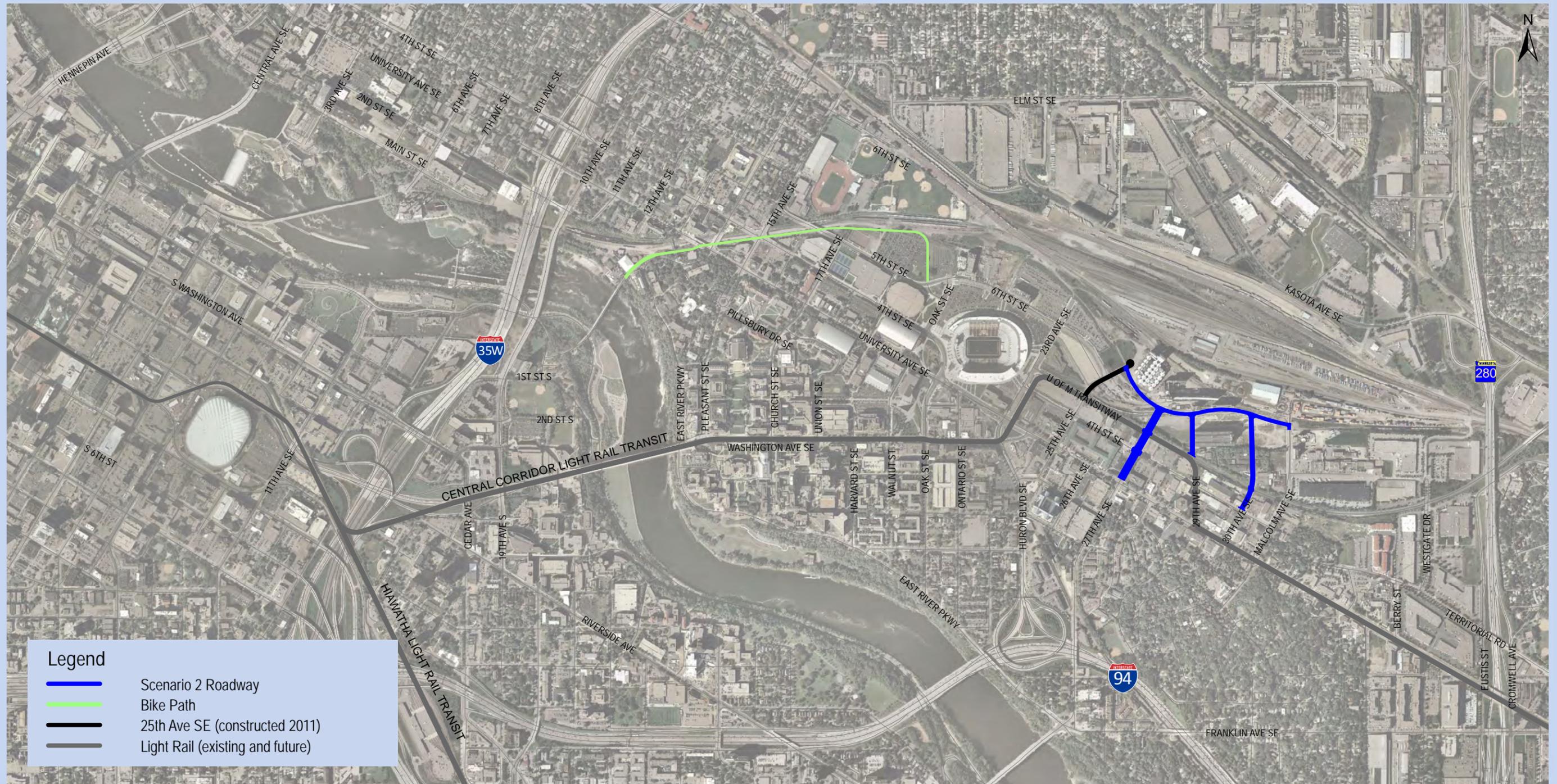
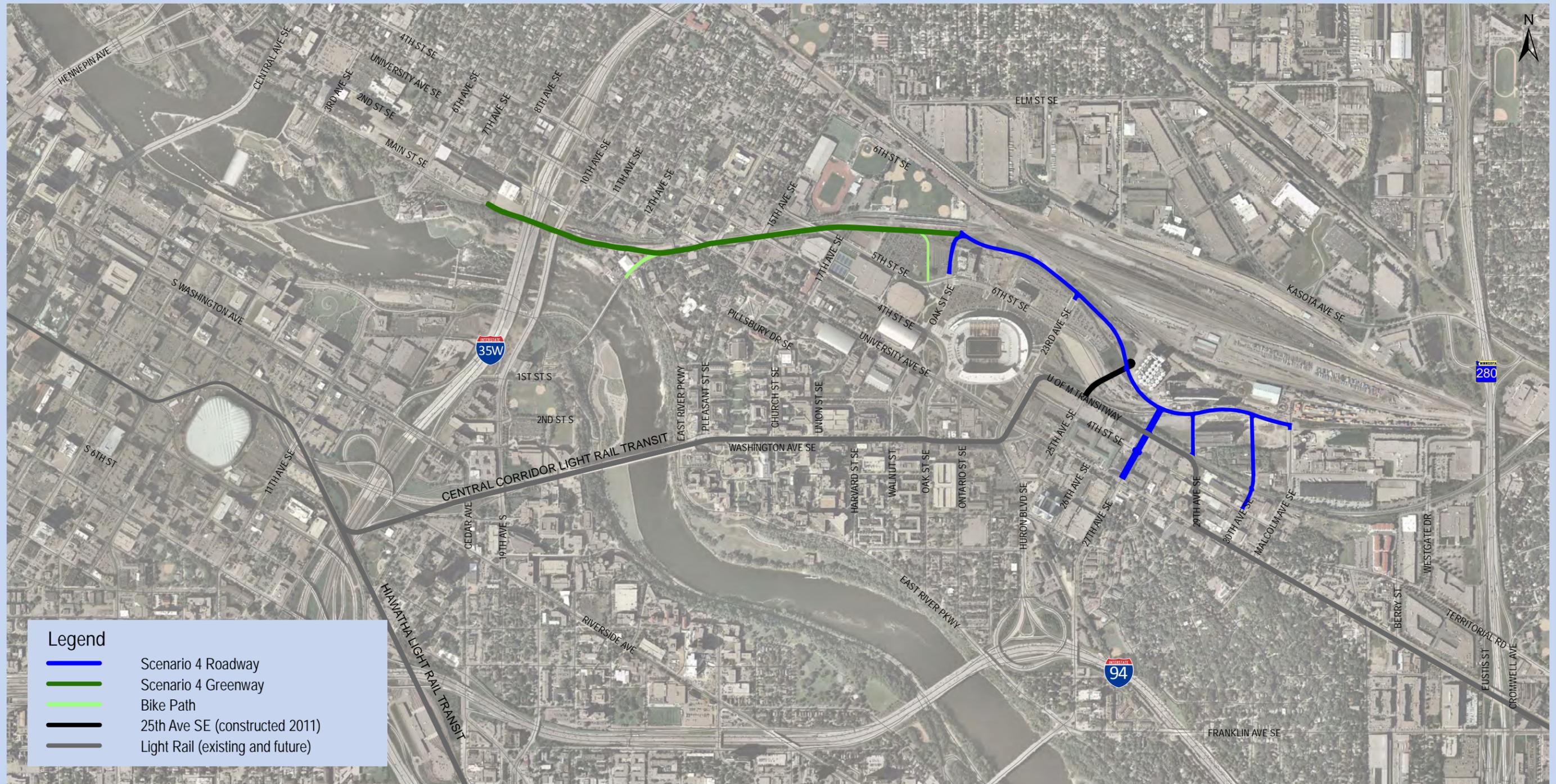


Figure 7. Baseline Scenario 3



Figure 8. Baseline Scenario 4



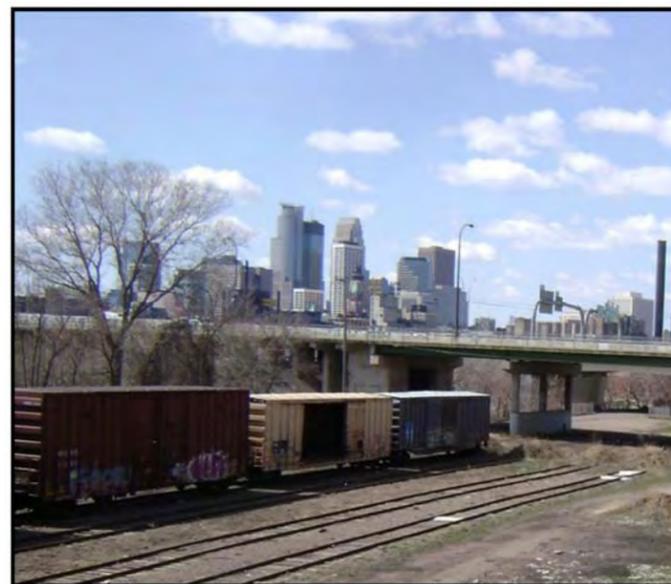
2.2.2 Alternative Connections

In addition to the Baseline scenarios, a number of alternative roadway connections were identified in the preliminary analysis phase. These alternatives generally represent additional or different roadway connections along the length of the Granary Corridor. The purpose of the alternative scenarios was to capture the full range of potential connections to Granary Road and choose the scenarios that should move further into the Phase 2 analysis. The 11 alternative connection options that were identified are described below and shown in **Figures 9-11**.

- Alternative A
Purpose: Provide for movement of traffic between the SEMI area and TH 280.
Alternative A includes the connection of Granary Road to TH 280 at the east end of the corridor. Granary Road would be extended into the City of Saint Paul to the existing Westgate Dr alignment. Access to TH 280 would then be gained at the existing interchange of TH 280 with University Ave/Territorial Rd.
- Alternative B
Purpose: Provide connection to I-35W, but limit additional traffic on 2nd St SE and Main St SE.
Alternative B involves the connection of Granary Road to only 11th Ave SE at the west end of the corridor. In this alternative, 2nd St SE would no longer connect to 11th Ave SE and would end in a cul-de-sac near I-35W. Access to University Ave SE/4th St SE at the I-35W interchange would all occur via 11th Ave SE.
- Alternative C
Purpose: Maximize connectivity between Granary Road and I-35W.
Alternative C involves the connection of Granary Road to both 2nd St SE and 11th Ave SE, with 11th Ave SE creating a t-intersection at Granary Road/2nd St SE. Access to University Ave SE/4th St SE at the I-35W

interchange would occur via 11th Ave SE on the east side of I-35W and 8th Ave SE or 6th Ave SE on the west side of I-35W. This alternative represents the roadway connections for Granary Road that were originally envisioned in the SEMI AUAR.

- Alternative D
Purpose: Provide connection to I-35W, but limit additional traffic on 2nd St SE and Main St SE.
Alternative D would connect Granary Road to 10th Ave SE. Due to the location of the intersection relative to the 10th Ave SE alignment, the intersection would need to be located on structure and would require retaining walls and a bridge on Granary Road. The existing 2nd St SE/1st Ave SE intersection would remain, but neither of these streets would connect to Granary Road. Access to University Ave SE/4th St SE would occur via the existing intersections with 10th Ave SE.



Rail car storage and maintenance still occurs in the Granary Corridor near the 10th Ave SE bridge.

- Alternative E
Purpose: Test the importance of the connection between 17th Ave SE and Granary Road, specific to the need for a grade-separated crossing at the rail line.
Alternative E would eliminate the connection from 17th Ave SE to Granary Road in the middle segment of roadway.
- Alternative F
Purpose: Provide parkway connection between East River Pkwy and historic St. Anthony Main.
Alternative F includes the extension of East River Pkwy to Main St SE. This roadway connection and its relationship to Granary Road have also been discussed for more than 10 years.
- Alternative G
Purpose: Provide connection between Granary Road and East River Pkwy.
Alternative G is similar to Alternative F in that it includes the East River Pkwy extension to Main St SE, but also provides a direct connection between East River Pkwy and Granary Road.
- Alternative H
Purpose: Extend roadway segment to 17th Ave SE instead of Oak St SE to provide better connectivity within campus.
Alternative H applies to scenarios where a roadway is not constructed in the west segment. This alternative would extend the middle segment of roadway (Phase 2) to 17th Ave SE rather than Oak St SE. This alternative was modeled independently and in combination with Alternative A.
- Alternative I
Purpose: Reduce project costs by eliminating the segment of Granary Road between 25th Ave SE and 17th Ave SE, which is parallel to 5th St SE/6th St SE.
Alternative I would connect the east and west segments of Granary Road to 5th St SE/6th St SE, eliminating the middle segment of

Granary Road between 25th Ave SE and 17th Ave SE. The middle segment of Granary Road does not provide any primary property access and is located between the BNSF rail and already-developed University property. The traffic forecasting for this alternative also assumed Alternative A on the east end and Alternative C on the west end to determine the cumulative impact of the combination of connections.

- Alternative J
Purpose: Test the feasibility and benefits of constructing the middle segment (Phase 2) of Granary Road first.
Alternative J includes only the construction of the middle segment of Granary Road from 25th Ave SE to 17th Ave SE. It does not include any roadway connections on the east or west ends of the corridor.
- Alternative K
Purpose: Provide improved connectivity to the University Athletics Complex.
Alternative K includes a roadway connection across the railroad right-of-way, extending 17th Ave SE into the University of Minnesota Athletics Complex. The traffic forecasting for this alternative also assumed Alternative A on the east end and Alternative C on the west end to determine the cumulative impact of the combination of connections.



Figure 9. East Segment Connection Alternative

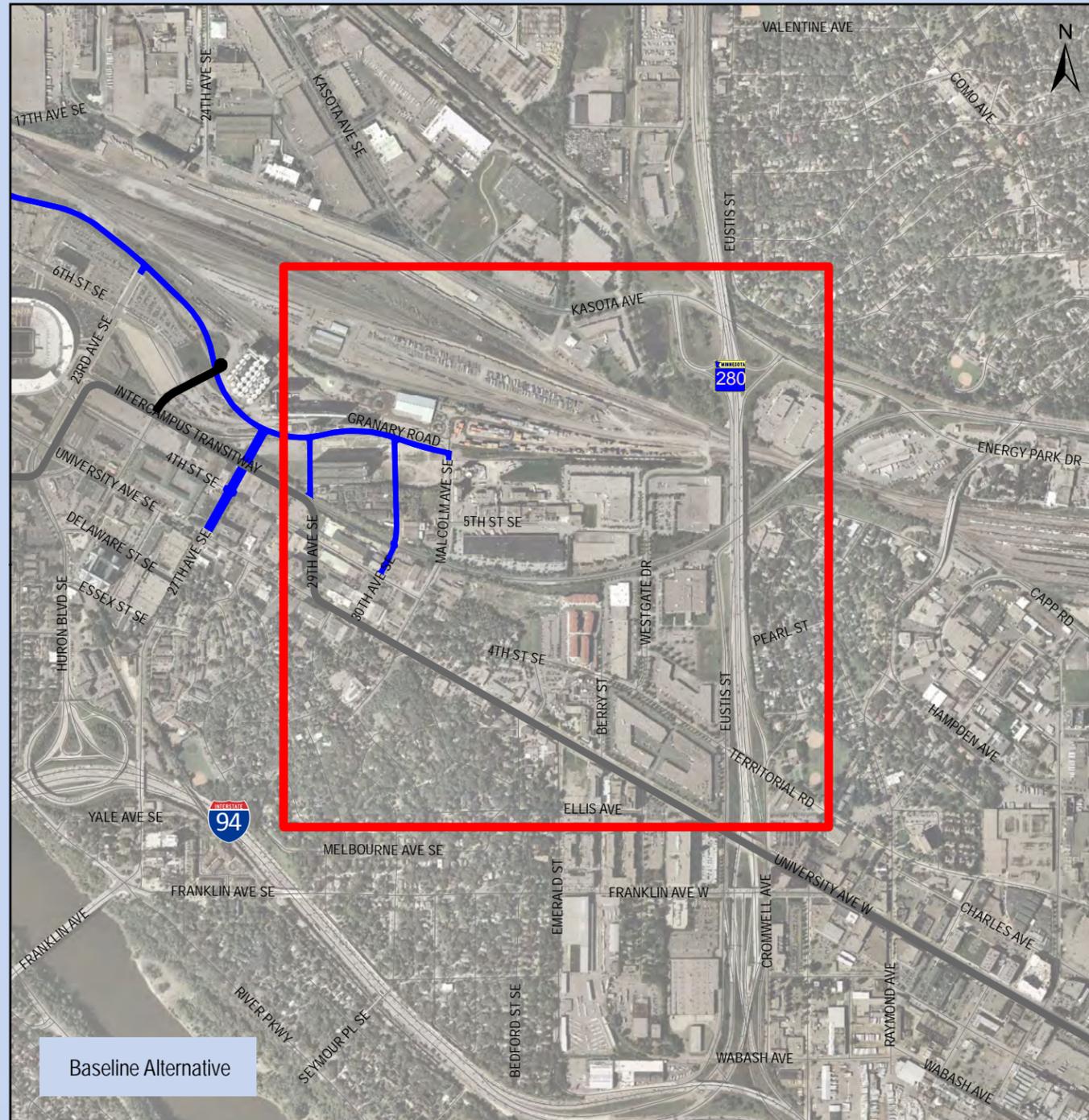




Figure 10. Middle Segment Connection Alternatives

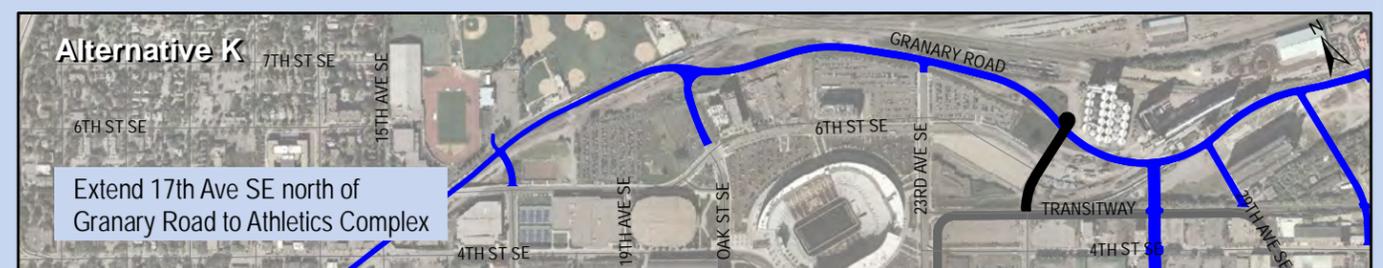
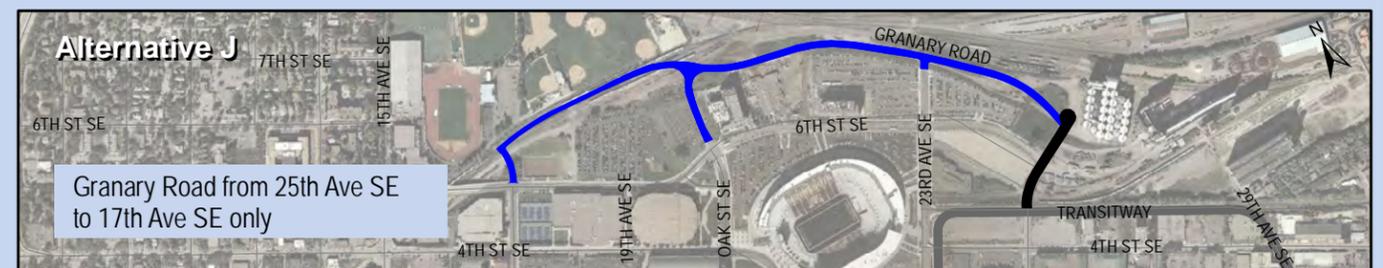
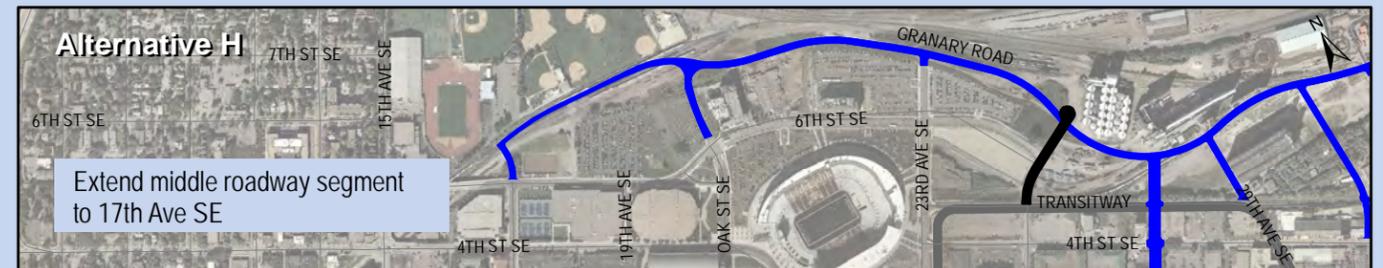


Figure 11. West Segment Connection Alternatives



2.3 TRAFFIC FORECASTING

The 2030 Metropolitan Council Regional Travel Demand Model was used to produce traffic volume forecasts for each of the scenarios included in the study. The travel demand model contains a significant amount of information regarding transportation network attributes and socioeconomic data. The Metropolitan Council model divides the entire seven-county metropolitan area into over 1,000 traffic analysis zones (TAZ), each of which is assigned a value for population, households, retail employment, and non-retail employment. These characteristics are used to estimate the number of trips to and from each zone, which are then distributed by the model onto the roadway network. For the purpose of consistency with the forecasting completed for the Central Corridor LRT project, the year 2030 was established as the future year for all forecasts within the Granary Corridor study area. All future forecasts assumed that Central Corridor LRT was constructed, as well as the

new entrance ramp to I-35W Northbound from 4th St SE near downtown Minneapolis. Within the study area, the Metropolitan Council TAZs were subdivided into smaller areas to produce more accurate forecasts of where traffic enters and exits the zones. A map of the TAZs used in the modeling is provided in **Appendix A**. In addition, in the University of Minnesota area the origins and destinations of vehicle trips can vary significantly from the final origin or destination. Since the forecasting effort was focused on vehicular traffic, the distribution of socioeconomic data was adjusted in the University of Minnesota zones to reflect the distribution of parking on campus. Therefore zones with little parking would have fewer vehicle trips to and from the zone than a zone with a parking structure. The total numbers for population, households, and employment among the University of Minnesota zones were not adjusted in this process.

The roadway segments and connections for each of the Baseline Scenarios and Alternative Connections were added to the travel demand model to produce unique forecasts for each of the 19 scenarios, which consisted of a baseline scenario and one or more alternative connections. **Table 1** summarizes each of the 2030 forecast scenarios modeled for the Granary Corridor.

Figure 12 summarizes the 2030 forecasts for Baseline Scenario 1, which represents the scenario if no segments of Granary Road are built (later referred to as the Limited Build). The detailed traffic forecasting results are provided in **Appendix A**.



University Ave SE near the University of Minnesota campus is a key traffic arterial in Minneapolis.

Table 1. 2030 Granary Corridor Traffic Forecast Scenarios

Forecast Scenario	Alternative Connections													
	None	A	B	C	D	E	F	G	H	J	K	ACK	ACI	AH
Baseline Scenario 1	X						X			X				
Baseline Scenario 2	X	X												
Baseline Scenario 3	X	X	X	X	X	X		X			X	X	X	
Baseline Scenario 4	X	X							X					X

2.4 BASELINE COST ESTIMATE

A preliminary Opinion of Probable Cost (OPC) was prepared for Baseline Scenario 3 of the Granary Corridor. The purpose of the OPC was to update cost estimates that had been previously identified in past studies of the corridor. In the Phase 1 analysis, a cost estimate was prepared for Baseline Scenario 3 as a starting point for the screening analysis, knowing that other scenarios would be analyzed in more detail in Phase 2 of the project. From this starting point, the various alternatives could qualitatively be evaluated as similar in cost, more costly, or less costly.

The preliminary OPC consisted of the following major cost components:

- Construction, including all elements of roadway, sidewalk, trail, utilities, landscaping, lighting, drainage, and railroad.
- Environmental cleanup
- Indirect project costs, including engineering, construction administration, and contingency
- Right-of-way acquisition and relocation of rail operations

The property acquisition costs were developed assuming a proposed right-of-way of 100 feet east of 17th Ave SE and 80 feet west of 17th Ave SE. This is consistent with previous cross-sections developed by the SEMI AUAR (2001) and the Grand Rounds Missing Link Study (2008).

Table 2 summarizes the OPC for Baseline Scenario 3. The low cost and high cost were both provided to represent a variation in costs that accounts for uncertainty about the actual time of construction.

Table 2. Opinion of Probable Cost – Baseline Scenario 3

Cost Item Description	Estimated Low Cost	Estimated High Cost
Construction	\$14,500,000	\$18,300,000
Environmental Cleanup	\$1,000,000	\$1,500,000
Indirect Costs	\$9,300,000	\$11,900,000
Right-Of-Way Acquisition and Rail Operations Relocation	\$21,300,000	\$26,200,000
TOTAL	\$46,100,000	\$57,900,000

The Granary Corridor concept does not include the Kasota Parkway concept or any bridge connections across the rail yard. In addition, since it is currently unknown where a bridge connection may occur in the SEMI area, after discussions with City staff, no costs were included relative to retaining walls or embankment for a future connection. This means that if Granary Road were constructed at existing grades and the Kasota Parkway project moved forward, there would be additional costs for regarding and reconstructing a portion of Granary Road, as well as for retaining walls and bridge structure.

A technical memorandum was prepared that provides additional information regarding the assumptions and methodology that were used to develop the preliminary OPC, which is provided in **Appendix B**.

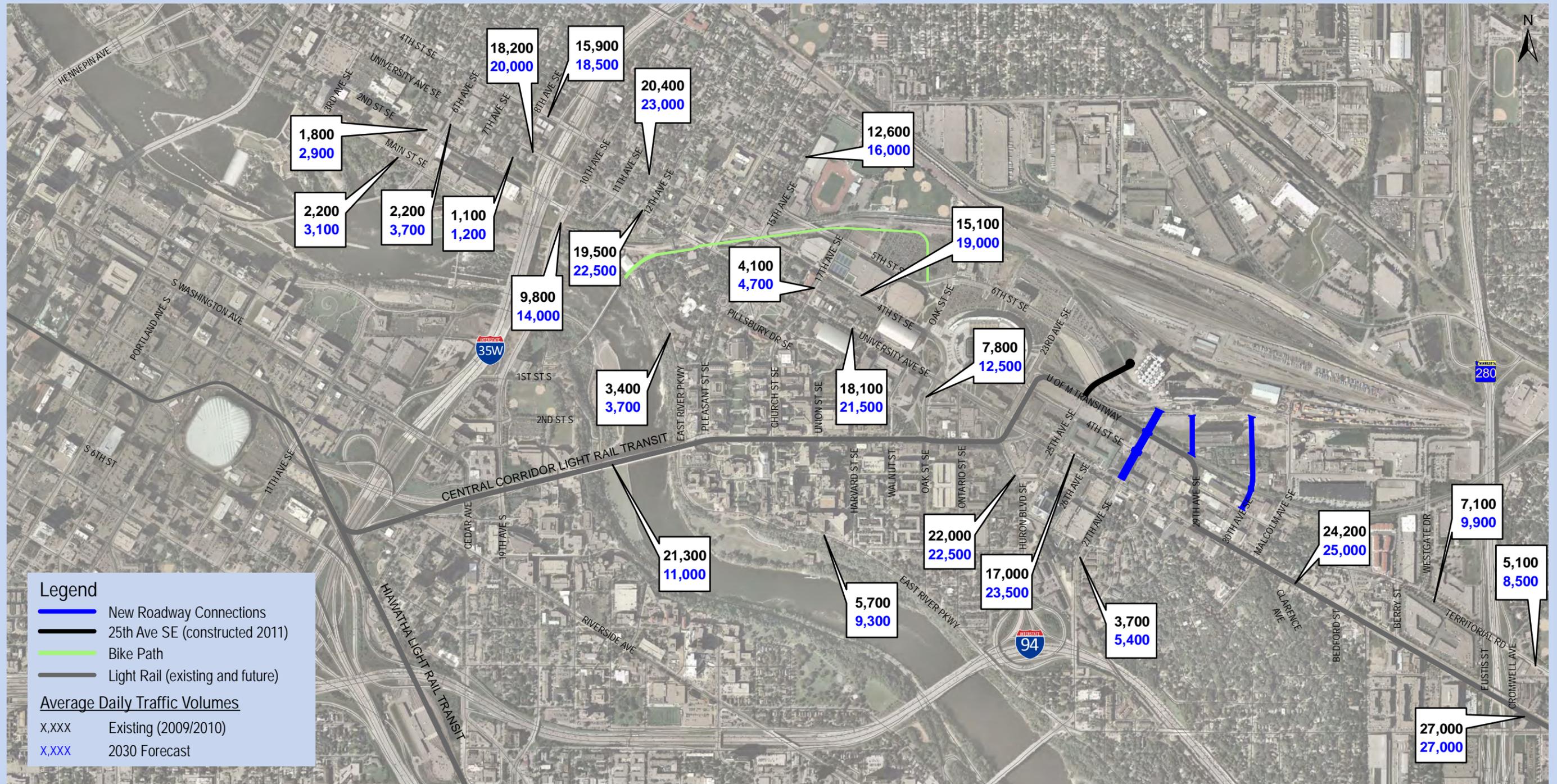


The west end of the Granary Corridor includes one rail line to the University of Minnesota Steam Plant.



Grain elevators remain a prominent feature along the Granary Corridor.

Figure 12. 2030 Forecast Traffic Volumes





2.5 ALTERNATIVE SCREENING

During Phase 1 of the project, screening was necessary to narrow the 19 potential alternatives to a smaller number of options to be analyzed in more detail, yet still encompass the range of possible solutions in order to provide enough information to make informed decisions about the corridor.

For the purposes of the screening, as well as the detailed evaluation to be conducted later in Phase 2 of the project, the following general evaluation categories were developed in conjunction with the PMT:

- Vehicular Traffic
- Other Modes (Ped/Bike/Transit)
- Railroad
- Livability
- Economic Development
- Environmental Quality
- Plan Consistency

Next, detailed evaluation criteria were drafted to encompass the potential benefits and impacts in each category. **Table 3** displays the 26 individual evaluation criteria developed for the analysis process.

A screening analysis was conducted for each of the connection alternative based primarily on a qualitative assessment of how well each alternative met the general evaluation categories. **Table 4** summarizes the screening analysis and recommendations of the 11 alternative connections that were considered in Phase 1. Note that traffic volume comparisons in the following sections are described relative to Baseline Scenario 1 (Limited Build), which was considered as a reference since no roadway segments in the Granary Corridor are assumed to be constructed in that scenario.

Table 3. Cost/Benefit Evaluation Criteria

Evaluation Category	Individual Evaluation Criteria
Vehicular Traffic	T1. Reduces traffic congestion T2. Decreases traffic volumes on University Ave SE and 4th St SE T3. Improves study area connectivity T4. Decreases interaction and conflicts between vehicular traffic and other modes T5. Improves vehicular access to existing properties and uses
Other Modes (Ped/Bike/Transit)	OM1. Facilitates bicycle and pedestrian travel OM2. Facilitates transit use OM3. Improves multimodal environment and experience
Railroad	RR1. Changes to existing rail operations
Livability	L1. Creates public and open space L2. Creates connections to the Mississippi River L3. Improves cohesiveness of the community L4. Improves visual quality L5. Increases biodiversity L6. Traffic volumes remain in acceptable thresholds for street type L7. Impacts of traffic on adjacent properties and neighborhoods L8. Impacts on historic character and features
Economic Development	ED1. Improves access (all modes) to parcels identified for future development or redevelopment ED2. Improves access (all modes) to existing underutilized property not currently identified for redevelopment.
Environmental Quality	EN1. Improves air quality EN2. Reduces noise impacts EN3. Reduces contaminated sites EN4. Improves stormwater and water quality
Plan Consistency	P1. Supports City of Minneapolis policies and Comprehensive Plan P2. Supports University of Minnesota policies and Master Plan P3. Supports policies and goals of adopted neighborhood plans and other agency plans

Table 4. Phase 1 Alternatives Screening Results

Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I	Alternative J	Alternative K
Vehicular Traffic	<ul style="list-style-type: none"> ➤ Diverts traffic from University Ave SE between 25th Ave SE and TH 280 ➤ Increases traffic on Westgate Dr ➤ Minimal traffic changes on Territorial Rd east of TH 280 	<ul style="list-style-type: none"> ➤ Minimal traffic reduction on 4th St SE ➤ 15 percent traffic reduction on University Ave SE ➤ Indirect connection between Granary Road and southbound I-35W 	<ul style="list-style-type: none"> ➤ Highest traffic volumes on Granary Road compared to other alternatives ➤ 10-15 percent traffic reduction on University Ave SE and 4th St SE ➤ Best connection between Granary Rd and I-35W 	<ul style="list-style-type: none"> ➤ 50 percent increase in traffic on 10th Ave SE ➤ 10 percent traffic reduction on University Ave SE and 4th St SE ➤ Additional congestion expected at 10th Ave SE intersections with University Ave SE and 4th St SE 	<ul style="list-style-type: none"> ➤ Minimal increases in traffic on Oak St SE and 15th Ave SE if connection from Granary Road to 17th Ave SE is not provided 	<ul style="list-style-type: none"> ➤ 50 percent increases in traffic on East River Pkwy and Main St SE 	<ul style="list-style-type: none"> ➤ Likely would eliminate potential connection from Granary Road to 11th Ave SE due to roadway elevations 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ Minimal traffic reduction on University Ave SE ➤ 10 percent reduction in traffic on 4th St SE ➤ 60 percent increase in traffic on 5th St SE and 6th St SE 	<ul style="list-style-type: none"> ➤ Granary Road attracts minimal traffic ➤ Minimal traffic reduction on University Ave SE 	<ul style="list-style-type: none"> ➤ Connection attracts minimal traffic
Other Modes (Ped/Bike/Transit)	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No connection from Granary Road facilities to other bicycle routes/trails 	<ul style="list-style-type: none"> ➤ Connection from Granary Road facilities to bicycle lane on 6th Ave SE 	<ul style="list-style-type: none"> ➤ Connection from Granary Road facilities to bicycle lanes on 10th Ave SE 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ Improved pedestrian and bicycle connectivity along the parkway system 	<ul style="list-style-type: none"> ➤ Pedestrian and bicycle connectivity from the parkway to Granary Road 	<ul style="list-style-type: none"> ➤ Pedestrian and bicycle connectivity from Granary Road facilities to U of M trail 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ Pedestrian and bicycle connectivity from Granary Road facilities to U of M trail 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts
Railroad	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ Less railroad right-of-way required 	<ul style="list-style-type: none"> ➤ Less railroad right-of-way required 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts
Livability	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ Eliminates connection between 2nd St SE and 11th Ave SE ➤ Significantly increases traffic on 11th Ave SE ➤ Does not increase traffic on other neighborhood streets 	<ul style="list-style-type: none"> ➤ Increase traffic on 2nd St SE, primarily east of 6th Ave SE ➤ Increases traffic on 8th Ave SE and 11th Ave SE 	<ul style="list-style-type: none"> ➤ Does not increase traffic on neighborhood streets ➤ Potential visual impacts due to retaining walls and bridge 	<ul style="list-style-type: none"> ➤ Lack of connection impacts connectivity to University of Minnesota 	<ul style="list-style-type: none"> ➤ Improved connectivity to Mississippi River 	<ul style="list-style-type: none"> ➤ Eliminates connection between 2nd St SE and 11th Ave SE ➤ Improved connectivity to Mississippi River ➤ Improved connectivity between University of Minnesota and neighborhood 	<ul style="list-style-type: none"> ➤ Improved connectivity between University of Minnesota and neighborhood 	<ul style="list-style-type: none"> ➤ Increased traffic on University roadways through campus 	<ul style="list-style-type: none"> ➤ No significant benefits or impacts 	<ul style="list-style-type: none"> ➤ Improved connectivity to University Athletics Complex



Table 4 continued. Phase 1 Alternative Screening

Criteria	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I	Alternative J	Alternative K
Economic Development	➤ Improves access to SEMI area	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts
Environmental Quality	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ No significant benefits or impacts
Plan Consistency	➤ Consistent with SEMI Master Plan	➤ Indirect connection to I-35W is inconsistent with SEMI Master Plan	➤ Consistent with SEMI Master Plan	➤ Indirect connection to I-35W is inconsistent with SEMI Master Plan	➤ Connection is consistent with SEMI Master Plan	➤ Consistent with Minneapolis Park and Recreation Board Comprehensive Plan	➤ East River Pkwy connection consistent with Minneapolis Park and Recreation Board Comprehensive Plan	➤ No significant benefits or impacts	➤ Inconsistent with SEMI and University of Minnesota Master Plans	➤ Inconsistent with SEMI and University of Minnesota Master Plans	➤ Consistent with University of Minnesota Master Plan
Other Considerations	➤ Facilitates movement of traffic from SEMI onto the regional traffic network ➤ Requires coordination with City of Saint Paul	➤ No significant benefits or impacts	➤ No significant benefits or impacts	➤ Increased costs due to retaining walls and bridge structure to connect to 10 th Ave SE bridge	➤ No significant benefits or impacts	➤ Significant construction costs due to bridge and retaining walls	➤ Significant construction costs due to bridge and retaining walls	➤ No significant benefits or impacts	➤ Potential cost reduction of \$10-15 million compared to Baseline OPC	➤ Estimated cost of approximately \$13-\$16 million	➤ No significant benefits or impacts
Screening Results³	➤ Traffic benefits warrant inclusion in Phase 2 for further analysis	➤ Does not provide significant benefits in any criteria ➤ Eliminate alternative from further analysis	➤ Maximum potential traffic benefit ➤ Maximum potential livability impact ➤ Analyze further in Phase 2	➤ Less traffic benefit than other west end connection, but at additional cost ➤ Eliminate alternative from further analysis	➤ Provides connectivity between Granary Road and University of Minnesota ➤ Analyze further in Phase 2	➤ Based on results of Alternatives F and G, East River Pkwy and Granary Road projects do not impact each other and can be pursued independently	➤ Based on results of Alternatives F and G, East River Pkwy and Granary Road projects do not impact each other and can be pursued independently	➤ Provides connectivity between Granary Road and University of Minnesota ➤ Analyze further in Phase 2	➤ Results in traffic and livability impacts ➤ Eliminate alternative from further analysis	➤ Very little traffic or other benefits, but at significant cost ➤ Eliminate alternative from further analysis	➤ Primary benefits are connectivity to University of Minnesota ➤ Analyze further in Phase 2

³ Recommendations from the screening process were initially reviewed by the PMT and presented at the first Community Workshop for stakeholder discussion and concurrence before proceeding to Phase 2 of the analysis.

The screening process considered both the technical evaluations and the qualitative input gathered throughout Phase 1, as described in the following sections.

2.6 STAKEHOLDER INVOLVEMENT

A workshop was held for the Granary Corridor project on July 27, 2011 at the University of Minnesota Metropolitan Design Center, with approximately twenty-five stakeholders in attendance representing the organizations and agencies listed in the Community Involvement section earlier in this report. The purpose of the workshop was to gather stakeholder input on the alternatives screening and the evaluation criteria to be used in Phase 2 of the analysis.

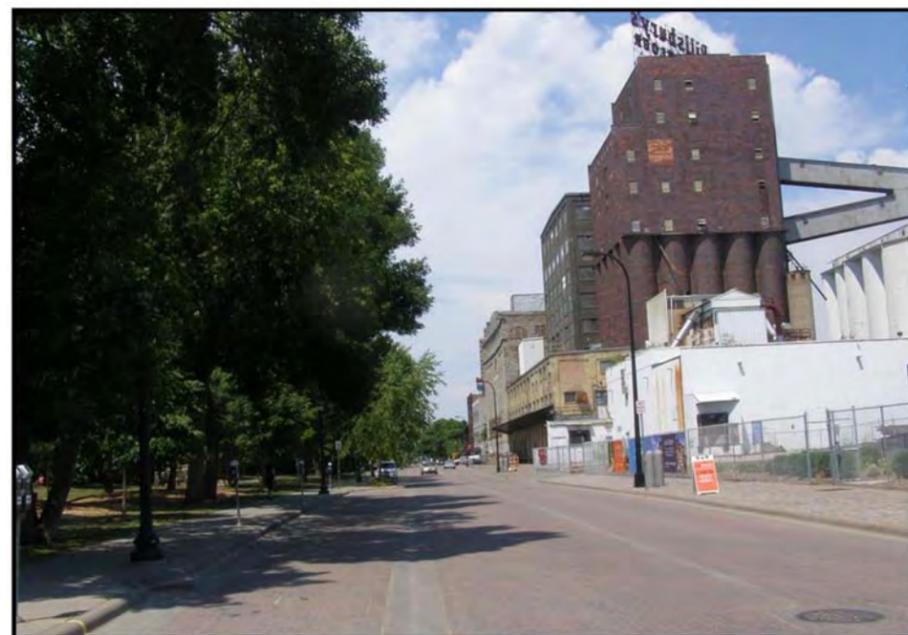
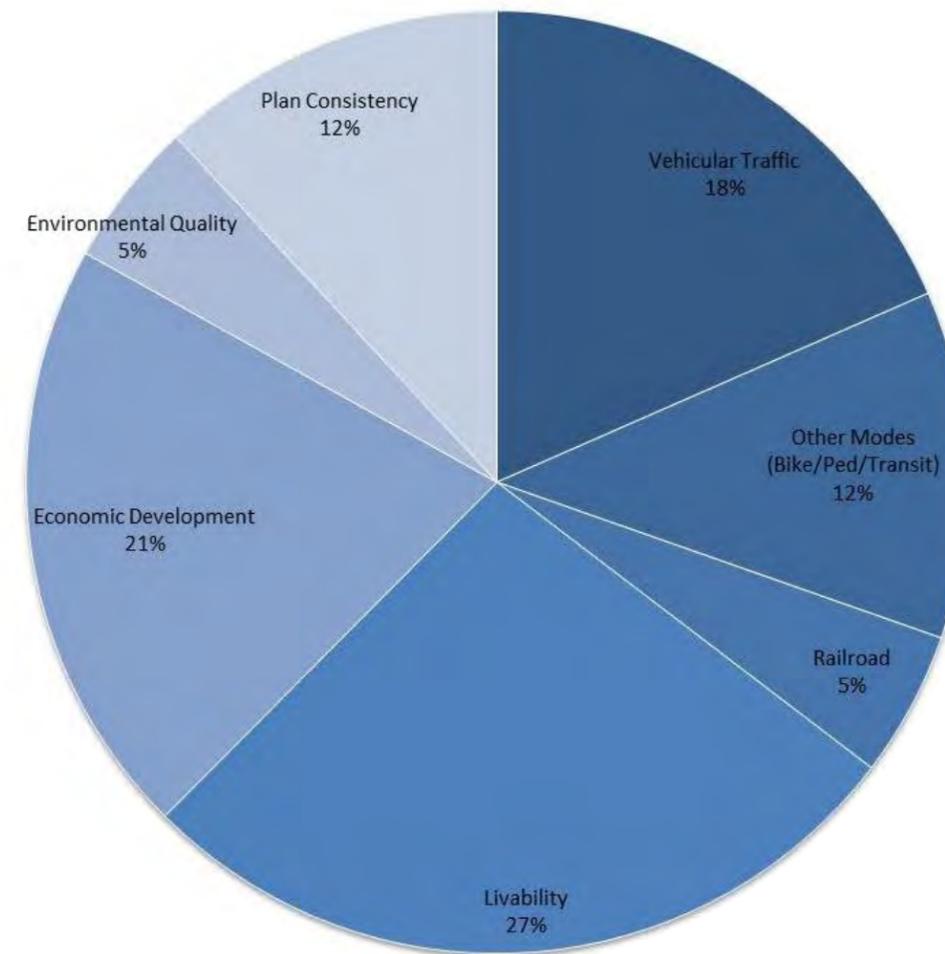
Following an introductory presentation by the project team, stakeholders were divided into two break-out groups. Each group reviewed and discussed the baseline geometric scenarios, the proposed alternative connections, and the evaluation criteria categories and

individual criteria. Stakeholders then had the opportunity to identify their priorities during a “dot exercise”. Each of the stakeholders was asked to vote for the two evaluation categories and five individual criteria that represented the highest priorities for their agency or organization.

Figure 13 summarizes the results of the “dot exercise” from the workshop. These results helped guide the criteria weighting during the Phase 2 evaluation process.

Additional comments and observations from Community Workshop 1 were collected and reviewed by the PMT. Common themes included the desire to see enhanced pedestrian and bicycle connectivity, making sure to evaluate the alternatives in the context of the larger neighborhood, and ensuring coordination with other agencies and plans, such as the Minneapolis Park and Recreation Board. A list of the workshop attendees and a summary of comments from Community Workshop 1 are included in **Appendix C**.

Figure 13. Stakeholder Weighting of Evaluation Criteria – Community Workshop 1



Main St SE in the Marcy-Holmes neighborhood is part of the St. Anthony Falls Historic District.

2.7 EAST RIVER PARKWAY ALTERNATIVES

In the 1990s, the City of Minneapolis, Minneapolis Park and Recreation Board, and University of Minnesota cooperated on a study to identify opportunities to make a multimodal connection between East River Pkwy and Main St SE. These three agencies agreed upon a connection called Option 2A. Option 2A includes a grade separated crossing of the railroad tracks and avoids relocation of the University's fuel tanks and coal unloading facility. The connection option requires relocation of some of the railroad tracks in the area and creates access impacts to the University's current steam generation operations.

The original cost estimate for Option 2A, which was developed as part of the previous study, was about \$11 million (total project cost). The original estimate did

not assume relocation of any existing railroad operations except for some existing railroad tracks.

Minor updates to quantities for rail removal and replacement were made as part of the current estimate, and unit prices were updated to account for inflation. The most significant difference between the 2002 estimate and the costs estimated as part of this study was due to right-of-way costs. The original estimate included right-of-way costs of about \$800,000. The updated right-of-way costs range between about \$7.5 and \$9.5 million based on recent railroad property acquisitions by the University of Minnesota and the City of Minneapolis. In addition, a \$4-\$5 million lump sum amount was added to account for relocation of the existing Minnesota Commercial Railroad rail car maintenance operations in the area.

Table 5 shows the OPC prepared for the East River Pkwy connection alternative.



East River Pkwy runs along the East Bank campus of the University of Minnesota.



The area of the proposed connection from East River Pkwy to Main St SE has right-of-way and design challenges due to the existing rail uses and infrastructure.

The traffic forecasting completed for the East River Pkwy connection showed that it would result in approximately 50 percent increases in traffic on Main St SE and East River Pkwy. However, the volumes did not change significantly when combined with a connection to Granary Road. This result indicates that the East River Pkwy connection and the Granary Road corridor serve different traffic flow patterns and there is little traffic interaction between the two roadways.

Table 5. Opinion of Probable Cost – East River Parkway Connection

Cost Item Description	Estimated Low Cost (millions)	Estimated High Cost (millions)
Construction	\$5.7	\$7.4
Environmental Cleanup	\$1.0	\$1.5
Indirect Costs	\$4.0	\$5.4
Right-of-Way Acquisition and Relocation of Rail Operations	\$7.8	\$9.7
TOTAL	\$18.5	\$24.0

As a result, the East River Pkwy connection could be pursued as an independent project and would not be dependent on the alternative chosen for the Granary Corridor. If either the Granary Corridor or East River Pkwy project were to move forward, the design should plan to accommodate the other corridor, but the decision to pursue one project would not necessitate that the other project also move forward. For this reason, the East River Pkwy alternative was not analyzed further as part of this study.

2.8 ALTERNATIVES SELECTED FOR FURTHER STUDY

Following the evaluation of these Baseline scenarios and alternative connections combinations, the PMT selected specific design concepts for further study in Phase 2. These alternatives were selected in order to capture and provide analysis for the full range of potential benefits and impacts. Therefore the selected alternatives include those expected to be most beneficial for vehicular traffic, most beneficial for livability, most impactful to livability, most impactful to railroad operations, etc.

The four scenarios that were initially identified to be evaluated in Phase 2 were selected and named as follows:

- **Limited Build** – No roadway segments are constructed in the Granary Corridor, but local roadway connections are made on 27th Ave SE, 29th Ave SE, and 30th Ave SE in the SEMI area to provide new property access and promote economic development.
- **SEMI Access** – Granary Road is constructed from 25th Ave SE to Westgate Dr in the City of Saint Paul, with a connection to TH 280 via Westgate Dr and Territorial Rd.
- **SEMI Access Plus Greenway** – Granary Road is constructed from 17th Ave SE to Westgate Dr in the City of Saint Paul, with a connection to TH 280 via Westgate Dr and Territorial Rd. A greenway would be built from 17th Ave SE to Main St SE where vehicle traffic is not allowed and enhanced pedestrian and bicycle facilities are provided.
- **Full Build** – Granary Road is constructed from Westgate Dr in the City of Saint Paul, with a connection to TH 280 via a Westgate Dr and Territorial Rd.

Based on the stakeholder input received at the workshop and follow-up discussions by the PMT, two

additional alternatives were added to the Phase 2 analysis:

- **SEMI Access Plus** – The east end of Granary Road is constructed from 17th Ave SE to Westgate Dr in the City of Saint Paul, with a connection to TH 280 via a Westgate Dr and Territorial Rd. No greenway segment is included. This alternative was included to be able to specifically identify the added benefits and costs of the greenway segment.
- **SEMI Access with Extended Greenway** – Granary Road is constructed from 25th Ave SE to Westgate Dr in the City of Saint Paul, with a connection to TH 280 via Westgate Dr and Territorial Rd. A greenway would be built from 25th Ave SE to Main St SE where vehicle traffic is not allowed and enhanced pedestrian and bicycle facilities are provided. This alternative was added based on the desire for greater multimodal transportation options in the study area.

Figure 14 displays graphically the process of alternative refinement from 25th Ave SE to Westgate Dr and from the screening phase to the alternatives evaluation phase. The graphic also shows the introduction of “logos” created to be graphically representative of the components of each of the alternatives. These logos were introduced to help facilitate the understanding of the alternatives in terms of roadway, trail, and greenway improvements in each segment of the corridor. The grey bands represent existing conditions, blue represents roadway, light green represents trail, and dark green represents greenway. A schematic of each of the selected alternatives are provided in **Figures 15-21** on the following pages.

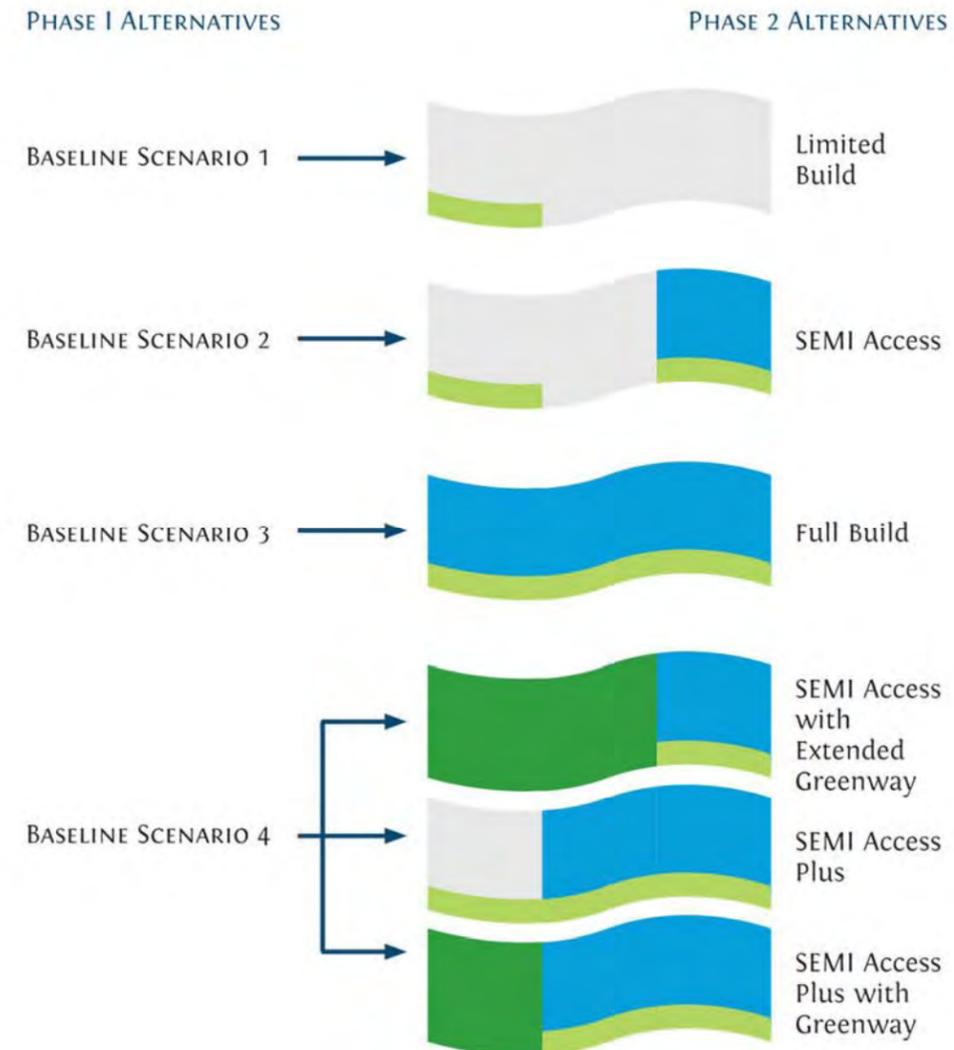
A “Full Build Modified” alternative was also briefly considered during the alternatives development process. In this option, Granary Road would be constructed from 25th Ave SE to Westgate Dr and from 17th Ave SE to Main St SE. The middle roadway

segment from 17th Ave SE to 25th Ave SE would not be built, but connections would be provided to the existing 5th St SE/6th St SE alignment, which is parallel to the proposed Granary Road alignment in this area.

The goal of this alternative was to reduce right-of-way and construction costs of the project, while maintaining the functionality of the roadway network.

However, the traffic forecasting analysis showed that the increase in traffic on 5th St SE/6th St SE would cause significant congestion and operational issues, would only save approximately 25 percent of the costs of the Full Build alternative, and would be expected to have negative impacts on livability. Therefore this alternative was eliminated from further consideration.

Figure 14. Alternatives Refinement Process





GRANARY CORRIDOR STUDY



Kimley-Horn
and Associates, Inc.

Figure 15. Limited Build Schematic Layout



Figure 16. SEMI Access Schematic Layout

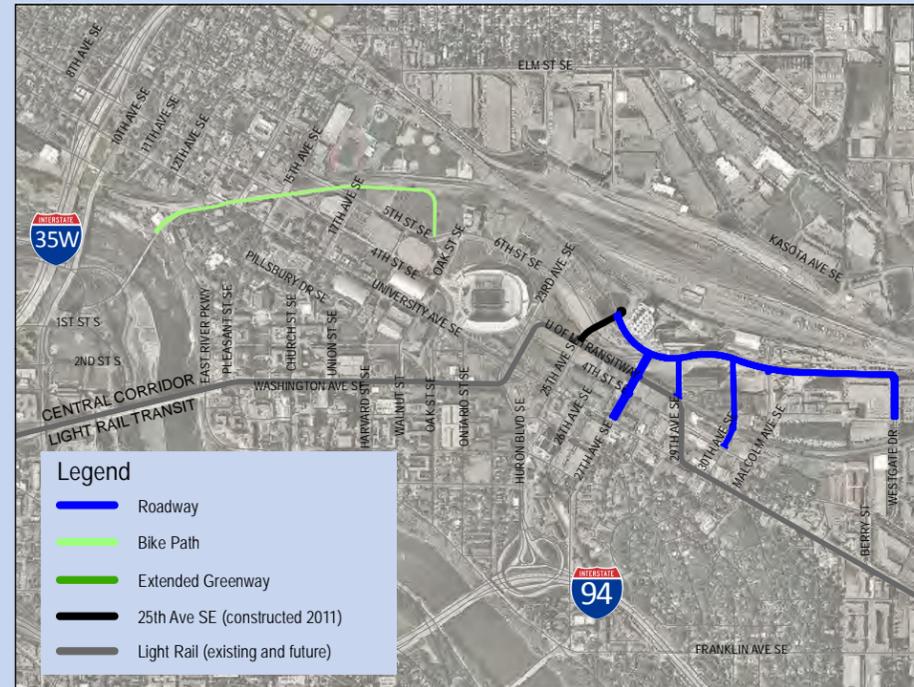


Figure 17. SEMI Access Plus Schematic Layout



Figure 18. Full Build Schematic Layout

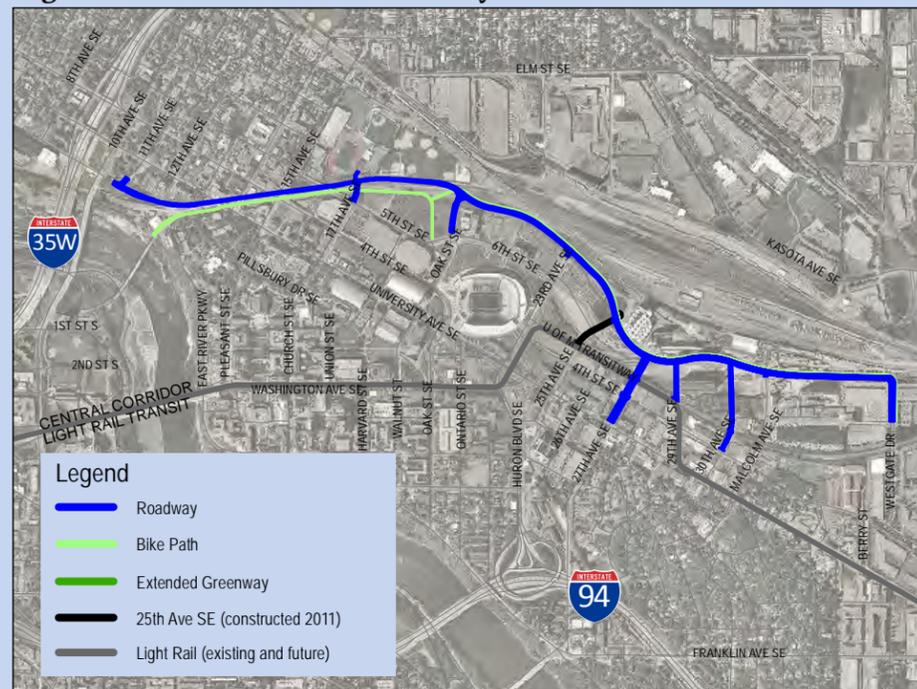
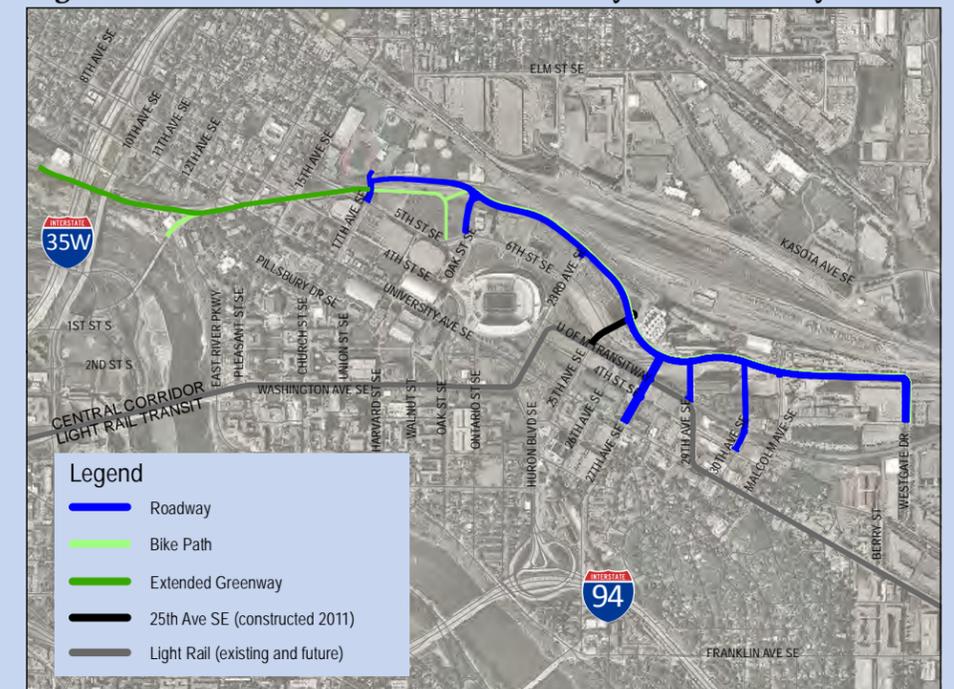


Figure 19. SEMI Access with Extended Greenway Schematic Layout



Figure 20. SEMI Access Plus with Greenway Schematic Layout



3 PHASE 2: COST/BENEFIT ANALYSIS

Phase 2 of the study was focused on more detailed analysis of the six alternatives that were moved forward from the Phase 1 screening. The evaluation process translated each of the evaluation criteria into quantitative measures and scores that could be used to compare the benefits, impacts, and costs. The following sections describe this process in more detail and present the results of the analysis.

3.1 TRAFFIC FORECASTING AND ANALYSIS

At the start of Phase 2 of the analysis, additional traffic forecasting was completed to establish 2030 daily and peak hour traffic volumes for each of the six alternatives under study. The forecasts were based on the modeling completed in Phase 1 of the analysis, but combined the various connection alternatives that were identified to be moved forward to Phase 2. For example, the Full Build forecasts include all three segments of Granary Road, but also include the connections modeled in Alternative A, Alternative C, and Alternative K. Note that the traffic forecasts for the Extended Greenway and Greenway alternatives are identical to those for the SEMI Access and SEMI Access Plus alternatives, respectively, since they include the same roadway network. The 2030 forecast traffic volumes for key roadway segments for each alternative are shown in **Figures 21-23**. The volumes for the Limited Build scenario are shown in **Figure 12**. These volumes did not change from the Phase 1 analysis, since the Limited Build alternative did not change as part of the Phase 1 screening. The forecast volumes for all the modeled roadways in the study area are provided in **Appendix D**. The forecasting showed that the maximum traffic reduction on University Ave SE and 4th St SE under the Full Build alternative was approximately 15 to 20 percent and the maximum volume expected to use Granary Road would be approximately 9,500 vehicles per day. The forecast volumes show that most of the traffic on

Granary Road would not travel from one end of the corridor to the other, but rather the trips generated on the east end of the corridor tended to be oriented to and from the east and trips generated in the University of Minnesota area tended to be oriented to and from the west. As a result of these traffic patterns and the existence of the 5th St SE/6th St SE corridor parallel to Granary Road, the middle segment had the lowest daily traffic volumes.

Following the traffic forecasting, traffic volumes were developed for the 2030 AM and PM peak hours for each alternative and more detailed traffic modeling was performed to better understand the intersection and corridor operations under each of the alternatives. The intersections included in the modeling are shown in **Figure 24**. The operations analysis was performed using the Synchro/SimTraffic 7 software, which uses inputs including posted speed limits, intersection geometry, lengths of turn lanes, traffic volumes, and signal timings to simulate vehicle traffic operations on a second-by-second basis. The outputs from the model include expected vehicle delay at each intersection, queue lengths, and corridor travel times, among other measures. For the purposes of this analysis, the reported results are the average of five one-hour simulations in SimTraffic. The operations of each intersection have been summarized using level of service, as defined by the 2010 Highway Capacity Manual (HCM). The HCM level of service descriptions and delay thresholds are shown below in **Table 6**. Based on standard practice in the traffic engineering industry, as well as guidance from the American Association of State Highway Officials (AASHTO), level of service D/E is considered to be the threshold of acceptable intersection operations during the peak hour for urban and suburban areas.

Table 6. Intersection Level of Service Definitions

Level of Service (LOS)	Description	Average Vehicle Delay (seconds/vehicle)	
		Unsignalized Intersection	Signalized Intersection
A	Intersection operates with little delay. Most vehicles do not stop (signalized) or there is very little conflicting traffic (unsignalized).	<10	<10
B	Intersection operates well under capacity. More vehicles stop or have conflicting traffic movements compared to LOS A.	10-15	10-20
C	Intersection has adequate capacity, but all vehicles may not clear in one cycle (signalized) and a significant number of vehicles experience delay	15-25	20-35
D	Intersection operates with a high volume/capacity ratio and many vehicles experience delay	25-35	35-55
E	Intersection operates poorly, with a high volume/capacity ratio and most vehicles experience delay. Some vehicles experience significant delay and all vehicles cannot clear the intersection in one cycle (signalized)	35-50	55-80
F	Intersection is described as “failing”, operating with very high volume/capacity ratio and long delays. Queues are not able to be cleared in one cycle (signalized)	50+	80+

The Limited Build alternative showed that a total of nine intersections would be expected to operate at LOS E/F in the 2030 AM and PM peak hours. The modeling showed reduced congestion and improved intersection LOS as additional Granary Road segments were built, however none of the alternatives resulted in acceptable operations at all intersections in 2030. The 15th Ave SE/8th St SE, University Ave SE/8th Ave SE, and Franklin Ave/Cromwell Ave intersections would be expected to operate at LOS E/F during the 2030 AM or PM peak hours under all the alternatives. The first two intersections have side street stop control on 8th St SE and 8th Ave SE and vehicles on the side streets experience delays due to heavy traffic flows on the arterial roadway. The LOS for each intersection for each alternative is provided in **Appendix D**.

In addition to intersection LOS, corridor travel times were also gathered from the simulation modeling. In the Limited Build scenario, travel times along the University Ave SE/4th St SE corridor were approximately 6.6 minutes in the 2030 AM peak hour and 9.9 minutes in the 2030 PM peak hour. The maximum travel time savings expected under the 2030 Full Build scenario was modeled to be approximately 0.2 minutes in the AM peak hour and 2.0 minutes in the PM peak hour. In off-peak hours when traffic volumes and congestion are generally lower, the travel time savings would be expected to be less than in peak hours. The detailed traffic modeling outputs for all alternatives are displayed in the full evaluation matrix provided in **Appendix E**.

Figure 21. SEMI Access 2030 Forecast Traffic Volumes



Figure 22. SEMI Access Plus 2030 Forecast Traffic Volumes

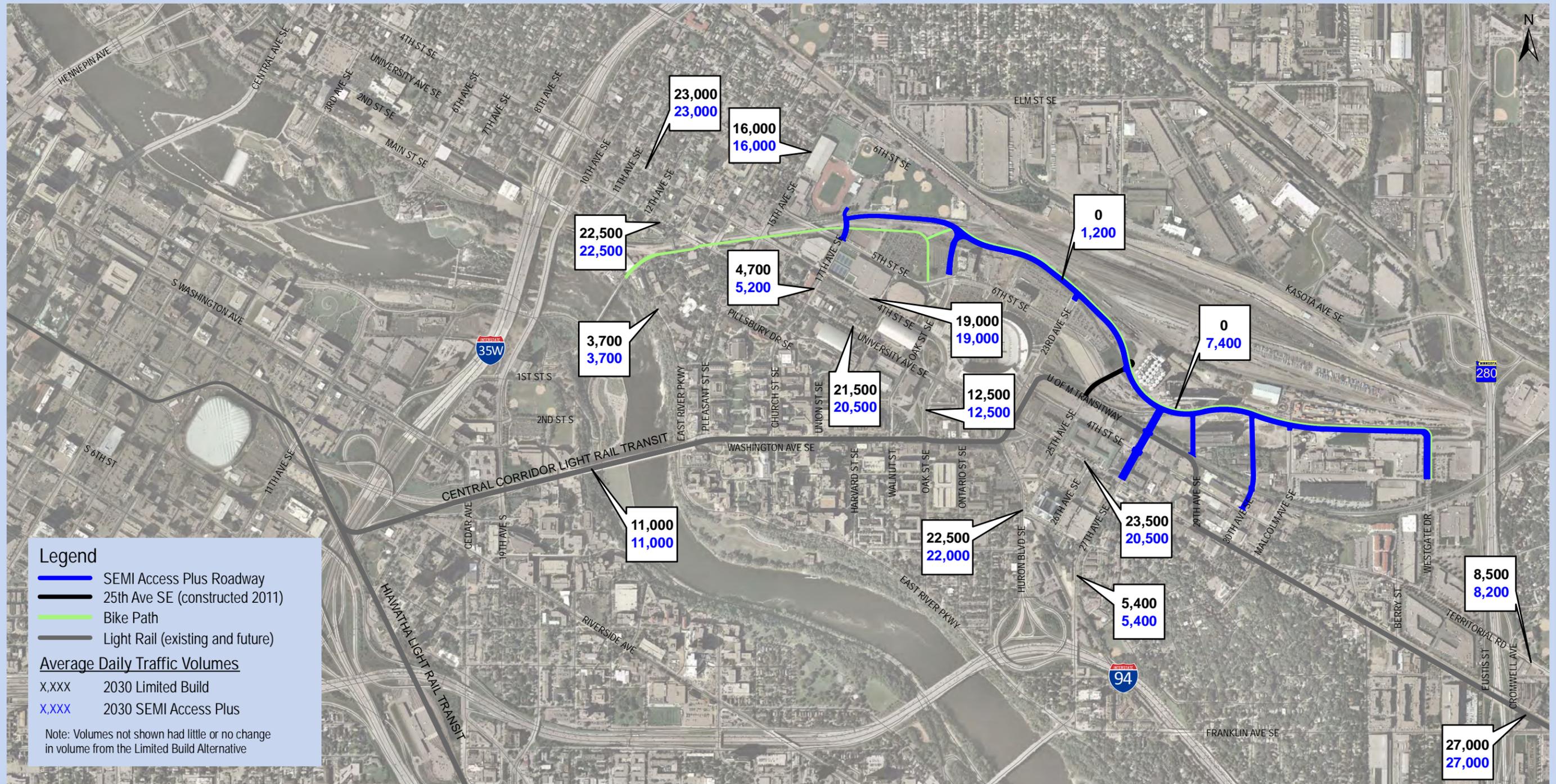


Figure 23. Full Build 2030 Forecast Traffic Volumes

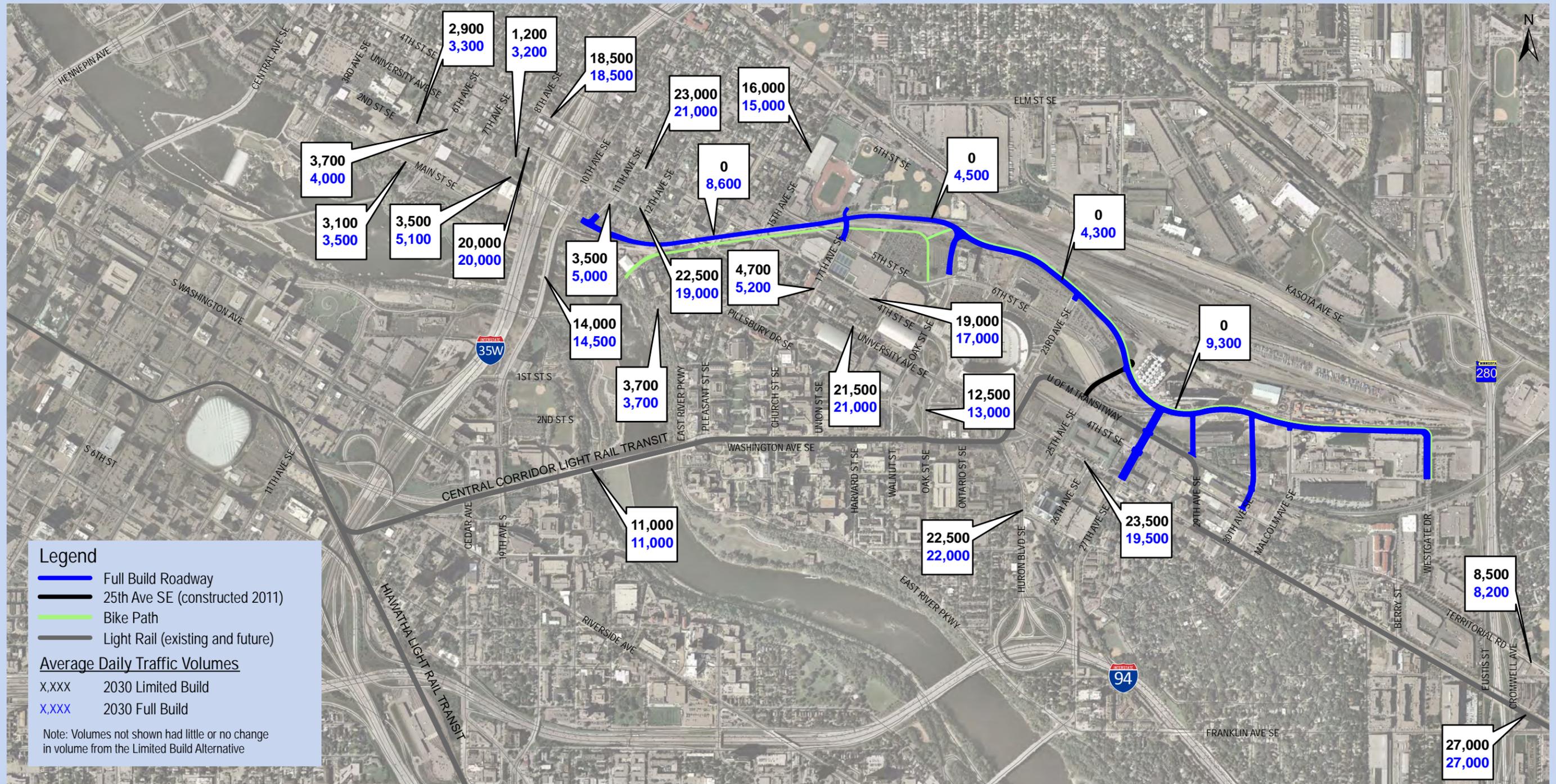
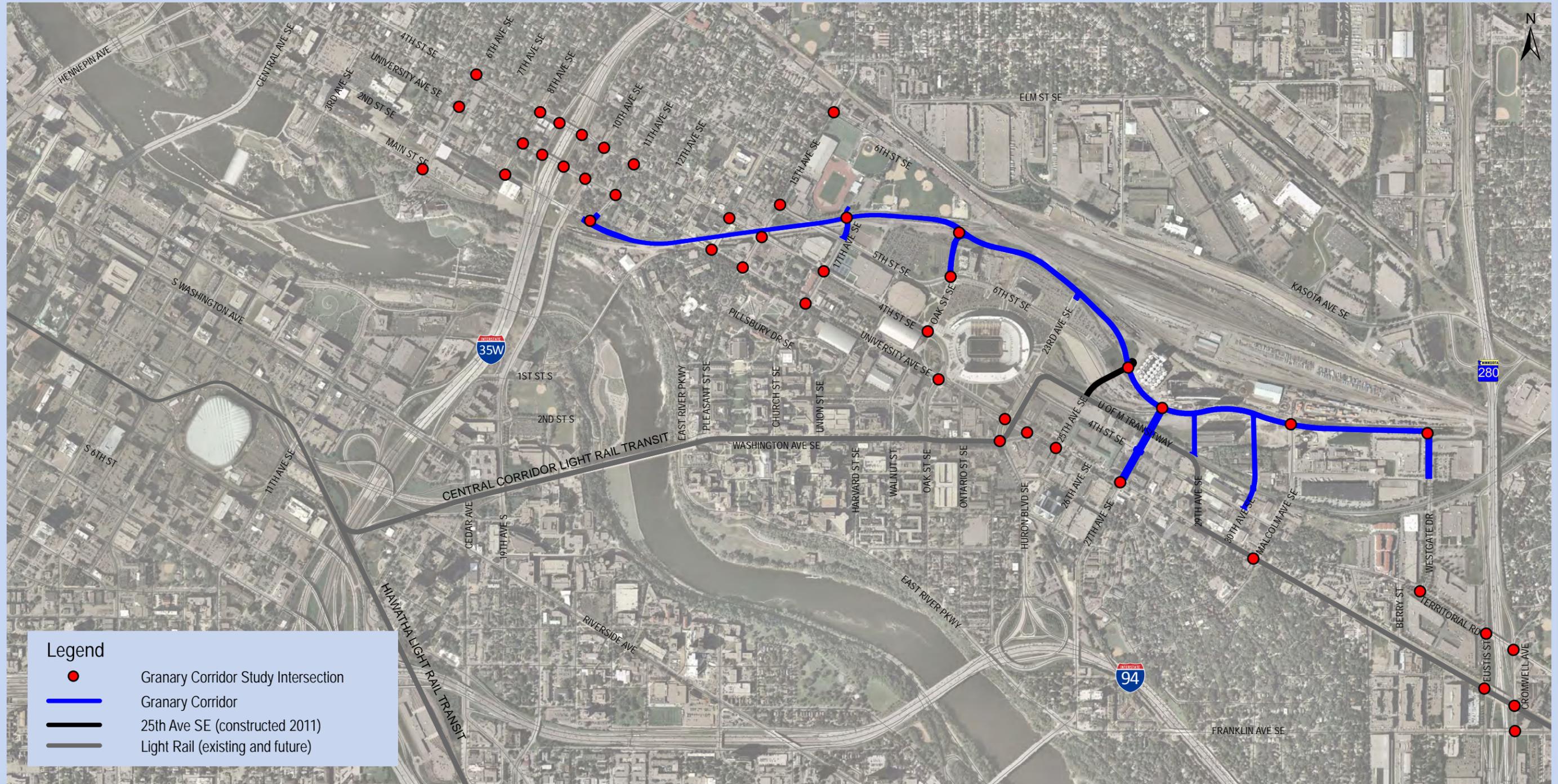


Figure 24. Peak Hour Traffic Analysis Intersections



3.2 GEOMETRIC LAYOUTS

In Phase 2 of the analysis, the schematic layouts for each alternative were developed in greater detail. This involved a number of necessary assumptions:

- The same right-of-way width was used for the roadway and greenway options – 100 feet from the Minneapolis city limits to 17th Ave SE and 80 feet from 17th Ave SE to 2nd St SE or Main St SE.
- Granary Road was assumed to include one vehicle lane in each direction, with increased roadway widths for left-turn lanes at major intersections. No parking lanes or raised center median were assumed.
- Sidewalk and trail facilities were assumed to be constructed parallel to all roadway segments. Sidewalks were assumed on both sides of the roadway in the 100-foot right-of-way segments and on one side in the 80-foot right-of-way segments. A separate multi-use trail was assumed throughout the corridor.
- Full Greenway alternatives assumed an increased level of trail enhancements compared to Reduced Greenway alternatives. These enhancements included linear stormwater quality features (bio-swales), additional landscaping, and increased pedestrian walkway spaces.
- All alternatives accommodate the University of Minnesota trail that is proposed to extend from Bridge 9 along the south side of the trench and terminating near Oak St SE. The alternatives that have a greenway in the trench incorporate the bicycle trail into the greenway right-of-way.
- The greenway options include approximately 900 to 1,000 additional lineal feet of infrastructure in order to connect to Main St SE, rather than 2nd St SE as was assumed for the roadway option.
- Vertical circulation connections for pedestrians and bicyclists were assumed near

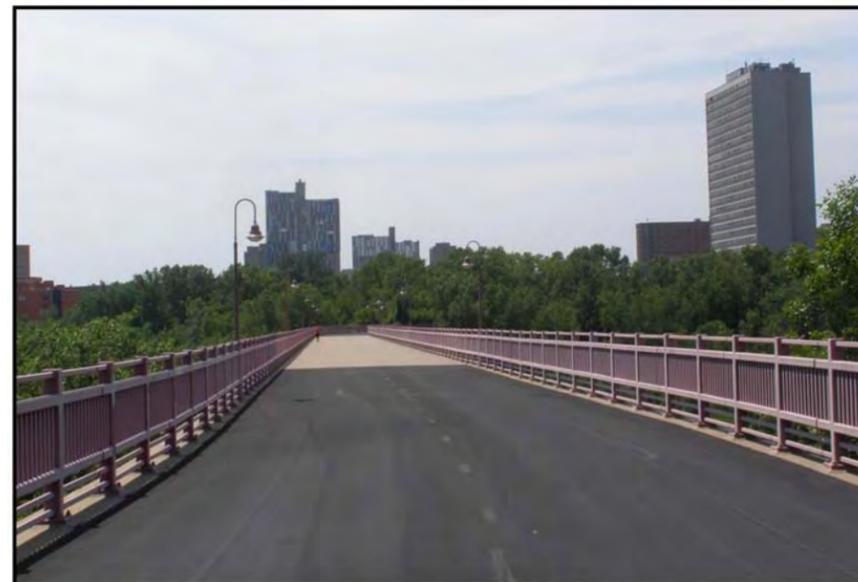
the University Ave SE/14th Ave SE and 4th St SE/15th Ave SE intersections in the Full Build, Extended Greenway, and Greenway alternatives. These connections would provide links between the at-grade land uses and the Granary Corridor, which is in a trench section below University Ave SE and 4th St SE.

- Granary Road will require an at-grade rail crossing of the railroad spur at approximately 17th Ave SE. An at-grade crossing would not be controlled by gates. This was considered reasonable based on the low volume of train traffic at this location. Based on the rail operations study prepared completed in 2010, no trains currently use this spur section of track. However, if the University of Minnesota were to resume train deliveries of coal or biomass to the Steam Plant, up to two trains per week could use the spur for access to the University of Minnesota facilities. Based on the low volume of train traffic, a grade separated track crossing was not assumed in any of the alternatives.

Alternatives with a roadway in the trench were assumed to require relocation of the rail in the trench from the north bridge bays to the middle bays. This relocation is needed to make the connections of the roadway to 2nd St SE and 11th Ave SE.

- All greenway alternatives in the trench were assumed to be constructed along an alignment that generally permits the existing tracks to remain in the north bridge bays. This is preferred for the greenway alternatives because it minimizes construction costs and also facilitates the greenway connection to Main St SE.
- No transit service or infrastructure was assumed to be provided in the Granary Corridor due to the extensive bus route network already provided in the University of Minnesota area.

As part of the public involvement process (described later in section 3.5), there was broad consensus from the project stakeholder representatives to also consider a narrower right-of-way for the greenway options in order to reduce the overall costs. Based on this feedback, Reduced Greenway alternatives were added to the study and were evaluated in the same way as the other alternatives. Concept layouts of each of the eight alternatives, along with representative cross sections, are shown in **Figures 25-30**.



Bridge 9 provides a bicycle and pedestrian connection from the East Bank to the West Bank of the Mississippi River in Minneapolis.



The rail line to the University of Minnesota Steam Plant would be relocated to the center bridge bay to accommodate a roadway connection from the Granary Corridor to 2nd St SE.

Figure 25. Limited Build Alternative



Figure 26. SEMI Access Alternative



Figure 28. Full Build Alternative

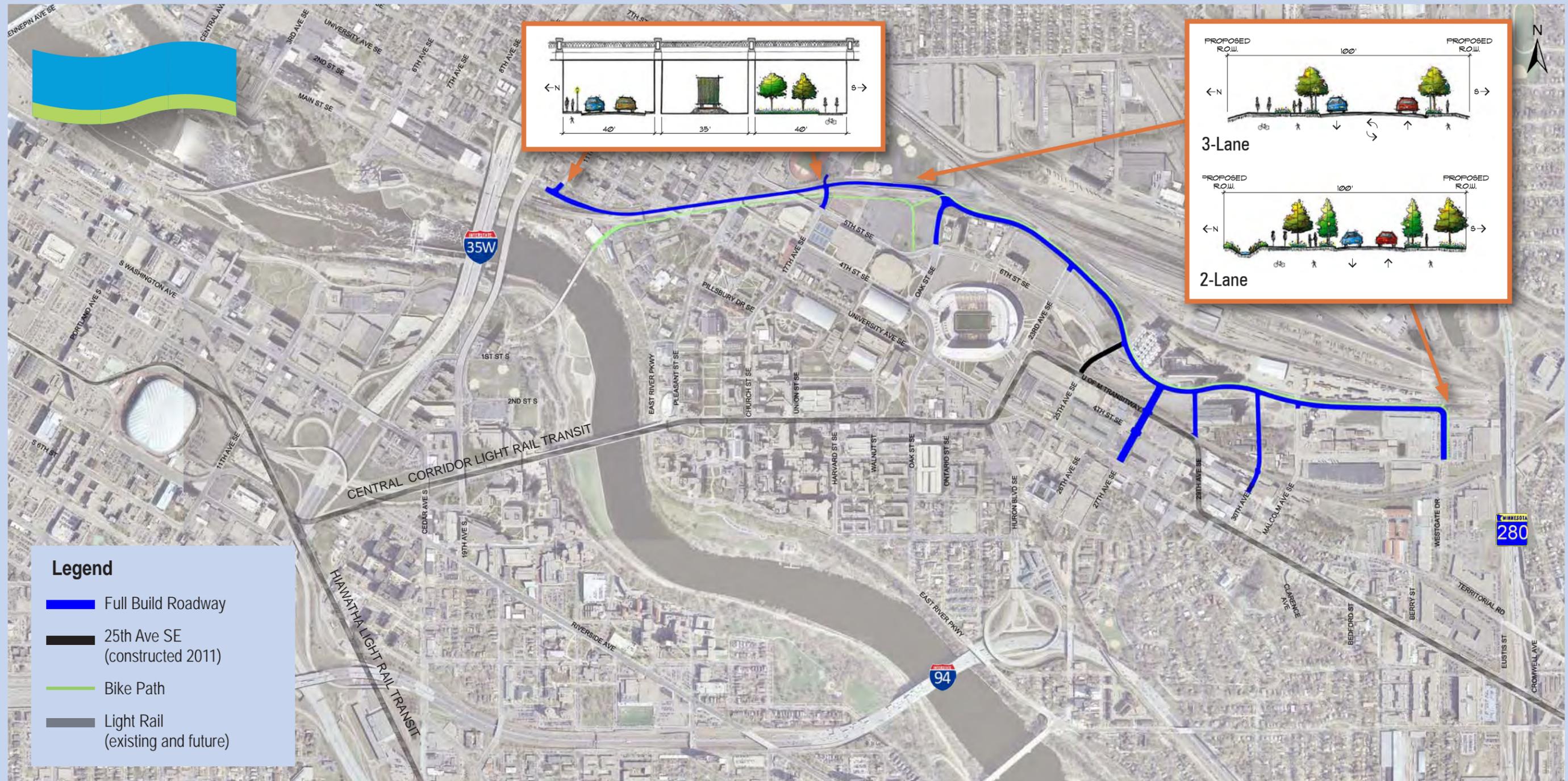


Figure 29. SEMI Access with Extended Greenway Alternatives

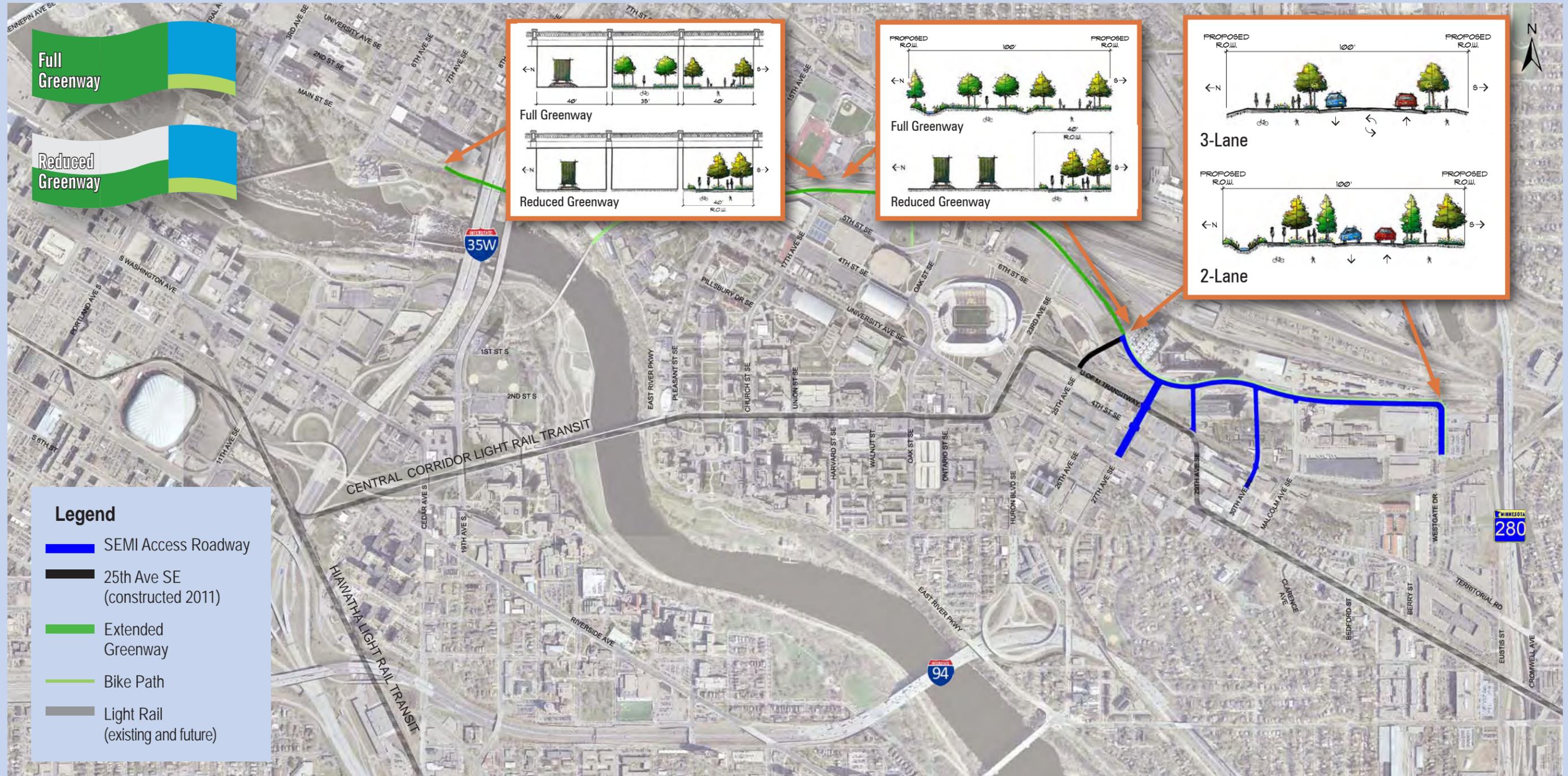
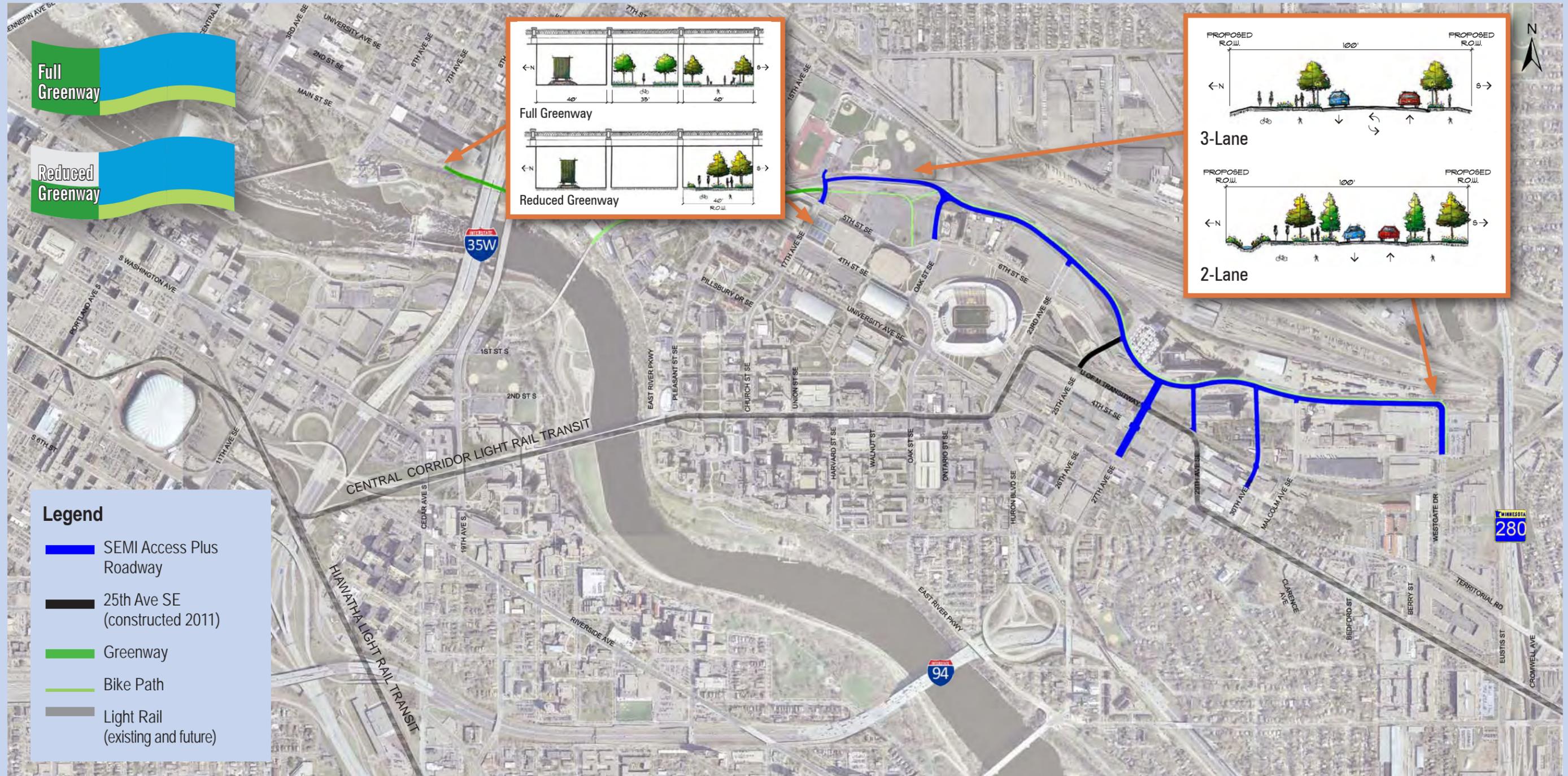


Figure 30. SEMI Access Plus with Greenway Alternatives



3.3 COST ESTIMATES

Preliminary Opinion of Probable Cost estimates were prepared for the eight alternatives analyzed in Phase 2. These estimates were needed to complete the cost/benefit analysis for each alternative. As in the Phase 1 analysis, the OPC estimates consisted of the following major cost components:

- Construction including roadway, sidewalk, trail, utilities, landscaping, lighting, drainage, and railroad.
- Environmental cleanup

- Indirect project costs including engineering, construction administration, and contingency
- Right-of-way acquisition and relocation of rail operations

One of the most significant parts of the cost estimates was right-of-way. The property acquisition costs were developed assuming a proposed right-of-way of 100 feet east of 17th Ave SE and 80 feet west of 17th Ave SE for the Roadway and Full Greenway options. A proposed right-of-way of 40 feet both east and west of 17th Ave SE were assumed for the Reduced Greenway

options. Very little of the needed right-of-way is currently owned by the City of Minneapolis. **Table 7** summarizes the right-of-way acquisition needs for each segment of the corridor.

Table 8 summarizes the OPC for each of the alternatives. The low cost and high cost were both provided to represent a variation in costs that accounts for uncertainty about the actual time and scope of construction. The calculation of the cost/benefit ratio was based on the high cost estimate for all alternatives, in order to be conservative. As assumed for the Phase 1 Baseline OPC, the cost estimates do not include the

Kasota Pkwy concept or any bridge connections across the rail yard.

The total costs for the three full length, full width alternatives are all very similar based on the longer length of the Greenway options, as well as assumptions that the same levels of utility work, drainage, and other work would be similar for both the roadway and greenway options. Although the greenway options would have lower paving costs, this was assumed to be offset by increased costs for landscaping, signing and wayfinding, lighting, and other amenities for bicyclists and pedestrians.

Table 7. Right-of-Way Needs

Required Right-of-Way Acquisition (acres)	Limited Build	SEMI Access	SEMI Access Plus	Full Build	SEMI Access with Extended Greenway		SEMI Access Plus with Greenway	
					Full Greenway	Reduced Greenway	Full Greenway	Reduced Greenway
Public	0.0	0.0	3.0	3.3	3.3	1.6	3.3	3.1
Private	2.3	9.7	9.8	9.8	9.8	9.8	9.8	9.8
Railroad	0.2	4.1	9.6	13.8	16.1	8.9	16.1	11.7
TOTAL	2.5	13.8	22.4	26.9	29.2	20.3	29.2	24.6

Table 8. Opinion of Probably Costs – Phase 2 Alternatives

Cost Item Description	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)	Estimated Low Cost (millions)	Estimated High Cost (millions)
Construction	\$1.5	\$2.0	\$5.1	\$6.9	\$8.8	\$11.6	\$15.4	\$19.8	\$13.1	\$17.8	\$9.4	\$13.0	\$13.8	\$18.5	\$11.8	\$15.7
Environmental Cleanup	\$0.2	\$0.3	\$0.6	\$0.9	\$1.0	\$1.5	\$1.5	\$2.3	\$1.7	\$2.6	\$1.1	\$1.6	\$1.7	\$2.6	\$1.3	\$1.9
Indirect Costs	\$1.0	\$1.4	\$3.5	\$4.7	\$5.9	\$7.9	\$10.1	\$13.3	\$8.9	\$12.2	\$6.3	\$8.8	\$9.3	\$12.7	\$7.8	\$10.6
Right-of-Way Acquisition	\$1.5	\$1.8	\$7.7	\$9.3	\$13.8	\$16.8	\$21.5	\$26.5	\$23.5	\$29.0	\$16.5	\$20.3	\$23.5	\$29.0	\$19.6	\$24.1
TOTAL	\$4.2	\$5.5	\$16.9	\$21.8	\$29.5	\$37.8	\$48.5	\$61.9	\$47.2	\$61.6	\$33.3	\$43.7	\$48.3	\$62.8	\$40.5	\$52.3

3.4 COST/BENEFIT ANALYSIS

The Cost/Benefit Analysis was conducted using an evaluation framework to quantify as objectively as possible the benefits and impacts of each alternative with respect to seven evaluation categories and 26 individual evaluation criteria. Each alternative was first scored according to the established evaluation criteria and the summary scores for each alternative were then compiled, interpreted, and discussed with stakeholders. The following sections describe the evaluation process and results.

3.4.1 Evaluation Criteria

The first step in the evaluation process was to identify the detailed measures to be analyzed or quantified for each evaluation criteria. **Table 9** displays each of the evaluation criteria, which were previously displayed in **Table 3**, as well as the specific measure used to quantify how well each alternative met the criteria. The measurements for each criterion were discussed and agreed to with the PMT, with a goal of ensuring that all the benefits and impacts of each alternative were being captured accurately.

Table 9. Evaluation Criteria and Measures

Evaluation Category	Evaluation Criteria	Measurement
Vehicular Traffic	T1. Reduces traffic congestion	Peak hour delay in study area, measured at key intersections and for the overall network.
	T2. Decreases traffic volumes on University Ave SE and 4th St SE	Daily traffic volumes on University Ave SE and 4th St SE in the study area.
	T3. Improves study area connectivity	Travel times on representative origin-destination pairs within the study area in peak hours.
	T4. Decreases interaction and conflicts between vehicular traffic and other modes	Daily traffic volumes at intersections with key bicycle and pedestrian crossings or connections.
	T5. Improves vehicular access to existing properties and uses	Number of vehicular access changes to existing land uses.
Other Modes (Ped/Bike/Transit)	OM1. Facilitates bicycle and pedestrian travel	Length of new bicycle and pedestrian facilities, and number of new connections to existing bicycle and pedestrian facilities and destinations.
	OM2. Facilitates transit use	Number of transit stops with new or improved bicycle and pedestrian connections.
	OM3. Improves multimodal environment and experience	Qualitative score of user experience based on lighting, path width, landscaping, and separation from traffic.
Railroad	RR1. Changes to existing rail operations	Acres of railroad property acquisition, removal or reduction in yard space, and other operations impacts.
Livability	L1. Creates public and open space	Area of potential new public space and green space, and number of open destinations created.
	L2. Creates connections to the Mississippi River	Number of new roadway, bicycle, and pedestrian connections to the river.
	L3. Improves cohesiveness of the community	Number of new roadway, bicycle, and pedestrian connections created, and number of neighborhoods connected.
	L4. Improves visual quality	Number of additions or reductions of desirable and undesirable visual elements, such as planted/green areas, viewsheds, and retaining walls.
	L5. Increases biodiversity	Acres of habitat created.
	L6. Traffic volumes remain in acceptable thresholds for street type	Number of roadway segments with forecast traffic and truck volumes greater than the appropriate threshold based on the existing roadway classification.
	L7. Impacts of traffic on adjacent properties and neighborhoods	Number of roadway segments with potential adverse physical impacts due to increased traffic, such as loss of parking, property acquisition, or changes to traffic patterns.
	L8. Impacts on historic character and features	Number of historic features or properties affected.
Economic Development	ED1. Improves access (all modes) to parcels identified for future development or redevelopment	Number, size, and type of parcels with new or improved or reduced access that are identified for development or redevelopment. Number of new jobs and households created by development or redevelopment, adjacent to new roadway or greenway segment.
	ED2. Improves access (all modes) to existing underutilized property not currently identified for redevelopment.	Number of parcels with new, improved, or reduced access that are currently underutilized but not identified for redevelopment.
Environmental Quality	EN1. Improves air quality	Number of intersections with LOS E/F operations in 2030 peak hours.
	EN2. Reduces noise impacts	Number of residential or mixed use parcels next to roadway segment with traffic volume increases.
	EN3. Reduces contaminated properties	Acres of contaminated sites cleaned up a result of the project.
	EN4. Improved storm water and water quality	Acres of additional impervious surface.
Plan Consistency	P1. Supports City of Minneapolis policies and Comprehensive Plan	Number of inconsistencies with City of Minneapolis key policies and plans.
	P2. Supports University of Minnesota policies and Master Plan	Number of inconsistencies with University of Minnesota key policies and plans.
	P3. Supports policies and goals of adopted neighborhood plans and other agency plans	Number of inconsistencies with key policies and plans of other organizations, such as Minneapolis Park and Recreation Board, University District Alliance, and Marcy-Holmes Neighborhood Association.

3.4.2 Alternatives Evaluation

Each alternative was analyzed in detail to quantify each of the evaluation criteria units of measure. This analysis was based primarily on the assumed layouts and cross sections shown in **Figures 26-29** and the traffic forecasting and modeling output for each alternative. A summary of the major findings of the analysis are shown in **Table 10** and a summary of the alternatives scoring by evaluation category are provided in **Table 11**. The possible points in each evaluation category were established based on the priority exercise completed in the first stakeholder workshop, as well as further input from the second stakeholder workshop (described in section 3.5). All scoring was based on a maximum possible score of 100 points. The full evaluation matrix, including detailed measurements for each criteria, are provided in **Appendix E**.

A graphic of the total score, and the breakdown of the score into the individual categories, is shown in **Figure 31**.

Figure 31. Alternatives Evaluation Scoring Total

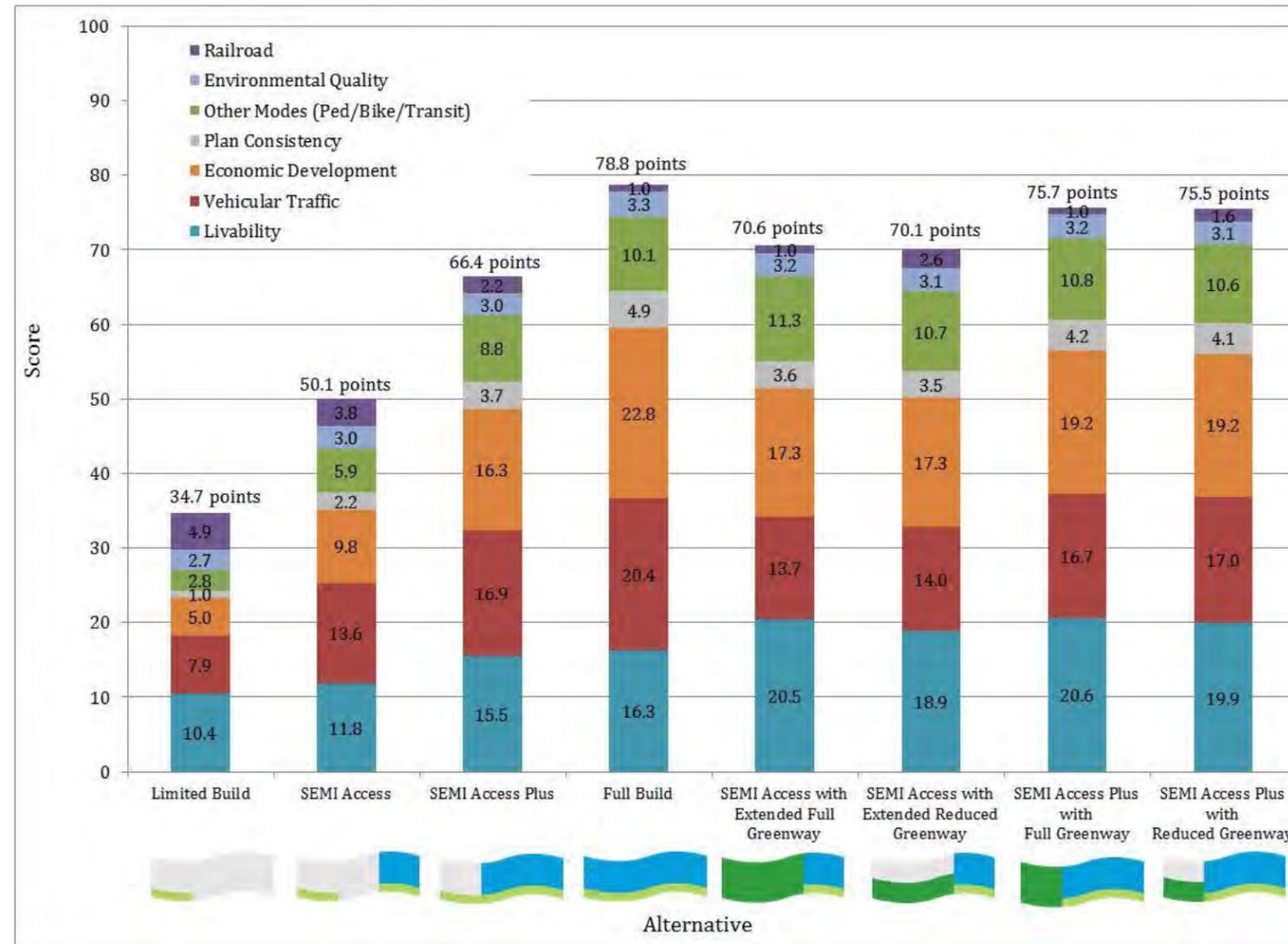


Table 10. Alternatives Evaluation Findings

	Limited Build	SEMI Access	SEMI Access Plus	Full Build	SEMI Access with Extended Greenway		SEMI Access Plus with Greenway	
					SEMI Access Extended Full Greenway 	SEMI Access Extended Reduced Greenway 	SEMI Access Plus Full Greenway 	SEMI Access Plus Reduced Greenway 
Benefits	<p>Daily traffic volumes on University Ave SE and 4th St SE = 27,000-45,500 vehicles per day</p> <p>5 key intersections operate at LOS E/F during 2030 peak hours</p> <p>9.9 min travel time from TH 280 to I-35W in 2030 PM peak</p> <p>4,000 feet of trail</p> <p>Limited green space</p> <p>Vehicle access to 6 redevelopment parcels</p> <p>Land use projections = 220 households and 700 jobs</p>	<p>Daily traffic volume reduced: 3,000 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-13%)</p> <p>1 intersection on University Ave SE improves from LOS E to LOS C in 2030 PM peak</p> <p>0.9 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>8,000 feet of trail</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>3.8 acres green space</p> <p>Vehicle access to 12 redevelopment parcels</p> <p>Land use projections = 550 households and 1,750 jobs</p>	<p>Daily traffic volume reduced: 3,500 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-15%) 1,000 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd SE (-2%)</p> <p>2 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>1.0 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>11,000 feet of trail</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>7.8 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 4 University parcels</p> <p>Land use projections = 690 households and 2,650 jobs</p>	<p>Daily traffic volume reduced: 4,000 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-17%) 2,500 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd SE (-6%) 5,500 vehicles on University Ave SE/4th St SE, I-35W to 17th Ave SE (-12%)</p> <p>3 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>2.0 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>11,000 feet of trail</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>9.9 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 7 University parcels</p> <p>Land use projections = 1,330 households and 4,500 jobs</p>	<p>Daily traffic volume reduced: 3,000 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-13%)</p> <p>1 intersection on University Ave SE improves from LOS E to LOS C in 2030 PM peak</p> <p>0.9 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>4,000 feet of trail</p> <p>8,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>14.9 acres green space</p> <p>Vehicle access to 12 redevelopment parcels</p> <p>Land use projections = 980 households and 3,400 jobs</p>	<p>Daily traffic volume reduced: 3,000 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-13%)</p> <p>1 intersection on University Ave SE improves from LOS E to LOS C in 2030 PM peak</p> <p>0.9 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>4,000 feet of trail</p> <p>8,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>7.5 acres green space</p> <p>Vehicle access to 12 redevelopment parcels</p> <p>Land use projections = 980 households and 3,400 jobs</p>	<p>Daily traffic volume reduced: 3,500 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-15%) 1,000 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd SE (-2%)</p> <p>2 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>1.0 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>7,000 feet of trail</p> <p>5,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>13.5 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 4 University parcels</p> <p>Land use projections = 1,010 households and 3,580 jobs</p>	<p>Daily traffic volume reduced: 3,500 vehicles on University Ave SE, Huron Blvd SE to TH 280 (-15%) 1,000 vehicles on University Ave SE/4th St SE, 17th Ave SE to Huron Blvd SE (-2%)</p> <p>2 intersections on University Ave SE improve from LOS E to LOS C/D in 2030 PM peak</p> <p>1.0 min travel time savings from TH 280 to I-35W in 2030 PM peak</p> <p>7,000 feet of trail</p> <p>5,000 feet of greenway</p> <p>Consistent with 2009 Grand Rounds Byway Master Plan</p> <p>9.7 acres green space</p> <p>Vehicle access to 15 redevelopment parcels and 4 University parcels</p> <p>Land use projections = 1,010 households and 3,580 jobs</p>
Impacts	Requires 0.2 acres of railroad right-of-way	Requires 4.1 acres of railroad right-of-way	Requires 9.6 acres of railroad right-of-way	Requires 13.8 acres of railroad right-of-way At-grade rail crossing near 17 th Ave SE Traffic volumes increased 1,500-2,000 vehicles per day on 2 nd St SE, 8 th Ave SE, and 11 th Ave SE	Requires 16.1 acres of railroad right-of-way	Requires 8.9 acres of railroad right-of-way	Requires 16.1 acres of railroad right-of-way	Requires 11.7 acres of railroad right-of-way
	Cost \$5.5 million	Cost \$21.8 million	Cost \$37.8 million	Cost \$61.9 million	Cost \$61.6 million	Cost \$43.7 million	Cost \$62.8 million	Cost \$52.3 million

Table 11. Alternatives Evaluation Scoring and Cost/Benefit Summary

Evaluation Category	Limited Build 	SEMI Access 	SEMI Access Plus 	Full Build 	SEMI Access with Extended Greenway		SEMI Access Plus with Greenway	
					Full Greenway 	Reduced Greenway 	Full Greenway 	Reduced Greenway 
Vehicular Traffic (24 points)	7.9	13.6	16.9	20.4	13.7	14.0	16.7	17.0
Other Modes (Ped/Bike/Transit) (13 points)	2.8	5.9	8.8	10.1	11.3	10.7	10.8	10.6
Railroad (5 points)	4.9	3.8	2.2	1.0	1.0	2.6	1.0	1.6
Livability (24 points)	10.4	11.8	15.5	16.3	20.5	18.9	20.6	19.9
Economic Development (24 points)	5.0	9.8	16.3	22.8	17.3	17.3	19.2	19.2
Environmental Quality (5 points)	2.7	3.0	3.0	3.3	3.2	3.1	3.2	3.1
Plan Consistency (5 points)	1.0	2.2	3.7	4.9	3.6	3.5	4.2	4.1
TOTAL (100 Points)	34.7	50.1	66.4	78.8	70.6	70.1	75.7	75.5
Total Project Cost (millions)	\$5.5	\$21.8	\$37.8	\$61.9	\$61.6	\$43.7	\$62.8	\$52.3
Cost Per Point (millions)	\$0.16	\$0.44	\$0.57	\$0.79	\$0.87	\$0.62	\$0.83	\$0.69

The results show that the five alternatives that include improvements for the full length of Granary Corridor (Full Build, SEMI Access with Extended Full Greenway, SEMI Access with Extended Reduced Greenway, SEMI Access Plus with Full Greenway, and SEMI Access Plus with Reduced Greenway) had the highest total scores. In addition, although these five alternatives have some significant differences among them, the total scores were within a few points of each other. The key findings from the evaluation and scoring process were as follows:

- While a roadway in the Granary Corridor has been envisioned as a traffic reliever for the area, the maximum reductions in 2030 daily traffic on University Ave SE/4th St SE would be expected to be 15 to 20 percent, or about a two minute travel time savings in the 2030 PM peak hour.
- The more improvements and investments that are made in the corridor (e.g., constructing three segments rather than only one segment), the greater the benefits that are realized. This is a generally expected result for a corridor that is currently underused and undeveloped.
- The evaluation categories that showed the most differentiation among categories were Vehicular Traffic, Livability, and Economic Development. While the roadway alternatives scored highest for Vehicular Traffic, they also had some impacts that resulted in lower Livability scores. The greenway alternatives clearly had the highest scores in the Livability category, but were not shown to relieve traffic congestion in the study area.

Since the evaluation scores were not converted to a dollar value, the cost/benefit ratios were calculated by dividing the total project cost by the total score for each alternative to yield a cost per point value. This measure shows that the most cost effective benefits are gained from the Limited Build alternative. This is due to the relatively low construction cost of the Limited Build alternative while still producing some

improvements in economic development with new parcel access and livability with construction of the University of Minnesota trail. Each of the segments of Granary Corridor require significant right-of-way acquisition, which in turn significantly impacts the cost per point calculation. Of the five full length alternatives, the SEMI Access with Extended Reduced Greenway was calculated as the most cost effective, based largely on the reduced right-of-way width and corresponding costs. In general, the Reduced Greenway alternatives were shown to have nearly the same benefits of the Full Greenway alternatives, but at significantly lower costs.

3.5 STAKEHOLDER INVOLVEMENT

3.5.1 Stakeholder Workshop

A second workshop was held for the Granary Corridor project on November 29, 2011 at the Van Cleve Recreation Center, with approximately twenty-six stakeholders in attendance representing the organizations and agencies listed in the Community

Involvement section earlier in this report. The purpose of the workshop was to present the Cost/Benefit Analysis process and preliminary results and to gather stakeholder input on the alternatives and evaluation results.

Following a presentation by the project team, stakeholders were divided into three small groups for discussion. The purpose of the small group discussions was to understand the alternatives, how they were evaluated, and provide input into the process. The groups were asked to focus first on understanding the factors influencing the scores for each alternative and to answer the following three questions:

- Do the results make sense?
- What would you score or weight differently?
- What are the group's top four issues or comments?

The major themes reported by the small groups were as follows:

- The Economic Development evaluation criteria should better differentiate between residential and commercial/industrial developments. Roadway alternatives would be expected to score better than Greenway alternatives in this category.
- The weighting of the Plan Consistency evaluation category should be reduced to avoid unfairly biasing the scoring towards roadway alternatives, which are currently included in nearly all the planning documents.
- Greenway options that provide enhanced bicycle and pedestrian facilities, but within a narrower right-of-way in order to reduce costs, would be highly desirable.
- Acquisition of railroad right-of-way is a significant barrier and one that will require cooperation from multiple agencies.

This input was incorporated into the evaluation process by modifying the Economic Development scoring to take into account projected households and employment adjacent to the Granary Corridor segments, reducing the possible points in the Plan Consistency category from 13 points to 5 points, and introducing two Reduced Greenway alternatives to the analysis. Following the workshop, the Reduced Greenway alternatives were analyzed and cost estimates were prepared, consistent with the methodologies used for the other six alternatives.

All the comments received at the workshop, as well as the stakeholders in attendance, are listed in **Appendix F**.



Encouraging multimodal transportation was identified as a priority of stakeholders in the neighborhoods near Granary Corridor.

3.5.2 Community Meeting

A community meeting was held on May 9, 2012 at Van Cleve Recreation Center that was advertised and open to the public. The purpose of the meeting was to present the overall project process and evaluation results to the public and gather input from a wide audience of community members. The project team gave an overview of the project and responded to questions and comments both before and after the presentation. More than 60 people attended the meeting. Project materials were posted on the project website following the meeting, and comments were accepted at the meeting and until June 30, 2012. A full

list of the meeting attendees and comments received are provided in **Appendix G**.

The most common concerns expressed by community members in attendance at the meeting were regarding increased traffic, especially truck traffic, on 2nd St SE, Main St SE, and local streets in the Marcy-Holmes and Nicollet Island East Bank neighborhoods as a result of the Full Build alternative. Following the meeting, comment letters were received from the Prospect Park East River Road Improvement Association and the Marcy-Holmes Neighborhood Association, which are also included in **Appendix G**.

3.6 NEXT STEPS

The results of this study are intended to provide decision makers and elected officials with a foundation of technical information on which to set policies and priorities for Granary Corridor. Due to the significant cost of each of the alternatives and the challenges associated with right-of-way acquisition in this area, the partnership, cooperation, and resources of multiple stakeholders will be needed if any of the alternatives are to be advanced. Key stakeholders include the University of Minnesota, Hennepin County, Minneapolis Park and Recreation Board, the City of Saint Paul, Metropolitan Council and others. The City

of Minneapolis intends to continue discussions about the Granary Corridor to take advantage of potential future opportunities and to actively plan for the future of the corridor.





GRANARY CORRIDOR STUDY

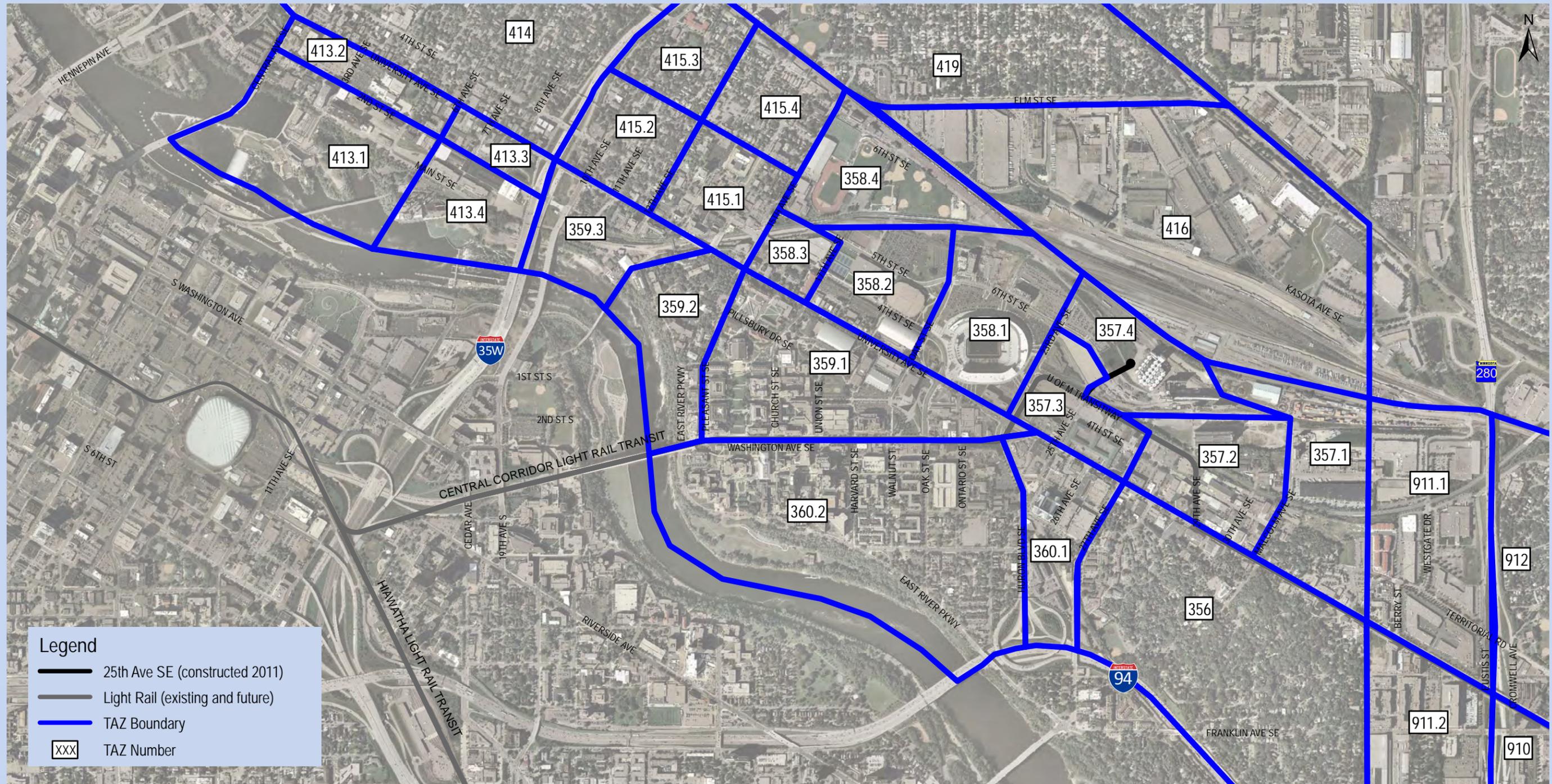


Kimley-Horn
and Associates, Inc.

APPENDIX A: Traffic Forecasting Analysis and Results



Figure A-1. Granary Corridor Forecasting Traffic Analysis Zones





GRANARY CORRIDOR STUDY



Kimley-Horn
and Associates, Inc.

Table A-1. 2030 Traffic Forecasts

Roadway		Daily Traffic Volume																		
From	To	Existing	1	2	3	4	2A	3A	4A	3B	3C	3D	3E	3CAK	4H	1F	3J	3CAI	3CA	4HA
University Ave SE																				
Central Ave	5th Ave SE	13,000	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	10,500	11,000	10,500	10,500	10,500	10,500	10,500
5th Ave SE	I-35W	18,200	20,000	20,000	20,000	20,000	20,000	20,500	20,500	20,000	20,000	20,000	20,000	20,000	20,000	19,000	20,000	20,000	20,000	20,000
I-35W	15th Ave SE	19,500	22,500	22,000	19,500	22,000	22,000	19,500	22,000	18,500	18,500	19,000	20,000	18,000	22,000	20,500	22,000	19,000	18,500	22,000
15th Ave SE	Huron Blvd SE	18,100	21,500	21,000	20,000	21,000	21,000	20,000	21,000	20,000	20,000	20,500	20,000	20,000	21,000	22,000	21,500	21,000	20,000	20,500
Huron Blvd SE	27th Ave SE	17,000	23,500	20,500	19,500	20,500	20,500	19,500	20,500	19,500	19,500	19,500	19,000	19,500	20,000	24,000	23,500	20,500	19,500	20,000
27th Ave SE	Malcolm Ave SE	17,000	23,500	23,000	23,000	21,000	20,500	19,500	20,500	22,500	23,000	23,000	23,000	19,500	23,000	24,000	23,500	20,500	19,500	20,500
Malcolm Ave SE	TH 280	24,200	25,000	25,500	25,500	25,500	22,000	21,000	23,500	25,000	25,500	25,500	25,500	21,000	25,500	25,500	25,000	21,000	21,000	23,500
TH 280	Raymond Ave	27,000	27,000	27,500	27,500	27,500	27,000	27,000	27,000	27,500	27,500	27,500	27,500	27,000	27,500	27,000	27,500	27,000	27,000	27,000
4th St SE																				
Oak St SE	15th Ave SE	15,100	19,000	19,000	17,500	19,000	19,000	17,000	19,000	18,000	16,500	18,000	18,000	17,000	19,000	19,500	19,000	17,000	16,000	19,000
15th Ave SE	I-35W	20,400	23,000	23,500	23,000	23,500	23,000	23,000	23,500	25,500	23,000	22,500	23,500	23,000	23,500	22,500	23,500	22,500	22,500	23,500
I-35W	5th Ave SE	15,900	18,500	19,000	18,500	19,000	18,500	18,500	18,500	20,500	18,000	18,500	19,000	18,500	19,000	18,000	19,000	18,500	18,500	18,500
5th Ave SE	Central Ave	14,900	9,700	9,900	9,800	9,900	9,800	10,000	9,700	9,700	9,800	9,800	9,900	9,900	9,900	9,900	10,000	10,000	9,900	9,900
5th St SE																				
Oak St SE	17th Ave SE	5,400	5,900	6,800	6,600	6,900	6,800	6,700	6,900	6,000	6,600	6,300	5,400	5,400	6,300	6,000	5,700	8,400	6,700	6,200
17th Ave SE	15th Ave SE	2,700	3,300	3,500	2,900	3,600	3,500	2,900	3,500	2,600	2,500	2,600	2,900	2,500	3,600	3,300	3,300	2,500	2,600	3,500
6th St SE																				
25th Ave SE	23rd Ave SE		5,600	8,100	7,000	7,300	8,200	7,100	7,300	6,800	6,800	6,800	6,700	6,900	7,000	5,600	5,400	9,700	6,900	6,900
23rd Ave SE	Oak St SE		8,000	9,800	9,000	10,000	9,900	9,100	10,000	8,800	8,700	8,900	8,600	8,900	9,100	8,100	7,800	11,500	8,700	9,000
10th Ave SE																				
2nd St SE	University Ave SE	9,800	14,000	14,000	14,000	14,500	14,000	14,000	14,000	14,000	14,500	21,000	14,000	14,000	14,500	14,500	14,500	14,500	14,500	
5th St SE	8th St SE	9,100	7,700	7,700	7,400	7,800	7,700	7,300	7,800	7,700	7,400	7,100	7,500	7,100	7,900	7,400	7,900	7,200	7,200	
15th Ave SE																				
Pillsbury Dr	University Ave SE	5,400	5,500	5,600	5,200	5,700	5,500	5,500	5,400	5,400	5,400	5,300	5,400	5,700	5,600	5,200	5,600	5,400	5,200	5,300
5th St SE	8th St SE	12,600	16,000	16,000	15,500	16,000	16,000	15,000	16,000	15,500	15,000	15,000	15,000	14,500	16,500	15,500	16,000	15,000	15,500	16,000
17th Ave SE																				
University Ave SE	4th St SE	4,100	4,700	4,800	5,100	4,800	4,900	5,200	4,900	4,700	4,900	4,700	4,800	4,900	4,800	4,700	4,800	5,000	5,000	4,800
4th St SE	5th St SE	3,500	3,500	3,800	4,200	3,900	3,800	4,200	4,000	3,400	4,300	3,700	3,200	4,000	4,000	3,700	3,600	4,200	4,400	4,000
5th St SE	Granary Road		0	0	4,400	0	0	4,500	0	3,400	5,800	4,700	0	5,500	1,500	0	300	8,900	5,800	1,500
Oak St SE																				
Fulton St SE	Washington Ave SE	5,700	9,200	9,200	9,300	9,200	9,000	9,500	9,000	9,400	9,400	9,400	9,600	9,400	9,200	9,300	9,400	9,400	9,300	9,400
Washington Ave SE	University Ave SE	7,800	12,500	12,500	13,000	12,000	12,500	12,500	12,500	12,500	13,000	12,500	13,000	13,000	12,500	12,500	12,000	13,000	13,000	12,500
University Ave SE	4th St SE		13,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,500	12,000	12,000	12,000	12,000	13,000	12,500	12,500	12,500	12,000
4th St SE	5th St SE		2,500	2,400	3,300	2,400	2,400	3,200	2,400	2,200	3,300	2,700	2,900	2,900	2,400	2,600	2,400	3,400	3,400	2,300
5th St SE	Granary Road		0	0	250	150	0	250	150	150	250	250	2,400	400	0	0	0	0	150	0
Huron Blvd SE																				
Fulton St SE	Washington Ave SE	22,000	22,500	22,000	22,500	22,000	22,000	22,000	22,000	22,500	22,500	22,000	22,000	22,000	22,000	22,500	23,000	22,000	22,500	22,000
Washington Ave SE	University Ave SE		6,000	5,900	5,600	6,000	5,600	5,700	5,600	5,600	5,800	5,700	5,700	5,700	5,900	5,600	6,200	5,800	5,800	5,600
University Ave SE	4th St SE		2,600	2,400	2,300	2,400	2,500	2,300	2,500	2,100	2,100	2,200	2,300	2,300	2,300	2,600	2,600	2,100	2,100	2,400

GRANARY CORRIDOR STUDY

Table A-1 continued. 2030 Traffic Forecasts

Roadway		Daily Traffic Volume																		
From	To	Existing	1	2	3	4	2A	3A	4A	3B	3C	3D	3E	3CAK	4H	1F	3J	3CAI	3CA	4HA
25th Ave SE																				
University Ave SE	4th St SE		6,500	4,800	4,700	4,700	4,700	4,900	4,800	4,500	4,800	4,600	4,900	4,800	4,700	6,600	6,400	4,900	4,800	4,800
4th St SE	6th St SE		5,900	3,000	3,200	2,600	3,100	3,300	2,900	2,900	3,300	3,000	3,200	3,200	2,600	6,000	5,900	3,700	3,400	2,900
6th St SE	Granary Road		3,500	7,000	5,700	6,700	7,000	5,800	6,700	5,600	5,400	5,500	5,300	5,600	6,300	3,500	3,300	7,800	5,500	6,400
27th Ave SE																				
Franklin Ave SE	University Ave SE	3,700	5,400	5,300	5,200	5,400	5,300	5,200	5,300	5,100	5,000	4,900	5,100	4,900	5,300	5,300	5,400	5,100	5,000	5,400
University Ave SE	4th St SE		3,300	3,600	3,600	3,600	4,000	3,800	4,000	3,500	3,600	3,500	3,700	3,700	3,700	3,100	3,300	3,800	3,800	3,900
4th St SE	Granary Road		0	1,200	1,500	1,300	2,000	2,000	1,800	1,400	1,500	1,300	1,800	2,000	1,400	0	0	1,800	2,100	1,900
Malcolm Ave SE																				
University Ave SE	4th St SE		4,300	3,900	3,900	3,900	3,700	3,800	3,800	3,700	3,700	3,600	3,800	3,600	3,900	4,200	4,100	3,600	3,700	3,900
4th St SE	5th St SE		6,000	4,200	4,000	4,100	3,500	3,300	3,400	3,900	3,900	3,900	4,000	3,100	4,100	6,200	6,100	3,300	3,300	3,500
5th St SE	Granary Road		0	2,900	3,300	2,900	1,000	1,200	1,000	3,300	3,500	3,300	3,300	1,300	3,000	0	0	1,100	1,300	1,100
Eustis St																				
Franklin Ave	University Ave		5,500	5,600	5,600	5,600	5,500	5,700	5,500	5,400	5,800	5,700	5,600	5,600	5,600	5,500	5,600	5,600	5,500	5,500
University Ave	Territorial Rd		8,900	8,900	9,000	8,800	8,900	8,700	8,800	8,900	8,900	9,000	8,900	8,900	8,800	9,000	9,100	8,900	8,900	8,800
Territorial Rd	TH 280		17,500	17,500	17,000	17,000	17,500	17,000	17,500	17,000	17,000	17,500	17,500	17,000	17,500	17,000	17,500	17,500	17,000	17,500
Cromwell Ave																				
Franklin Ave	University Ave		5,700	5,500	5,600	5,400	5,500	5,600	5,500	5,500	5,600	5,800	5,500	5,700	5,500	5,600	5,700	5,700	5,700	5,600
University Ave	TH 280 Ramp		10,500	11,000	10,500	11,000	10,500	10,500	10,500	10,500	10,500	11,000	10,500	10,500	11,000	10,500	10,500	10,500	10,500	10,500
TH 280 Ramp	Territorial Rd		1,500	1,500	1,500	1,500	1,400	1,500	1,400	1,400	1,500	1,500	1,500	1,400	1,500	1,600	1,500	1,400	1,500	1,500
Territorial Rd	TH 280		6,900	6,900	6,600	6,800	6,800	6,700	6,800	6,900	6,800	6,700	6,700	6,600	6,800	6,900	6,800	6,700	6,800	6,800
Territorial Rd																				
Raymond Ave	TH 280	5,100	8,500	8,400	8,100	8,300	8,200	8,300	8,300	8,300	8,400	8,200	8,300	8,200	8,400	8,400	8,300	8,200	8,200	8,300
TH 280	Westgate Dr	6,100	9,900	10,000	9,900	10,000	10,000	10,000	10,000	9,900	10,000	9,900	10,000	10,000	10,000	10,000	9,900	10,000	10,000	10,000
Franklin Ave E																				
Emerald St	East River Pkwy	7,100	11,500	11,500	11,500	11,500	11,500	11,000	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500	11,500
East River Pkwy																				
St Anthony Ave	Franklin Ave SE	4,300	4,800	4,700	4,900	4,700	4,800	4,900	4,800	4,800	4,700	4,700	4,900	4,800	4,800	4,900	4,800	4,800	4,800	4,800
Franklin Ave SE	Oak St SE	5,600	7,800	7,700	7,600	7,700	7,600	7,600	7,700	7,600	7,500	7,600	7,500	7,500	7,700	7,600	7,700	7,600	7,500	7,600
Oak St SE	Washington Ave SE	5,700	9,300	9,200	9,300	9,200	9,200	9,200	9,200	8,900	9,200	9,300	9,200	9,200	9,200	10,500	9,400	9,300	9,100	9,400
Washington Ave SE	Arlington St SE	6,200	7,400	7,400	7,500	7,400	7,500	7,400	7,500	7,300	7,400	7,400	7,500	7,400	7,400	8,400	7,500	7,300	7,200	7,500
Arlington St SE	University Ave SE	3,400	3,700	3,600	3,600	3,700	3,600	3,200	3,600	3,400	3,400	3,500	3,300	3,300	3,600	6,200	3,700	3,700	3,500	3,700
Main St SE Connection			0	0	0	0	0	0	0	0	0	0	0	0	0	4,100	0	0	0	0
Washington Ave SE																				
University Ave SE	Huron Blvd SE		8,600	8,800	8,500	8,700	8,800	8,500	8,800	8,700	8,500	8,500	8,300	8,400	8,800	8,700	8,600	8,300	8,400	8,700
Huron Blvd SE	Oak St SE	14,800	4,800	4,300	4,300	4,300	4,800	4,300	4,300	4,800	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300	4,300
Oak St SE	Walnut St SE	18,800	4,200	4,700	4,200	4,700	4,700	4,200	4,700	4,200	4,200	4,200	4,200	4,200	4,700	4,200	4,200	4,200	4,200	4,200
East River Pkwy	Cedar Ave S	21,300	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	11,000	10,500	11,500	11,000	11,000	11,000
8th St SE																				
15th Ave SE	10th Ave SE	4,500	7,000	7,000	6,900	7,000	7,100	6,800	7,100	7,300	6,700	6,700	6,700	6,800	7,100	6,800	6,900	6,800	6,800	7,000
10th Ave SE	8th Ave SE	8,200	9,400	9,500	9,300	9,500	9,600	9,200	9,500	9,700	9,300	9,300	9,100	9,200	9,700	9,100	9,500	9,300	9,200	9,500

Table A-1 continued. 2030 Traffic Forecasts

Roadway From To		Daily Traffic Volume																		
		Existing	1	2	3	4	2A	3A	4A	3B	3C	3D	3E	3CAK	4H	1F	3J	3CAI	3CA	4HA
I-35W																				
8th St SE	University Ave SE	105,000	153,000	152,000	152,000	153,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000	152,000
University Ave SE	Washington Ave SE	109,000	162,000	161,000	161,000	161,000	161,000	161,000	160,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000	161,000
I-94																				
Cretin Ave	TH 280	160,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000	185,000
TH 280	Huron Blvd SE	185,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	177,000	178,000	177,000	177,000	177,000
Huron Blvd SE	Riverside Ave	154,000	171,000	171,000	170,000	171,000	171,000	170,000	171,000	171,000	170,000	170,000	170,000	170,000	170,000	170,000	171,000	170,000	170,000	171,000
TH 280																				
Energy Park Dr	Territorial Rd	60,000	71,000	71,000	70,500	71,000	71,000	70,500	71,000	71,000	70,500	71,000	70,500	70,500	71,000	71,000	71,000	70,500	70,500	71,000
Territorial Rd	I-94	39,500	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000	46,000
Central Ave																				
2nd St SE	4th St SE	17,400	17,500	17,500	18,000	17,500	17,500	18,000	17,500	17,500	18,000	17,500	17,500	18,000	17,500	18,000	17,500	17,500	17,500	17,500
4th St SE	Hennepin Ave	13,100	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
6th Ave SE																				
Main St SE	University Ave SE	2,200	3,700	4,100	4,200	4,100	3,900	4,000	4,000	3,500	4,100	4,200	4,000	4,300	4,000	2,500	3,800	4,000	4,000	4,000
University Ave SE	4th St SE	1,700	2,000	2,100	2,100	2,200	2,000	2,000	2,100	1,900	2,000	2,000	2,100	2,200	2,100	1,200	1,900	1,800	2,000	2,000
8th Ave SE																				
2nd St SE	University Ave SE	1,000	1,200	1,000	2,100	1,000	1,100	2,000	1,200	1,600	1,800	900	1,800	1,500	1,200	1,100	1,200	1,500	1,600	1,500
University Ave SE	4th St SE	1,000	1,500	1,400	1,400	1,400	1,300	1,600	1,300	2,300	1,600	1,500	1,700	1,400	1,400	1,500	1,600	1,700	1,300	1,300
2nd St SE																				
Central Ave	6th Ave SE	1,800	2,900	2,900	3,100	2,800	2,900	3,200	3,100	2,600	3,300	2,800	3,300	3,100	2,800	3,100	2,900	3,300	3,200	2,800
6th Ave SE	11th Ave SE	2,000	3,500	3,500	4,700	3,400	3,600	4,800	3,700	2,700	5,100	3,600	4,300	4,800	3,500	3,000	3,500	4,800	5,100	3,600
11th Ave SE																				
2nd St SE	University Ave SE	2,000	3,500	3,500	0	3,400	3,600	0	3,600	4,000	3,000	3,600	0	2,900	3,500	3,100	3,500	2,900	3,100	3,600
14th Ave SE																				
University Ave SE	4th St SE		1,500	1,500	1,600	1,500	1,500	1,300	1,500	1,300	1,500	1,400	1,300	1,300	1,500	1,900	1,500	1,600	1,400	1,500
Main St SE																				
Hennepin Ave	Central Ave	2,100	3,100	3,300	3,600	3,300	3,200	3,400	3,300	2,900	3,600	3,500	3,400	3,700	3,200	4,300	3,100	3,400	3,500	3,300
Central Ave	6th Ave SE	2,200	3,100	3,300	3,600	3,300	3,200	3,400	3,300	2,900	3,600	3,500	3,400	3,700	3,200	4,300	3,100	3,400	3,500	3,300
East of 6th Ave SE			450	500	500	500	500	500	500	500	500	500	500	500	500	4,200	500	500	500	500
Granary Road																				
Westgate Dr	Malcolm Ave SE		0	0	0	0	3,500	3,600	3,500	0	0	0	0	3,600	0	0	0	3,600	3,700	3,700
Malcolm Ave SE	25th Ave SE		0	6,600	9,300	7,400	7,200	9,700	7,900	8,500	9,500	8,900	9,600	9,800	7,700	0	0	7,900	9,800	9,300
25th Ave SE	Oak St SE		0	0	4,300	1,200	0	4,400	1,400	3,500	4,900	4,100	5,400	4,800	1,800	0	300	0	4,900	4,000
Oak St SE	17th Ave SE		0	0	4,500	0	0	4,600	0	3,600	5,200	4,300	7,700	5,200	1,500	0	300	0	5,000	3,800
17th Ave SE	11th Ave SE / 2nd St SE		0	0	8,600	0	0	8,800	0	6,600	11,000	8,700	7,700	10,500	0	0	0	8,900	10,500	0



GRANARY CORRIDOR STUDY



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APPENDIX B: Opinion of Probable Cost Technical Memorandum

Memorandum

To: Mr. Bill Fellows
 City of Minneapolis Public Works
 Transportation Planning and Engineering Division

From: Mark Bishop, P.E.

Date: August 31, 2011

Subject: Granary Corridor – Cost/Benefit Analysis
 Baseline Opinion of Probable Cost Ranges

This memorandum documents the assumptions and methodology we used to develop a range of preliminary baseline opinion of probable costs (OPC) for Baseline Scenario 3. This OPC is an update of costs identified in past studies for the corridor and is intended to provide the City a general understanding of the expected costs for the scenarios that will be analyzed in more detail in Phase 2 of the study.

This OPC generally references past study results, past cost evaluations, and geometrics that have been prepared during Phase 1 of this study. In addition, an assessment of the range of environmental and right-of-way potential costs is included in this analysis.

OPC Methodology

To determine general roadway construction costs (removals, storm, sanitary, water and pavements), an average cost per linear foot was developed and then applied to the total length of roadway proposed. To determine the average cost, the OPC for the 25th Ave SE project was used for reference since it has a similar cross section to the proposed Granary section. Our analysis concluded that a cost of \$700 to \$900 per linear foot would be appropriate to apply to the length of proposed roadway (both Granary Road and other street connections).

Retaining wall limits and areas were estimated based off the LIDAR data obtained from the City. It was determined that approximately 20,000 to 25,000 square feet of retaining wall would be needed at various locations. This will be refined further during the more detailed Phase 2 analysis.

Traffic signing and striping was determined to be \$100,000 per mile based on previous project experience. Three signalized intersections were included at \$250,000 each. Roadway lighting was determined to cost about \$370,000 to \$475,000 per mile based on applying costs realized on other similar projects. Other construction costs include mobilization, which was assumed to be 10 percent of the construction cost.

To determine environmental cleanup costs, contaminated properties identified in the AUAR were used. The area of roadway right-of-way was measured against the contaminated areas identified in the AUAR. The combined total contaminated property area was assigned cleanup prices ranging from \$1.50 to \$3.00 per square foot.

Rail costs were estimated using prices from recent projects. It was assumed that approximately 3,500 feet of track that is located within the proposed roadway areas would need to be removed. It was also assumed that the project would be required to reconstruct approximately 2,000 to 2,500 feet of rail generally west of Oak St SE and south of the proposed Granary Road right-of-way in that area. An allowance for new signalized, at-grade crossings of Granary Road was also included.

Right-of-way requirements were based on an 80-foot Granary Road right-of-way extending from the western limits of the corridor to 17th Ave SE and then a 100-foot right-of-way from 17th Ave SE east to the City limits. Right-of-way requirements due to cross street connections and a 125,000 square foot drainage pond (East Pond) were also included in the analysis.

The right-of-way was divided into four categories for costing purposes: public (University of Minnesota), private, Union Pacific (UP) Railroad, and Burlington Northern Santa Fe (BNSF) Railroad. The unit cost for private right-of-way was determined by averaging the property values obtained from the Hennepin County GIS website for the affected parcels and comparing these values against right-of-way information provided by the City for various properties at the east end of the corridor. The unit cost for railroad right-of-way was based on information provided by the City from recent railroad property negotiations related to the 25th Ave SE project. The unit cost for the University of Minnesota right-of-way was assumed to be similar to railroad or other private properties of similar existing use in the project area. An additional cost of \$4 to \$5 million was assumed for relocating the railcar maintenance business currently operating on the Minnesota Commercial Railroad tracks.

Indirect costs of engineering and construction administration were estimated as 20 percent of construction cost and a contingency estimate of 40% of construction cost was also added based on the conceptual level of the analysis and design and the uncertain timeline for construction.

The range of total project costs for Baseline Scenario 3 is approximately \$53M to \$69M. These costs will be developed in more detail for each of the scenarios to be studied in Phase 2.



GRANARY CORRIDOR STUDY



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APPENDIX C: Community Workshop 1



Community Workshop 1
 July 27, 2011, 9-11 AM
 Metropolitan Design Center, University of Minnesota

Attendees

Edna Brazaitis, Nicollet Island East Bank Neighborhood Association
 Bruce Chamberlain, Minneapolis Park and Recreation Board
 John DeWitt, Prospect Park East River Road Improvement Association
 Bill Fellows, City of Minneapolis Public Works
 Pete Goelzer, Nicollet Island East Bank Neighborhood Association
 Robin Garwood, City of Minneapolis Ward 2 Council Member Aide
 Diane Hofstede, City of Minneapolis Ward 3 Council Member
 Rick Johnson, University of Minnesota
 Leslie Krueger, University of Minnesota
 Monique Mackenzie, University of Minnesota
 Haila Maze, City of Minneapolis Community Planning and Economic Development
 Michael McLaughlin, Southeast Business Association
 Joan Menken, Southeast Como Improvement Association
 Miles Mercer, City of Minneapolis Community Planning and Economic Development
 Ellen Muller, City of Saint Paul
 Orlyn Miller, University of Minnesota
 Nancy Rose Pribyl, Stadium Village Commercial Association
 Cordelia Pierson, Minneapolis Riverfront Partnership
 Richard Poppele, Prospect Park East River Road Improvement Association
 Jo Radzwill, Marcy-Holmes Neighborhood Association
 Ignacio SanMartin, University of Minnesota and University District Alliance
 Penelope Simison, City of Saint Paul
 Brian Swanson, University of Minnesota
 Julia Wallace, Prospect Park East River Road Improvement Association
 John Witt, Hennepin County Public Works

Comments – Group Discussion

- How is St Paul being engaged?
- St. Paul West Midway Study underway to look at zoning, jobs
- Extending Granary to 17th takes load off Oak
- Modeling of truck traffic – need to know more about how options address truck traffic
- If Granary doesn't connect to St. Paul, all the traffic will be on Malcolm
- University of Minnesota needs rail access to remain, even with conversion from coal to biomass
- 2nd St. SE becoming residential – don't want truck traffic
- Focus on pedestrians, not just cars and trucks
- University Ave and 4th St SE are not pedestrian streets today; 8th St. SE now also impacted by increased traffic – limits development because people can't cross the street
- No Build pushes truck traffic to Como and E Hennepin, need to accommodate elsewhere, like Kasota
- 17th serves bikes well traveling from downtown to East Bank
- Granary to the east would also serve stadium events
- Costs of enhanced trench need to include investments beyond just infrastructure
- Amenities need to be included; green space
- Should we consider undoing one way on University Ave and 4th SE SE and what would the limits be? Does Granary reduce traffic enough to allow changes to University Ave and 4th St SE?
- Consider connection of Granary to 5th St SE/6th St SE instead of building the middle section
- Consider opening transitway to all traffic
- Significant neighborhood concerns with recommended western connection
- Why isn't railroad here?
- Dirt road on RR property could be a possible connection?
- Use 5th/6th for central section; How does regional traffic mix with local traffic
- Direct connection to Huron using 25th Ave
- Impacts to adjacent properties should be expanded to include neighborhoods
- Experience of River corridor is important; more than a roadway- quality, ecological
- Need to include Park Board in Plan Consistency – Missing Link (Grand Rounds), East River Parkway
- Capture neighborhood impacts better
- Quality of neighborhood is important and the pedestrian experience
- Change “Accommodates” to “Encourage” bike/pedestrian travel and transit
- Travel time is also a livability issue
- Plan consistency - Mississippi Critical Area, DNR
- Encourage greater density (economic development) where there is infrastructure to support it



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APPENDIX D: Phase 2 Traffic Analysis Results



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Table D-1. 2030 Peak Hour Intersection Operations

Intersection	Intersection Control	Year 2030 Peak Hour Intersection LOS (AM / PM)			
		Limited Build	SEMI Access	SEMI Access Plus	Full Build
4 th St SE / 6 th Ave SE	Signalized	A / A	A / A	A / A	A / A
4 th St SE / 8 th Ave SE	Unsignalized	A / A	A / A	A / A	A / A
4 th St SE / I-35W SB Ramp	Signalized	B / B	B / B	B / B	B / B
4 th St SE / I-35W NB Ramp	Signalized	A / B	B / B	A / B	A / C
4 th St SE / 10 th Ave SE	Signalized	B / D	B / D	B / D	B / D
4 th St SE / 11 th Ave SE	Unsignalized	A / C	A / C	A / C	A / C
4 th St SE / 14 th Ave SE	Signalized	A / A	A / A	A / A	A / A
4 th St SE / 15 th Ave SE	Signalized	B / C	B / C	B / C	B / C
5 th St SE / 15 th Ave SE	Signalized	E / D	E / D	D / E	D / D
8 th St SE / 15 th Ave SE	Unsignalized	F / B	F / B	F / B	F / C
4 th St SE / 17 th Ave SE	Signalized	B / B	B / B	B / B	B / B
4 th St SE / Oak St SE	Signalized	B / B	B / B	B / B	B / B
5 th St SE / Oak St SE	Signalized	B / B	B / B	B / B	B / B
University Ave SE / and 6 th Ave SE	Signalized	B / C	D / B	B / B	B / B
Main St SE / 6 th Ave SE	Unsignalized	A / A	A / A	A / A	A / A
University Ave SE / 8 th Ave SE	Unsignalized	F / B	F / A	F / A	F / C
2 nd St SE / 8 th Ave SE	Unsignalized	A / A	A / A	A / A	A / A
University Ave SE / I-35W SB Ramp	Signalized	C / C	C / C	C / C	C / C
University Ave SE / I-35W NB Ramp	Signalized	F / B	F / B	F / B	E / B
University Ave SE / 10 th Ave SE	Signalized	C / C	C / C	C / C	C / D
University Ave SE / 11 th Ave SE	Signalized	A / A	B / A	A / A	A / C
2 nd St SE / 11 th Ave SE	Unsignalized	-	-	-	A / B

Table D-1 continued. 2030 Peak Hour Intersection Operations

Intersection	Intersection Control	Year 2030 Peak Hour Intersection LOS (AM / PM)			
		Limited Build	SEMI Access	SEMI Access Plus	Full Build
University Ave SE / 14 th Ave SE	Signalized	A / C	A / C	A / C	A / B
University Ave SE / 15 th Ave SE	Signalized	B / E	C / D	B / E	B / D
University Ave SE / 17 th Ave SE	Signalized	B / B	B / B	B / B	B / B
University Ave SE / Oak St SE	Signalized	C / C	B / C	B / C	C / C
University Ave SE / Huron Blvd SE/23 rd Ave SE	Signalized	D / E	D / D	D / D	D / D
University Ave SE / Washington Ave SE	Signalized	A / C	A / B	A / B	A / B
Washington Ave SE / Huron Blvd SE	Signalized	B / B	B / B	B / B	B / B
University Ave SE / 25 th Ave SE	Signalized	A / C	A / A	A / A	A / A
University Ave SE / 27 th Ave SE	Signalized	B / E	B / C	A / C	A / C
University Ave SE / Malcolm Ave SE	Signalized	B / C	B / C	B / C	B / C
University Ave / Eustis St	Signalized	C / D	C / C	B / D	B / D
University Ave / Cromwell Ave	Signalized	C / D	C / D	C / D	C / D
Franklin Ave / Cromwell Ave	Signalized	E / F	D / F	F / F	F / F
Territorial Rd / Eustis St	Signalized	C / C	C / D	C / C	C / C
Territorial Rd / Cromwell Ave	Unsignalized	A / A	A / A	A / A	A / A
Territorial Rd / Westgate Dr	Unsignalized	-	A / B	A / A	A / B
Granary Rd / Westgate Dr	Unsignalized	-	A / A	A / A	A / A
Granary Rd / Malcolm Ave SE	Unsignalized	-	A / A	A / A	A / A
Granary Rd / 27 th Ave SE	Unsignalized	-	A / A	A / A	A / A
Granary Rd / 25 th Ave SE	Unsignalized	-	A / A	A / A	A / A
Granary Rd / Oak St SE	Unsignalized	-	-	A / A	A / A
Granary Rd / 17 th Ave SE	Unsignalized	-	-	A / A	A / B



GRANARY CORRIDOR STUDY



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APPENDIX E: Alternatives Evaluation Matrix

Table E-1. Granary Corridor Evaluation Matrix

Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
Vehicle Traffic																
T1. Reduces traffic congestion <i>Measurement:</i> ➤ Number of intersections with LOS E/F operations ➤ Average roadway network delay per vehicle	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 3 intersections LOS E/F. <u>Network Average Delay</u> AM = 2.5 minutes delay/vehicle. PM = 3.7 minutes delay/vehicle.	1.0	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 2 intersections LOS E/F. <u>Network Average Delay</u> AM = 2.6 minutes delay/vehicle. PM = 3.4 minutes delay/vehicle.	1.7	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 1 intersection. LOS E/F. <u>Network Average Delay</u> AM = 2.5 minutes delay/vehicle. PM = 2.9 minutes delay/vehicle.	3.5	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 0 intersections LOS E/F. <u>Network Average Delay</u> AM = 1.9 minutes delay/vehicle. PM = 3.1 minutes delay/vehicle.	4.2	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 1 intersection. LOS E/F. <u>Network Average Delay</u> AM = 2.5 minutes delay/vehicle. PM = 2.9 minutes delay/vehicle.	1.7	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 1 intersection. LOS E/F. <u>Network Average Delay</u> AM = 2.5 minutes delay/vehicle. PM = 2.9 minutes delay/vehicle.	1.7	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 1 intersection. LOS E/F. <u>Network Average Delay</u> AM = 2.5 minutes delay/vehicle. PM = 2.9 minutes delay/vehicle.	3.5	<u>Intersection Delay</u> AM = 2 intersections LOS E/F. PM = 1 intersection. LOS E/F. <u>Network Average Delay</u> AM = 2.5 minutes delay/vehicle. PM = 2.9 minutes delay/vehicle.	3.5
T2. Decreases traffic volumes on University Ave SE and 4th St SE <i>Measurement:</i> ➤ Daily traffic volumes on University Ave SE and 4th St SE: 1. I-35W to 17th Ave SE 2. 17th Ave SE to Huron Blvd SE 3. Huron Blvd SE to Malcolm Ave SE 4. Malcolm Ave SE to TH 280	<u>Daily Traffic Volumes</u> 1. University Ave SE = 22,500 4th St SE = 23,000 2. University Ave SE = 21,500 4th St SE = 19,000 3. University Ave SE = 23,500 4) University Ave = 25,000	1.0	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = 0 4 th St SE = 0 2. University Ave SE = 0 4 th St SE = 0 3. University Ave SE = -3,000 4. University Ave = -3,500	2.5	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = 0 4 th St SE = 0 2. University Ave SE = -1,000 4 th St SE = 0 3. University Ave SE = -3,500 4. University Ave = -3,700	2.6	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = -3,500 4 th St SE = -2,000 2. University Ave SE = -500 4 th St SE = -2,000 3. University Ave SE = -4,000 4. University Ave = -3,700	4.3	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = 0 4 th St SE = 0 2. University Ave SE = 0 4 th St SE = 0 3. University Ave SE = -3,000 4. University Ave = -3,500	2.5	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = 0 4 th St SE = 0 2. University Ave SE = 0 4 th St SE = 0 3. University Ave SE = -3,000 4. University Ave = -3,500	2.5	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = 0 4 th St SE = 0 2. University Ave SE = -1,000 4 th St SE = 0 3. University Ave SE = -3,500 4. University Ave = -3,700	2.6	<u>Reduction in Daily Traffic Volumes</u> 1. University Ave SE = 0 4 th St SE = 0 2. University Ave SE = -1,000 4 th St SE = 0 3. University Ave SE = -3,500 4. University Ave = -3,700	2.6
T3. Improves study area connectivity <i>Measurement:</i> ➤ Travel times on representative origin-destination pairs in peak hours: 1. 2nd St SE/8th Ave SE to 17th Ave SE 2. 15th Ave SE from University Ave SE to 5th St SE 3. I-35W to TH 280	<u>Travel Times (minutes)</u> 1. AM = 2.5 min EB AM = 2.6 min WB PM = 3.0 min EB PM = 2.1 min WB 2. AM = 1.5 min NB AM = 3.2 min SB PM = 2.5 min NB PM = 3.2 min SB 3. AM = 6.4 min EB AM = 6.8 min WB PM = 8.1 min EB PM = 11.6 min WB	2.0	<u>Travel Times (minutes)</u> 1. AM = 2.8min EB AM = 2.5min WB PM = 2.6min EB PM = 3.2min WB 2. AM = 1.4min NB AM = 3.4min SB PM = 2.4min NB PM = 3.0min SB 3. AM = 6.6min EB AM = 6.8min WB PM = 7.5min EB PM = 10.5min WB	3.5	<u>Travel Times (minutes)</u> 1. AM = 2.5min EB AM = 2.6min WB PM = 3.0min EB PM = 2.1min WB 2. AM = 1.5min NB AM = 3.1min SB PM = 2.5min NB PM = 3.1min SB 3. AM = 6.2min EB AM = 6.5 min WB PM = 7.7min EB PM = 10.1min WB	3.7	<u>Travel Times (minutes)</u> 1. AM = 2.2 min EB AM = 2.1 min WB PM = 2.4 min EB PM = 1.9 min WB 2. AM = 1.5min NB AM = 2.6min SB PM = 2.7min NB PM = 3.0 min SB 3. AM = 6.4 min EB AM = 6.5 min WB PM = 7.3 min EB PM = 8.6 min WB	4.9	<u>Travel Times (minutes)</u> 1. AM = 2.8min EB AM = 2.5min WB PM = 2.6min EB PM = 3.2min WB 2. AM = 1.4min NB AM = 3.4min SB PM = 2.4min NB PM = 3.0min SB 3. AM = 6.6min EB AM = 6.8min WB PM = 7.5min EB PM = 10.5min WB	3.6	<u>Travel Times (minutes)</u> 1. AM = 2.8min EB AM = 2.5min WB PM = 2.6min EB PM = 3.2min WB 2. AM = 1.4min NB AM = 3.4min SB PM = 2.4min NB PM = 3.0min SB 3. AM = 6.6min EB AM = 6.8min WB PM = 7.5min EB PM = 10.5min WB	3.6	<u>Travel Times (minutes)</u> 1. AM = 2.5min EB AM = 2.6min WB PM = 3.0min EB PM = 2.1min WB 2. AM = 1.5min NB AM = 3.1min SB PM = 2.5min NB PM = 3.1min SB 3. AM = 6.2min EB AM = 6.5 min WB PM = 7.7min EB PM = 10.1min WB	3.7	<u>Travel Times (minutes)</u> 1. AM = 2.5min EB AM = 2.6min WB PM = 3.0min EB PM = 2.1min WB 2. AM = 1.5min NB AM = 3.1min SB PM = 2.5min NB PM = 3.1min SB 3. AM = 6.2min EB AM = 6.5 min WB PM = 7.7min EB PM = 10.1min WB	3.7

Table E-1 continued. Granary Corridor Evaluation Matrix

Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
T4. Decreases interaction and conflicts between vehicular traffic and other modes Measurement: > Daily traffic volume at intersections with key bicycle and pedestrian crossings or connections: 1. University Ave SE/10th Ave SE 2. 4th St SE/10th Ave SE 3. 4th St SE/11th Ave SE 4. University Ave SE/15th Ave SE 5. 5th St SE/15th Ave SE 6. University Ave SE/17th Ave SE 7. 4th St SE/17th Ave SE	Used as basis for comparison.	3.0	2 intersections = traffic volume decrease. 2 intersections = traffic volume increase. 3 intersections = no change. Average traffic volume change = -0.06% New conflict point on Granary Road at 27 th Ave SE.	2.9	3 intersections = traffic volume decrease. 4 intersections = traffic volume increase. 0 intersections = no change. Average traffic volume change = -0.25% New conflict points on Granary Road at 27 th Ave SE and at 17 th Ave SE/U of M trail.	2.8	7 intersections = traffic volume decrease. 0 intersections = traffic volume increase. 0 intersections = no change. Average traffic volume change = -5.8% New conflict points on Granary Road at 27 th Ave SE, at 17 th Ave SE/U of M trail, at 15 th Ave SE, and at 14 th Ave SE.	3.2	2 intersections = traffic volume decrease. 2 intersections = traffic volume increase. 3 intersections = no change. Average traffic volume change = -0.06% New conflict point on Granary Road at 27 th Ave SE. Does not result in any new conflicts in the Granary Corridor west of 25 th Ave SE.	3.5	2 intersections = traffic volume decrease. 2 intersections = traffic volume increase. 3 intersections = no change. Average traffic volume change = -0.06% New conflict point on Granary Road at 27 th Ave SE. Does not result in any new conflicts in the Granary Corridor west of 25 th Ave SE.	3.5	3 intersections = traffic volume decrease. 4 intersections = traffic volume increase. 0 intersections = no change. Average traffic volume change = -0.25% New conflict points on Granary Road at 27 th Ave SE and at 17 th Ave SE/U of M trail. Does not result in any new conflicts in the Granary Corridor west of 25 th Ave SE.	3.2	3 intersections = traffic volume decrease. 4 intersections = traffic volume increase. 0 intersections = no change. Average traffic volume change = -0.25% New conflict points on Granary Road at 27 th Ave SE and at 17 th Ave SE/U of M trail. Does not result in any new conflicts in the Granary Corridor west of 25 th Ave SE.	3.2
T5. Improves vehicular access to existing properties and uses Measurement: > Number of vehicular access changes to existing land uses. Note that development impacts of access changes are assessed as part of criteria ED1 and ED2.	6 primary accesses created.	1.2	18 primary accesses created.	3.6	18 primary accesses created. 14 secondary accesses created.	5.0	18 primary accesses created. 14 secondary accesses created. 3 existing accesses modified.	4.7	18 primary accesses created. 3 existing accesses modified or eliminated.	3.0	18 primary accesses created. 3 existing accesses modified or eliminated.	3.3	18 primary accesses created. 14 secondary accesses created. 3 existing accesses modified or eliminated.	4.4	18 primary accesses created. 14 secondary accesses created. 3 existing accesses modified.	4.7
Vehicular Traffic Subtotal (25 points)	8.2		14.2		17.6		21.3		14.3		14.6		17.4		17.7	
Vehicular Traffic Total (Weighted to 24 points)	7.9		13.6		16.9		20.4		13.7		14.0		16.7		17.0	

Table E-1 continued. Granary Corridor Evaluation Matrix

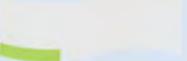
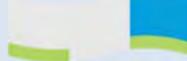
Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
Other Modes (Ped/Bike/ Transit)																
OM1. Facilitates bicycle and pedestrian travel <i>Measurement:</i> ➤ Length of new bicycle and pedestrian facilities ➤ Number of new connections to existing bicycle and pedestrian facilities and destinations	4,000 lineal feet of trail with 2 connections (Gopher Stadium and Bridge 9).	1.2	8,000 lineal feet of sidewalk/trail with 5 connections (Gopher Stadium, Bridge 9, 27 th Ave SE, 29 th Ave SE, and U of M Transitway).	2.6	11,000 lineal feet of sidewalk/trail with 7 connections (Gopher Stadium, Bridge 9, Oak St SE, 23 rd Ave SE, 27 th Ave SE, 29 th Ave SE, and U of M Transitway).	3.7	11,000 lineal feet of sidewalk/trail with 9 connections (Gopher Stadium, Bridge 9, 14 th Ave SE, 15 th Ave SE, Oak St SE, 23 rd Ave SE, 27 th Ave SE, 29 th Ave SE, and U of M Transitway).	3.9	12,000 lineal feet of sidewalk/trail/greenway with 10 connections (Gopher Stadium, Bridge 9, Main St SE, 14 th Ave SE, 15 th Ave SE, Oak St SE, 23 rd Ave SE, 27 th Ave SE, 29 th Ave SE and U of M Transitway).	4.1	12,000 lineal feet of sidewalk/trail/greenway with 10 connections (Gopher Stadium, Bridge 9, Main St SE, 14 th Ave SE, 15 th Ave SE, Oak St SE, 23 rd Ave SE, 27 th Ave SE, 29 th Ave SE and U of M Transitway).	4.2	12,000 lineal feet of sidewalk/trail/greenway with 10 connections (Gopher Stadium, Bridge 9, Main St SE, 14 th Ave SE, 15 th Ave SE, Oak St SE, 23 rd Ave SE, 27 th Ave SE, 29 th Ave SE and U of M Transitway).	4.2	12,000 lineal feet of sidewalk/trail/greenway with 10 connections (Gopher Stadium, Bridge 9, Main St SE, 14 th Ave SE, 15 th Ave SE, Oak St SE, 23 rd Ave SE, 27 th Ave SE, 29 th Ave SE and U of M Transitway).	4.2
OM2. Facilitates transit use <i>Measurement:</i> ➤ Number of transit stops with new or improved bicycle and pedestrian connections	1 bus stop = 4th St SE/Rider Arena.	1.0	1 bus stop = 4th St SE/Rider Arena. 1 LRT station = 29th Ave SE.	1.5	3 bus stops = 4th St SE/Rider Arena; 6th St SE/Thompson Center; 6th St SE/21st Ave SE. 2 LRT stations = Stadium Village; 29 th Ave SE.	3.0	5 bus stops = 4th St SE/Rider Arena; 6th St SE/Thompson Center; 6th St SE/21st Ave SE; 4th St SE/15th Ave SE (2 stops). 2 LRT stations = Stadium Village; 29 th Ave SE.	4.0	5 bus stops = 4th St SE/Rider Arena; 6th St SE/Thompson Center; 6th St SE/21st Ave SE; 4th St SE/15th Ave SE (2 stops). 2 LRT stations = Stadium Village; 29 th Ave SE.	4.0	5 bus stops = 4th St SE/Rider Arena; 6th St SE/Thompson Center; 6th St SE/21st Ave SE; 4th St SE/15th Ave SE (2 stops). 2 LRT stations = Stadium Village; 29 th Ave SE.	4.0	5 bus stops = 4th St SE/Rider Arena; 6th St SE/Thompson Center; 6th St SE/21st Ave SE; 4th St SE/15th Ave SE (2 stops). 2 LRT stations = Stadium Village; 29 th Ave SE.	4.0	5 bus stops = 4th St SE/Rider Arena; 6th St SE/Thompson Center; 6th St SE/21st Ave SE; 4th St SE/15th Ave SE (2 stops). 2 LRT stations = Stadium Village; 29 th Ave SE.	4.0
OM3. Improves multi-modal environment and experience <i>Measurement:</i> ➤ User experience based on lighting, path width, landscaping, and separation from traffic	No new lighting. Path width 10 feet at west end. Minimal plantings. No new modal separation.	1.0	1 segment with lighting. Moderate path width. Moderate plantings. Some separation of modes.	2.7	2 segments with lighting. Moderate path width. Moderate plantings. Some separation of modes.	3.5	3 segments with lighting. Moderate path width. Plantings slightly better than moderate. Moderate separation of modes.	3.7	3 segments with lighting. 2 segments with maximum path width, plantings, and separation. 1 segment with moderate path width, plantings, and separation.	4.9	3 segments with lighting. 2 segments with less than maximum path width, plantings, and separation. 1 segment with moderate path width, plantings, and separation.	4.3	3 segments with lighting. 1 segment with maximum path width, plantings, and separation. 2 segments with moderate path width, plantings, and separation.	4.3	3 segments with lighting. 1 segment with less than maximum path width, plantings, and separation. 2 segments with moderate path width, plantings, and separation.	4.0
Other Modes (Ped/Bike/Transit) Subtotal (15 points)	3.2		6.8		10.2		11.6		13.0		12.4		12.5		12.2	
Other Modes (Ped/Bike/Transit) Total (Weighted to 13 points)	2.8		5.9		8.8		10.1		11.3		10.7		10.8		10.6	

Table E-1 continued. Granary Corridor Evaluation Matrix

Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
Railroad																
RR1. Changes to existing rail operations <u>Measurement:</u> ➢ Acres of property acquisition ➢ Removal or reduction in yard space and other operations impacts	0.2 acres acquisition, but no operational impacts.	4.9	4.1 acres acquisition. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	3.8	9.6 acres acquisition. Potential need for relocation of Upper D Yard. Little or no impact to BN Southeast Minneapolis Transload. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	2.2	13.8 acres acquisition. Significant operational impacts to Lower D Yard D. At-grade crossing of tracks to Steam Plant. Potential need for relocation of Upper D Yard. Little or no impact to BN Southeast Minneapolis Transload. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	1.0	16.1 acres acquisition. Significant operational impacts to Lower D Yard D. At-grade crossing of tracks to Steam Plant. Potential need for relocation of Upper D Yard. Little or no impact to BN Southeast Minneapolis Transload. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	1.0	9.0 acres acquisition. Some operational impacts to Lower D Yard. At-grade crossing of tracks to Steam Plant. Potential need for relocation of Upper D Yard. Little or no impact to BN Southeast Minneapolis Transload. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	2.6	16.1 acres acquisition. Significant operational impacts to Lower D Yard D. At-grade crossing of tracks to Steam Plant. Potential need for relocation of Upper D Yard. Little or no impact to BN Southeast Minneapolis Transload. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	1.0	11.7 acres acquisition. Significant operational impacts to Lower D Yard D. At-grade crossing of tracks to Steam Plant. Some reduction in yard of Upper D Yard. Little or no impact to BN Southeast Minneapolis Transload. Significant operational impacts to UP Southeast Minneapolis Transload. Reduction in track capacity at Whitebox Elevator.	1.6
Railroad Subtotal (5 points)	4.9		3.8		2.2		1.0		1.0		2.6		1.0		1.6	
Railroad Total (Weighted to 5 points)	4.9		3.8		2.2		1.0		1.0		2.6		1.0		1.6	
Livability																
L1. Creates public and open space <u>Measurement:</u> ➢ Area of public space ➢ Area of green space ➢ Number of open space destinations	Public space= 185,680 square feet. No significant area of green space.	0.6	Public space = 585,880 square feet. Green space = 3.8 acres. Open space = 1 node.	2.1	Public space = 1,020,980 square feet. Green space = 7.8 acres. Open space = 1 node.	3.6	Public space = 1,235,090 square feet. Green space = 9.9 acres. Open Space = 1 node.	4.4	Public space = 1,254,120 square feet. Green space = 14.8 acres. Open space = 4 nodes.	4.8	Public space = 876,990 square feet. Green space = 7.5 acres. Open space = 4 nodes.	3.4	Public Space = 1,303,920 square feet. Green space = 13.5 acres. Open space = 4 nodes.	4.9	Public Space = 1,157,970 square feet. Green space = 9.7 acres. Open space = 4 nodes.	4.4

Table E-1 continued. Granary Corridor Evaluation Matrix

Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
L2. Creates connections to the Mississippi River <u>Measurement:</u> ➤ Number of new roadway, bicycle, and pedestrian connections to river	1 indirect bicycle and pedestrian connection.	1.0	1 indirect bicycle and pedestrian connection.	1.0	1 indirect bicycle and pedestrian connection.	1.0	1 indirect bicycle and pedestrian connection. 1 indirect roadway connection.	3.0	1 direct bicycle and pedestrian connection. 1 indirect bicycle and pedestrian connection.	5.0	1 direct bicycle and pedestrian connection. 1 indirect bicycle and pedestrian connection	5.0	1 direct bicycle and pedestrian connection. 1 indirect bicycle and pedestrian connection	5.0	1 direct bicycle and pedestrian connection. 1 indirect bicycle and pedestrian connection.	5.0
L3. Improves cohesiveness of the community <u>Measurement:</u> ➤ New roadway, bicycle, and pedestrian connections ➤ Number of neighborhoods connected	3 road connections (27 th Ave SE, 29 th Ave SE, and 30 th Ave SE). 1 bicycle and pedestrian connection (Bridge 9). 1 neighborhood connection (Prospect Park).	1.7	5 road connections (25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 3 bicycle and pedestrian connections (27 th Ave SE, 29 th Ave SE, Bridge 9). 1 neighborhood connection (Prospect Park).	2.5	8 road connections (17 th Ave SE, Oak St SE, 23 rd Ave SE, 25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 5 bicycle and pedestrian connections (27 th Ave SE, 29 th Ave SE, 23 rd Ave SE, Oak St SE, Bridge 9). 2 neighborhood connections (Prospect Park and Stadium Village).	3.8	9 road connections (2 nd St SE, 17 th Ave SE, Oak St SE, 23 rd Ave SE, 25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 7 bicycle and pedestrian connections (14 th Ave SE, 15 th Ave SE, 27 th Ave SE, 29 th Ave SE, 23 rd Ave SE, Oak St SE, Bridge 9). 4 neighborhood connections (Prospect Park, Stadium Village, St. Anthony Main, and Marcy-Holmes).	4.6	5 road connections (25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 7 bicycle and pedestrian connections (14 th Ave SE, 15 th Ave SE, 27 th Ave SE, 29 th Ave SE, 23 rd Ave SE, Oak St SE, Bridge 9). 4 neighborhood connections (Prospect Park, Stadium Village, St. Anthony Main, and Marcy-Holmes).	3.6	5 road connections (25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 7 bicycle and pedestrian connections (14 th Ave SE, 15 th Ave SE, 27 th Ave SE, 29 th Ave SE, 23 rd Ave SE, Oak St SE, Bridge 9). 4 neighborhood connections (Prospect Park, Stadium Village, St. Anthony Main, and Marcy-Holmes).	3.6	8 road connections (17 th Ave SE, Oak St SE, 23 rd Ave SE, 25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 7 bicycle and pedestrian connections (14 th Ave SE, 15 th Ave SE, 27 th Ave SE, 29 th Ave SE, 23 rd Ave SE, Oak St SE, Bridge 9). 4 neighborhood connections (Prospect Park, Stadium Village, St. Anthony Main, and Marcy-Holmes).	4.2	8 road connections (17 th Ave SE, Oak St SE, 23 rd Ave SE, 25 th Ave SE, 27 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Westgate Dr). 7 bicycle and pedestrian connections (14 th Ave SE, 15 th Ave SE, 27 th Ave SE, 29 th Ave SE, 23 rd Ave SE, Oak St SE, Bridge 9). 4 neighborhood connections (Prospect Park, Stadium Village, St. Anthony Main, and Marcy-Holmes).	4.2
L4. Improves visual quality <u>Measurement:</u> ➤ Additions or reductions of desirable and undesirable visual elements	Minimal landscape and visual quality. No new undesirable elements.	1.0	Some new landscape and visual quality. 1 new view opportunity to downtown from SEMI area. No new undesirable elements added.	2.0	Moderate new landscape and visual quality. 1 new view opportunity to downtown from SEMI area. No new undesirable elements.	3.0	Moderate/high level of new landscape and visual quality. 2 new view opportunities to downtown from SEMI area and to Mississippi River. 1 undesirable element added - new retaining wall near 2 nd St SE/11 th Ave SE.	3.5	Maximum level of new landscape and visual quality. 2 new view opportunities to downtown from SEMI area and to Mississippi River. No new undesirable elements.	5.0	Moderate/high level of new landscape and visual quality. 2 new view opportunities to downtown from SEMI area and to Mississippi River. No new undesirable elements.	4.5	High level of new landscape and visual quality. 2 new view opportunities to downtown from SEMI area and to Mississippi River. No new undesirable elements.	4.5	Moderate level of new landscape and visual quality. 2 new view opportunities to downtown from SEMI area and to Mississippi River. No new undesirable elements.	4.2
L5. Increases biodiversity <u>Measurement:</u> ➤ Acres of habitat created	Minimal acres of habitat created.	1.0	Linear landscaping along trail = 4,000 lineal feet. Storm pond = 1 acre of habitat.	1.8	Linear landscaping along trail = 7,000 lineal feet. Storm pond = 1 acre of habitat.	2.8	Linear landscaping along trail = 11,000 lineal feet. Storm pond = 1 acre of habitat.	3.3	Linear landscaping along trail = 4,000 lineal feet. Linear landscaping in greenway = 10 acres. Storm pond = 1 acre of habitat.	4.6	Linear landscaping along trail = 4,000 lineal feet. Linear landscaping in greenway = 4.5 acres. Storm pond = 1 acre of habitat.	3.9	Linear landscaping along trail = 7,000 lineal feet. Linear landscaping in greenway = 5 acres. Storm pond = 1 acre of habitat.	4.1	Linear landscaping along trail = 7,000 lineal feet. Linear landscaping in greenway = 2.5 acres of habitat. Storm pond = 1 acre of habitat.	3.7

Table E-1 continued. Granary Corridor Evaluation Matrix

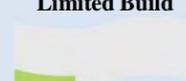
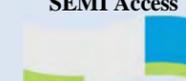
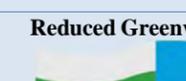
Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
L6. Traffic volumes remain in acceptable thresholds for street type <u>Measurement:</u> ➤ Number of roadway segments with forecast traffic and truck volumes greater than the appropriate threshold based on the existing roadway classification.	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day).	4.0	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day). 1 roadway segment with traffic above thresholds = 6th St between Oak St SE and 25th Ave SE.	3.0	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day).	4.3	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day). 3 roadway segments with traffic above thresholds = 8th Ave SE between 2nd St SE and University Ave SE; 11th Ave SE between 2nd St SE and University Ave SE; 2nd St SE between 11th Ave SE and 6th Ave SE.	2.5	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day). 1 roadway segment with traffic above thresholds = 6th St between Oak St SE and 25th Ave SE.	3.8	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day). 1 roadway segment with traffic above thresholds = 6th St between Oak St SE and 25th Ave SE.	3.8	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day).	4.3	Increased traffic on 25 th Ave SE, 29 th Ave SE, 30 th Ave SE, and Malcolm Ave SE (less than 1,000 vehicles per day).	4.3
L7. Impacts of traffic on adjacent properties and neighborhoods <u>Measurement:</u> ➤ Number of roadway segments with potential adverse physical impacts due to increased traffic	No impacts.	3.0	No impacts.	4.0	No impacts.	4.0	2 roadway segments impacted = 8th Ave SE between 2nd St SE and University Ave SE; 11th Ave SE between 2nd St SE and University Ave SE. One-way traffic or parking restrictions needed.	2.5	No impacts.	4.0	No impacts.	4.0	No impacts.	4.0	No impacts.	4.0
L8. Impacts on historic character and features <u>Measurement:</u> ➤ Number of historic features or properties affected	No impacts.	5.0	1 potential adverse impact = grain elevator property.	3.3	1 potential adverse impact = grain elevator property.	3.3	1 potential adverse impact = grain elevator property.	3.3	1 potential adverse impact = grain elevator property.	3.3	1 potential adverse impact = grain elevator property.	3.3	1 potential adverse impact = grain elevator property.	3.3	1 potential adverse impact = grain elevator property.	3.3
Livability Subtotal (40 points)	17.3		19.7		25.8		27.1		34.1		31.5		34.3		33.1	
Livability Total (Weighted to 24 points)	10.4		11.8		15.5		16.3		20.5		18.9		20.6		19.9	

Table E-1 continued. Granary Corridor Evaluation Matrix

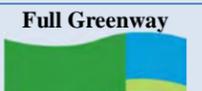
Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
Economic Development																
ED1. Improves access (all modes) to parcels identified for future development or redevelopment <u>Measurement:</u> ➢ Number, size, and type of parcels with new access that are identified for development or redevelopment ➢ Number of new jobs and households created by development or redevelopment, adjacent to new roadway or greenway segment	6 parcels = new primary vehicle access (1 small parcel, 5 large parcels). 0 parcels = pedestrian and bicycle access. Land use = +222 households, +28 retail employment, and +671 non-retail employment.	1.1	12 parcels = new primary vehicle access (4 small parcels, 8 large parcels). 12 parcels = pedestrian and bicycle access. Land use = +554 households, +70 retail employment, and +1,678 non-retail employment.	2.7	15 parcels = new primary vehicle access (6 small parcels, 9 large parcels). 4 U of M parcels = new primary vehicle access (1 small parcel, 3 large parcels). 19 parcels = pedestrian and bicycle access. Land use = +688 households, +83 retail employment, and +2,571 non-retail employment.	3.8	15 parcels = new primary vehicle access (6 small parcels, 9 large parcels). 4 U of M parcels = new primary vehicle access (1 small parcel, 3 large parcels). 19 parcels = pedestrian and bicycle access. Land use = +1,332 households, +133 retail employment, and +4,370 non-retail employment.	5.0	12 parcels = new primary vehicle access (4 small parcels, 8 large parcels). 12 parcels = pedestrian and bicycle access. 7 parcels = greenway access only. Land use = +983 households, +105 retail employment, and +3,291 non-retail employment. Potential for larger development influence area in neighborhood due to greenway enhancements.	4.4	12 parcels = new primary vehicle access (4 small parcels, 8 large parcels). 12 parcels = pedestrian and bicycle access. 7 parcels = greenway access only. Land use = +983 households, +105 retail employment, and +3,291 non-retail employment. Potential for larger development influence area in neighborhood due to greenway enhancements.	4.4	15 parcels = new primary vehicle access (6 small parcels, 9 large parcels). 4 U of M parcels = new primary vehicle access (1 small parcel, 3 large parcels). 19 parcels = pedestrian and bicycle access. Land use = +1,010 households, +108 retail employment, and +3,470 non-retail employment. Potential for larger development influence area in neighborhood due to greenway enhancements.	4.7	15 parcels = new primary vehicle access (6 small parcels, 9 large parcels). 4 U of M parcels = new primary vehicle access (1 small parcel, 3 large parcels). 19 parcels = pedestrian and bicycle access. Land use = +1,010 households, +108 retail employment, and +3,470 non-retail employment. Potential for larger development influence area in neighborhood due to greenway enhancements.	4.7
ED2. Improves access (all modes) to existing underutilized property not currently identified for redevelopment. <u>Measurement:</u> ➢ Number of parcels with new, improved, or reduced access that are currently underutilized but not identified for redevelopment	0 parcels = new vehicle access. 10 parcels = pedestrian and bicycle access.	1	1 parcel = new vehicle access. 11 parcels = pedestrian and bicycle access.	1.4	5 parcels = new vehicle access. 15 parcels = pedestrian and bicycle access.	3.0	5 parcels = new vehicle access. 10 U of M parcels = new vehicle access. 15 parcels = pedestrian and bicycle access.	4.5	1 parcel = new vehicle access. 15 parcels = pedestrian and bicycle access.	2.8	1 parcel = new vehicle access. 15 parcels = pedestrian and bicycle access.	2.8	5 parcels = new vehicle access. 15 parcels = pedestrian and bicycle access.	3.3	5 parcels = new vehicle access. 15 parcels = pedestrian and bicycle access.	3.3
Economic Development Subtotal (10 points)	2.1		4.1		6.8		9.5		7.2		7.2		8.0		8.0	
Economic Development Total (Weighted to 24 points)	5.0		9.8		16.3		22.8		17.3		17.3		19.2		19.2	

Table E-1 continued. Granary Corridor Evaluation Matrix

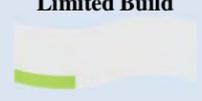
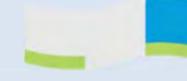
Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
Environmental Quality																
EN1. Improves air quality <i>Measurement:</i> ➤ Number of intersections with LOS E/F operations in 2030 peak hours	5 intersections = LOS E/F.	1.0	4 intersections = LOS E/F.	2.3	3 intersections = LOS E/F.	3.6	2 intersections = LOS E/F.	5.0	4 intersections = LOS E/F.	2.3	4 intersections = LOS E/F.	2.3	3 intersections = LOS E/F.	3.6	3 intersections = LOS E/F.	3.6
EN2. Reduces noise impacts <i>Measurement:</i> ➤ Number of residential or mixed use parcels next to roadway segments with traffic volume increases	6 parcels = future mixed use with traffic increases.	4.4	12 parcels = future mixed use with traffic increases.	3.8	19 parcels = future mixed use with traffic increases. 6 parcels = future U of M use with traffic increases.	2.5	19 parcels = future mixed use with traffic increases. 11 parcels = future U of M use with traffic increases.	2.0	12 parcels = future mixed use with traffic increases.	3.8	12 parcels = future mixed use with traffic increases.	2.5	19 parcels = future mixed use with traffic increases. 6 parcels = future U of M use with traffic increases.	2.5	19 parcels = future mixed use with traffic increases. 6 parcels = future U of M use with traffic increases.	2.5
EN3. Reduces contaminated sites <i>Measurement:</i> ➤ Acres of contaminated sites cleaned up as a result of the project	100,000 square feet to be cleaned up.	0.6	310,000 square feet to be cleaned up.	1.8	500,000 square feet to be cleaned up.	2.9	758,000 square feet to be cleaned up.	4.4	858,000 square feet to be cleaned up.	5.0	565,000 square feet to be cleaned up.	3.3	858,000 square feet to be cleaned up.	5.0	679,000 square feet to be cleaned up.	4.0
EN4. Improves stormwater and water quality <i>Measurement:</i> ➤ Acres of additional impervious area	2 acres additional impervious surface.	4.8	5 acres additional impervious surface.	4.0	8 acres additional impervious surface.	3.0	12 acres additional impervious surface.	1.6	13 acres additional impervious surface.	1.8	9 acres additional impervious surface.	3.0	13 acres additional impervious surface.	1.5	10 acres additional impervious surface.	2.4
Environmental Quality Subtotal (20 points)	10.8		11.9		12.0		13.0		12.9		12.4		12.6		12.5	
Environmental Quality Total (Weighted to 5 points)	2.7		3.0		3.0		3.3		3.2		3.1		3.2		3.1	

Table E-1 continued. Granary Corridor Evaluation Matrix

Evaluation Category/ Criteria	Limited Build		SEMI Access		SEMI Access Plus		Full Build		SEMI Access with Extended Greenway				SEMI Access Plus with Greenway			
																
	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)	Analysis Result	Score (1-5)
Plan Consistency																
P1. Supports City of Minneapolis policies and Comprehensive Plan <u>Measurement:</u> ➤ Number of inconsistencies with key policies and plans	Inconsistent with 3 objectives for Granary Corridor.	1.0	Inconsistent with 2 objectives for Granary Corridor.	1.7	Inconsistent with 1 objective for Granary Corridor.	3.2	Consistent with objectives for Granary Corridor.	5.0	Inconsistent with 1 objective for Granary Corridor.	3.0	Inconsistent with 1 objective for Granary Corridor.	3.0	Inconsistent with 1 objective for Granary Corridor.	4.0	Inconsistent with 1 objective for Granary Corridor.	4.0
P2. Supports University of Minnesota policies and Master Plan <u>Measurement:</u> ➤ Number of inconsistencies with key policies and plans	Inconsistent with 4 goals of the Master Plan.	1.0	Inconsistent with 3 goals of the Master Plan.	2.2	Inconsistent with 2 goals of the Master Plan.	3.7	Consistent with Master Plan goals.	5.0	Inconsistent with 3 goals of the Master Plan.	3.7	Inconsistent with 3 goals of the Master Plan.	3.7	Inconsistent with 2 goals of the Master Plan.	4.2	Inconsistent with 2 goals of the Master Plan.	4.2
P3. Supports policies and goals of adopted neighborhood plans and other agency plans <u>Measurement:</u> ➤ Number of inconsistencies with key policies and plans	Inconsistent with 5 plan goals and objectives.	1.0	Inconsistent with 4 plan goals and objectives.	2.7	Inconsistent with 3 plan goals and objectives	4.2	Inconsistent with 2 plan goals and objectives.	4.7	Inconsistent with 3 plan goals and objectives.	4.1	Inconsistent with 3 plan goals and objectives.	3.7	Inconsistent with 2 plan goals and objectives.	4.4	Inconsistent with 2 plan goals and objectives.	4.2
Plan Consistency Subtotal (15 points)	3.0		6.6		11.1		14.7		10.8		10.4		12.6		12.4	
Plan Consistency Total (Weighted to 5 points)	1.0		2.2		3.7		4.9		3.6		3.5		4.2		4.1	
SUBTOTAL (130 points)	49.5		67.1		85.7		98.2		93.3		91.1		98.4		97.5	
TOTAL (Weighted to 100 points)	34.7		50.1		66.4		78.8		70.6		70.1		75.7		75.5	
Total Project Cost (millions)	\$5.5		\$21.8		\$37.8		\$61.9		\$61.6		\$43.7		\$62.8		\$52.3	
Cost Per Point (millions)	\$0.16		\$0.44		\$0.57		\$0.79		\$0.87		\$0.62		\$0.83		\$0.69	



GRANARY CORRIDOR STUDY



Kimley-Horn
and Associates, Inc.

APPENDIX F: Community Workshop 2

Community Workshop 2
November 29, 2011, 8:30-10:30 AM,
Van Cleve Community Center, Minneapolis

Attendees

Note: This list contains attendees that signed in at the meeting.

- Andrew Caddock, Minneapolis Park and Recreation Board
- Edna Brazaitis, Nicollet Island East Bank Neighborhood Association
- Sandy Cullen, University of Minnesota
- Bill Fellows, City of Minneapolis Public Works
- Pete Goelzer, Nicollet Island East Bank Neighborhood Association
- Cam Gordon, City of Minneapolis Ward 2 Council Member
- Diane Hofstede, City of Minneapolis Ward 3 Council Member
- Rick Johnson, University of Minnesota
- Alyssa Kast, University of Minnesota
- Eriks Ludin, City of Saint Paul Public Works
- Monique Mackenzie, University of Minnesota
- Haila Maze, City of Minneapolis Community Planning and Economic Development
- Michael McLaughlin, Southeast Business Association
- Joan Menken, Southeast Como Improvement Association
- Miles Mercer, City of Minneapolis Community Planning and Economic Development
- Ellen Muller, City of Saint Paul
- Nancy Rose Pribyl, Stadium Village Commercial Association
- Cordelia Pierson, Minneapolis Riverfront Partnership
- Larry Prines, Marcy-Holmes Neighborhood Association
- Penelope Simison, City of Saint Paul
- Suzanne Smith, University of Minnesota
- Ted Tucker, Marcy-Holmes Neighborhood Association
- John Wall, Wall Companies
- Julia Wallace, Prospect Park East River Road Improvement Association
- Liz Wielinski, Minneapolis Park and Recreation Board Ward 1 Commissioner

John Witt, Hennepin County Public Works

Comments – Group Discussion

- Why do Greenway alternatives score best for economic development? Shouldn't it be Full Build? Need to consider types of development—residential vs. industrial vs. commercial.
- Equate economic development to jobs (different ways to measure) and tax base
- What is the future of the project given railroad property acquisitions? Leverage these
- Consider the difference between car traffic and truck traffic- west end, west of 11th Ave
- MnDOT planning at 280
- Traffic is still more, it's just a matter of how it is distributed (where are the impacts) – water balloon analogy
- Granary provides opportunities for event traffic distribution
- What about mode shifts? Consider fuel costs
- Phasing/incremental projects
- West end connections: are negative effects quantified well?
- Existing vs. proposed land use overlap
- Vehicle mix with various alternatives
- Where is the funding coming from?
- How will results be presented? 1? All?
- Plan consistency- why is a road talked about so much?
- Other modes?
- Sustainability?
- Reduced greenway – would have lower cost but still high benefits
- Economic development positives and negatives – vehicular access vs. non motorized access – split? - results don't make sense
- Assumptions need to be defined on the analysis
- Greenway vs. full-build - modify assumptions to change costs
- Review the spreadsheet/ sensitivity

- Economic development analysis high for greenway = confusing; purpose of SEMI is for industrial jobs- greenway doesn't support this
 - Answers: 1) Greenway (e.g., Midtown Greenway) as amenity to support development; 2) less opportunity for economic development in middle and west sections (east end drives economic development scope)
 - Broader definition of economic development than just SEMI; include housing & jobs—full potential of area
 - Also link to Grand Rounds, etc.
- Who is this designed for? Truck traffic? (e.g. want trucks off of Como Ave) What about St. Paul?
 - Doesn't take much off University/ 4th (10%). Not a through route as much as local access to destinations
 - Different than would be if directly links to highways
 - Project doesn't start at city limits-starts in St. Paul; bad intersection at Territorial and Eustis—this makes it worse! Need more analysis- dumps on Westgate.
- Plan Consistency issues: should we weight bike/ ped plans more than road plans?
 - Should there be on-street lanes and off-street facilities? Different types of bikers. Different if “bike autobahn” commuter route
 - Issue: how much should SEMI plan influence results? In conflict with other values (SEMI greenway is in City Comp Plan) including neighborhood values. Does plan consistency = double counting in criteria?
 - Note: Full Build has space for greenway development.
- What about the west end of the project?
 - Hot button in Marcy Holmes re: road
 - Greenway connection could leverage some funds and serves neighborhood well
 - Link to Stone Arch Bridge important in addition to link to Bridge 9 (used day/night) could extend trail without rest of facility (needed as far as Lowry Bridge – regionally significant gap)
- Need to address traffic issues on Como, 4th- “ridiculous” – would support full build if it had major positive impact on traffic- but it doesn't
- Stone Arch- important link to Downtown
- Compare with MPRB plans to build trails farther N on riverfront
- Benefits of extending from Oak to 17th? Need to extend to support U of M facilities. What is bike plan for area around U? NIEBNA is in ped overlay district. Concern with Full Build dumping traffic here.
- General support for scoring, with some discussion regarding plan consistency
- Do we need full build of greenway? Or could there be partial implementation (less wide— full 100 ft) – a nother alternative with 1 bay instead of 2? = less \$/ROW

Comments – Individual Comment Sheets

- Key issue from St. Paul perspective, is which alternative allows good connection to Westgate for economic development/ jobs on our side
- Need land use overlay. Need to analyze alternatives vis-à-vis land use. What are the acres? The businesses? Future land use that would be accessed by each alternative?
- Greenway design and costs could vary over length of greenway. That could reduce costs and maintain benefit
- Start with the east end. It is needed for current trucks including containers from RR.
- Work with issues of acquisition of RR property, or nothing happens!!



- On east end , it may not be necessary to build all the N/S proposed streets (e.g., 30th)
- Prospect Park is supportive of east end build. More meetings and workshops and attention needs to be paid to the western (Marcy Holmes) end. But don't let that slow the build of the east end.
- Can the plan be selected so that "full build" could be the long-term Phase II that balances cost/benefit ratio?
- Are you holding evening meetings to capture feedback from people that are unable to attend day meetings?
- Economic development measurements should/could include tax base & jobs
- What is MnDOT's plan for 94/280 interchange, as I understand they are looking at making improvements. How will traffic be distributed and does it change the pressure points at 280/94 and 35W?
- Thanks for the information and great documents
- Is 30th necessary when you have Malcolm and 29th?
- Can we get access to the "huge spreadsheet" in electronic format?
- Diminishing returns- did anyone take into account possible fuel costs vs. non-gas based transport?
- How will the railroad- biggest impediment -be dealt with so plan has a chance?
- Last piece 17th to 11th- any truck weight limits?
- Traffic impacts should be evaluated, west of 11th Ave, on 2nd St. SE & 35W access with Full Build
- Greenway concepts bring intangible and unexpected benefits.
- Phasing should take place in any alternative so that the eastern truck traffic issues can be taken care of first.
- Consider load limits west of 17th Ave.



APPENDIX G: Community Meeting

Community Meeting
 May 9, 2012, 4:30-6:30 PM
 Van Cleve Community Center, Minneapolis

Attendees

Note: This list contains attendees that signed in at the meeting.

Eric Amel
 Julian Anderson
 Lynn Anderson, Southeast Como Improvement Association
 Phil Anderson, Prospect Park East River Road Improvement Association
 Roger E. Anderson, Homeowner
 Melissa Bean, Marcy-Holmes Neighborhood Association
 Alice Behman
 Fred Bertron, Anytime Fitness
 Edna Brazaitis, Nicollet Island East Bank Neighborhood Association
 Mike Brothers
 Ray Bryan, St. Anthony Park Community Council
 Andrew Caddock, Minneapolis Park and Recreation Board
 Sandy Cullen, University of Minnesota Parking and Transportation Services
 Nelson Capea, Winslow House
 John DeWitt, Prospect Park East River Road Improvement Association
 Bill Fellows, City of Minneapolis Public Works
 Katie Fournier, Southeast Como Improvement Association, University District Alliance
 Steve Fulmer, 400 2nd St NE
 Lauren Fulmer-Erickson, St. Anthony Park Community Council
 Tony Garners, Prospect Park East River Road Improvement Association
 Peter Goelzer, Nicollet Island East Bank Neighborhood Association
 P. Victor Grambsch, Nicollet Island East Bank Neighborhood Association
 Rebecca Grombkoto
 Heidi Hamilton, City of Minneapolis Public Works
 Ellie Hands, Winslow House

Copper Harding, Homeowner
 Diane Hofstede, City of Minneapolis Ward 3 Council Member
 Bill Huntzicker
 Bruce Jacobson, Cunningham Group
 Laurice Jameson, 610 6th St SE, Southeast Minneapolis Council on Learning
 Tom Johnson, Hennepin County Public Works
 Dan Kalmon, Mississippi Watershed Management Organization
 Phillip Kelly, Minnesota Student Association, University District Alliance
 Chris Kraft, Winslow House
 Mike Lamb, Cunningham Group
 Allen Lovejoy, St. Paul Public Works
 Weiming Lu, Development Advisor
 Eriks Ludins, St. Paul Public Works
 Monique Mackenzie, University of Minnesota
 Haila Maze, City of Minneapolis Community Planning and Economic Development
 Jim McComb, McComb Grays Ltd.
 Michael McLaughlin, Southeast Business Association
 Joan Menken, Southeast Como Improvement Association
 Karen Murdock, Prospect Park East River Road Improvement Association
 Lisa Peters, Homeowner
 Steve Peterson
 Cordella Pierson, Minneapolis Riverfront Partnership
 Dick Poppele, Prospect Park East River Road Improvement Association, University District Alliance
 Jo Radzwill, Marcy-Holmes Neighborhood Association
 Kevin Rush, 215 Main St NE, St. Anthony West Neighborhood Association
 Ignacio SanMartin, University of Minnesota School of Architecture
 Chelle Spomer, resident of Minneapolis
 Robert Stableski, 222 2nd St SE
 Richard Vehberg, University District Alliance
 Peter Wagenius, Mayor's Office
 Ray Waldron, 100 2nd St SE
 John Wall, Wall Companies
 Julia Wallace, Prospect Park East River Road Improvement Association, University District Alliance

David Wee, West Bank University of Minnesota
 Terry White, Marcy-Holmes resident
 Liz Wielinski, 3519 2nd St NE, Minneapolis Park and Recreation Board Commissioner
 Peg Wolff, University of Minnesota, University District Alliance

Comments – Individual Comment Sheets

- Great work, thank you!
- Winslow House as part of NE Nicollet Island East Bank Assoc. has already registered opposition to Full Build because of greatly increased traffic (including truck traffic) on 2nd St SE.
- All other alternatives except Full Build have reduced daily traffic volume. Full Build has greatly increased traffic volume through our neighborhood. Logically, Full Build should not be weighed highly on livability. This is acknowledged in Phase I screening results. Future traffic increase on our neighborhood will be huge.
- There is only a 1 minute travel time savings between Semi Access Plus and Full Build. This comes at a huge negative impact to our neighborhood.
- It does seem that dumping 2000-3000 cars/semis into a quiet neighborhood for 1 minute travel time savings is justified.
- A bike path to Main St. (i.e., the Stone Arch Bridge) seems to be a good idea.
- Main St with its small shops and cafes should not turn into an auto thoroughfare. 2nd St SE has many condos (read residents) who would have their neighborhood impacted hugely.
- Disallow heavy trucks on 2nd St SE past 8th Ave SE!!
- Full Build is the ideal – Reducing traffic in residential neighborhoods (many homes) and extending pedestrian bike lanes both important and of far greater importance than another stadium!
- Excellent project. As noted, would like to know the impact on traffic on 2nd St SE and

- Main St between 8th Ave SE and Central. Thank you.
- No one has asked St. Paul about using St. Paul as the eastern terminus of Granary. St. Anthony Park Community Council would also like to be engaged and informed by/of the process.
 - I like the bike and greenway aspects of these study options. I fail to see how any options further the goal of a Grand Rounds connection.
 - If MHNA is on the project management team, then PPERRIA should also be on it (both neighborhoods will be greatly impacted by this project).
 - Railroad companies have a “19th century mindset”; they think they are more important than they are. They are very “backward-looking” and difficult to deal with.
 - The City has encouraged residential development on 2nd St and Main St. SE. It makes no sense now to build a road that would dramatically increase truck and auto traffic on those two streets.
 - The Full Build will have a significant, negative impact on 2nd St SE and the surrounding areas west of 35W. The impact on the area must be evaluated, keeping in mind that there is going to be a significant increase in housing volume in the area. The Full Build is the only option that increases traffic in an area. It is also expensive compared to other options. Given these things the option should be eliminated.
 - You discussed the “livability” criteria – and the items that influenced the score – the Full Build had a livability score that was relatively high. I do not believe that this reflects the people impact on Main St, 2nd St, and the surrounding areas.
 - Please eliminate the Full Build option.



GRANARY CORRIDOR STUDY



PPERRIA

Prospect Park and East River Road Improvement Association, Inc.

JUL 02 2012
Kimley-Horn & Associates, Inc.
Twin Cities

To: Bill Fellows, Project Engineer, Granary Corridor Study
JoNette Kuhnau, Kimley-Horn and Associates, Inc.
From: Prospect Park and East River Road Improvement Association
Subject: Granary Corridor Study Comments
Date: June 25, 2012

The Prospect Park and East River Road Improvement Association (PPERRIA) is pleased to have an opportunity to comment on the Granary Corridor study by Kimley-Horn and Associates and the recently publicized alternatives analysis. As a member of the University District Alliance, we see this effort as an important and productive way for the Alliance and its member organizations, including city departments, to work together on issues facing the District. The openness and inclusiveness of this process was much appreciated. Although this neighborhood was not part of the Project Management Team, PPERRIA has had representatives at all of the public workshops and hearings. These comments will reflect the interests and concerns of this neighborhood, which lies between Oak Street and the city limits and is immediately adjacent to the Southeast Minneapolis Industrial Area (SEMI) which incorporates the Biosciences Zone and the University Research Park.

This study expands on several earlier studies and plans by increasing the number and variety of evaluation criteria, and including a wide range of official and community stakeholders in the development and ranking of the alternatives. It evaluates costs, benefits and impacts for six alternatives. With the exception of the first one, which is essentially a no-build, all are variations and extensions of the basic Granary Parkway as envisioned in the SEMI Master Plan from 2001, and echoed in the Grand Rounds studies and the Memorandum of Understanding with the University during light rail negotiations. The development of the corridor in the SEMI area will benefit Prospect Park and has been consistently supported by the association. PPERRIA's chief issues are to reduce traffic - in particular large truck traffic - on University Avenue through the neighborhood, and to provide the infrastructure that will open the large SEMI area to industrial and commercial development.

The study as made available for comment has no narrative report and does not make any recommendations. These comments will summarize the impacts and benefits of the alternatives presented, for the PPERRIA area, in hopes that the city will take these into consideration as it makes the choices that will inform the funding decisions for this infrastructure project. These comments follow the outline of the consultant's analysis.

Limited Build

The Limited Build option has minimal benefits and some negative impacts for Prospect Park area. It would extend some existing streets (27th, 29th, and 30th Avenues SE) from University Avenue to the rail yards, but would not construct any road in the Granary Corridor. This would open some additional properties to development, but all access would be to and from 4th Street and University Avenue, which is counter to neighborhood interests. This alternative and all of the others propose to extend 29th and 30th Avenues SE north beyond 4th Street to the Granary Corridor. These fall within the planning area of the Prospect Park LRT station, and emerging plans for that area might affect these

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streets. Planning staff should work with the Prospect Park 2020 team and possible developers to coordinate planning for these routes.

SEMI Access

The SEMI Access alternative proposes, in addition to extending the streets as above, building a roadway with pedestrian walkways and a bike path between Westgate Drive, just across the St. Paul border, and 25th Avenue SE. The route follows the south edge of the rail yards, north of the University Transitway. Building this road in the corridor has been something PPERRIA has advocated for many years. It was originally hoped that it would be in place before light rail construction began, to provide an alternative route for truck traffic to bypass University Avenue during and after construction. This new road is projected to remove approximately 3,500 vehicles per day from University Avenue in this segment. This number is likely to include many trucks whose destinations are north of University Avenue, including Highway 280. Trucks tend to slow traffic as they negotiate turns and traffic signals, this will be more important than ever with the LTR trains on University Avenue. Building the road also meets neighborhood goals by opening currently vacant and underutilized land to development that will benefit the neighborhood and the city as it draws jobs and possible residents to the area, and improves the tax base.

All of the comments on this alternative also hold true for each of the following alternatives, which are actually additions and enhancements to the basic SEMI Access plan.

SEMI Access Plus

SEMI Access Plus would extend the road westward from 25th, going north of the University Stadium as far as 17th Avenue SE, and would continue the adjacent bike path even farther, to the river. It would extend Oak Street north to connect with Granary Parkway. This roadway is projected to remove 3,700 vehicles per day from University east of Malcolm. This additional roadway would open more parcels in the Biosciences Zone to development, and that would likely encourage development in the rest of the SEMI area, so it is in line with PPERRIA goals. In addition, the longer bike path would provide attractive and safe bike connections from Prospect Park to other Southeast neighborhoods and the river. This scenario has an additional benefit not anticipated in the SEMI plan, because it will offer an additional exit route for traffic from the University stadium after large events, allowing cars to travel from the stadium to St. Paul and Highway 280 without crossing the Transitway or using University Avenue. This benefit would actually accrue even if the basic SEMI Access plan were extended just one long block, to 23rd Avenue.

Full Build

The Full Build scenario continues the roadway along railroad lines to a terminus near the 35W bridge - but not connecting directly to 35W. There remain several alternative plans for how it would connect to and affect existing streets in that neighborhood. This Full Build option provides the greatest impact on traffic throughout its reach, but the incremental benefit to traffic in the Prospect Park area is not significant. The roadway might be used by some Prospect Park residents, but its main function would be to serve existing and new industrial and commercial users, and those approaching the University campus from the west. As above, the bikeway would be an attractive feature for Prospect Park bike riders.

SEMI Access with Extended Greenway and

SEMI Access Plus with Extended Greenway

These two final alternatives envision the SEMI Access roadways as above, but with only a pedestrian/bicycle greenway continuing west from the road terminus at 23rd or 17th. While the

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greenway would be an attractive amenity, connecting the northern edge of Prospect Park with its neighbors, these alternatives do not add significantly to the development potential for the SEMI area, and do not relieve any more traffic on University Avenue in this area. This additional green space and corridor would be appealing if the city decides not to construct the road for its full length.

Summary

PPERRIA continues to support construction of Granary Road in the SEMI area, in order to relieve traffic on University Avenue east of the University and to encourage development of the important SEMI redevelopment area. In studying the Granary Corridor alternatives and the cost-benefit analysis by Kimley-Horn, PPERRIA determines that the neighborhood's goals are well served by all of the alternatives except the Limited Build. Regardless of which alternative is chosen, funding and planning considerations will probably require phasing of the project. Because planning, land acquisition, and infrastructure improvements are most advanced in the SEMI area, and because there is no opposition to the construction of the road in this area (except perhaps by property owners not yet ready to sell), PPERRIA strongly encourages the city to move forward with the SEMI Access or SEMI Access Plus segments, even as decisions related to the more problematic segment to the west are still under discussion.

Since some of the SEMI segment will also be part of the Grand Rounds, it presents an opportunity to work with the Park and Recreation Board to design appropriate parkway elements and paths for pedestrians and bicycles. This coordination and design should move forward as soon as possible. Coordination with St. Paul will also need to continue, regarding the connection to Westgate Drive. Building Granary Road only west of Malcolm Avenue, without a connection in St. Paul, would defeat the purpose of removing traffic from University Avenue in the LRT corridor, and could not be supported.

The Memorandum of Understanding between the University of Minnesota and the LRT partners anticipates Granary Road as a way to relieve stadium traffic following LRT construction, definitely a goal for PPERRIA as well. Because of this, PPERRIA would suggest extending the boundary of the basic SEMI Access alternative another long block to the west, to 23rd Avenue SE, to provide a better connection to University parking lots and the Bioscience Zone under this alternative.

We understand that the acquisition of railroad property is particularly problematic. We encourage the city to continue negotiations and to seek creative ways to reach appropriate solutions. The city also needs to work with planners for new developments in the Prospect Park Station area regarding the extensions of 29th and 30th Avenues SE.

We assume that no more studying of this corridor is necessary, and that it is time to move to the final stages of design and construction. PPERRIA looks forward to continuing to work with all partners and stakeholders as this long-awaited project is finally implemented.

Christina Larson, President

cc: Cam Gordon, Council Member, 2nd Ward
cc: Diane Hofstede, Council Member, 3rd Ward
cc: Heidi Hamilton, Deputy Director, Department of Public Works
cc: Miles Mercer, Senior Project Coordinator, Department of Community Planning and Economic Development
cc: Haila Maze, Principal Planner, Department of Community Planning and Economic Development

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GRANARY CORRIDOR STUDY



MARCY
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June 25, 2012

JoNette Kuhnau
Kimley Horn & Associates, Inc.
2550 University Avenue W, Suite 238N
Saint Paul, MN 55114-2006

Dear Ms Kuhnau,

Thank you for keeping MHNA informed of the cost/benefit analysis for the Granary Corridor, which runs through our neighborhood. This letter is official notice of MHNA's position on the study (made at the June 19, 2012 Board of Directors meeting):

MHNA finds the Full Build scenario unacceptable. It would bring unnecessary traffic into the neighborhood and turn more residential streets into access roads for the intersection of I-35W with 4th St and University Ave SE. It would preclude the creation in the future of a Greenway from the Stone Arch Bridge to Dinkytown and beyond. It does not follow the Marcy-Holmes Master Plan.

MHNA finds the No Build, SEMI Access and Semi Access Plus scenarios acceptable only because they do not include a new road connecting through neighborhood streets to I-35W and preclude the creation in the future of a Greenway from the Stone Arch Bridge to Dinkytown and beyond.

MHNA finds the SEMI Access Plus with Greenway (Full or Reduced) and SEMI Access with Extended Greenway (Full or Reduced) scenarios to be desirable public investments that would enhance the livability of the Marcy-Holmes neighborhood, the University District and the City of Minneapolis. The Full Extended Greenway would be a transformative addition to open space, livability and neighborhood connections on the East Bank.

MHNA commends the way the Granary Corridor Cost Benefit Study includes neighborhood livability and economic development as well as the flow of motorized vehicles as benefits to be counted. We also commend the inclusion of traffic disruption on neighborhood streets and lost opportunities for amenities and open spaces as part of the costs to be counted. MHNA finds that Council Member Diane Hofstede and Professor Ignacio San Martin were instrumental in guiding Minneapolis Public Works toward expanding understanding of a Cost/Benefit Study. We hope the City will adopt this enlightened approach.

Sincerely,

Douglas Carlson
President, MHNA



Granary Corridor Cost/Benefit Analysis
FINAL REPORT

PREPARED FOR:



Minneapolis
City of Lakes

PREPARED BY:



Kimley-Horn
and Associates, Inc.

JULY 2012