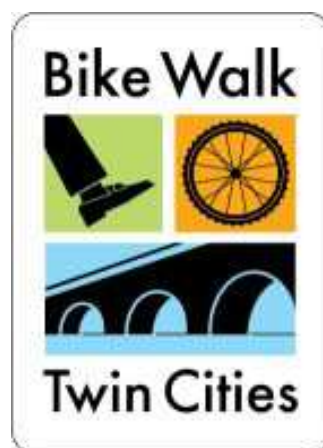
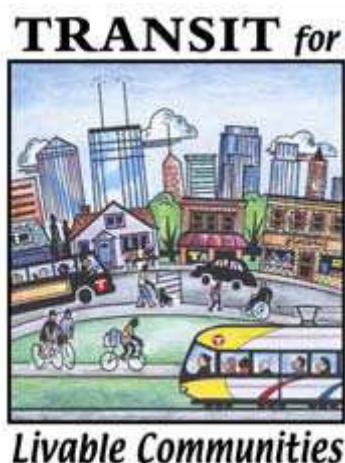


# Metropolitan Transit

## Bicycle and Pedestrian Connections to Transit Infrastructure Study

### Final Report

February 12, 2009



***Metropolitan Council Contract Number 07P138***

## **ACKNOWLEDGEMENTS**

The consultant team would like to thank the Metropolitan Council and Metropolitan Transit for their initiative to improve a variety of modes of transportation through this study. As a result of this desire to improve the existing transportation infrastructure into and out of the City of Minneapolis, a strategic plan has been produced to promote transit growth and future success.

The consultant team would also like to thank the Bicycle Pedestrian Access to Transit Technical Advisory Committee in providing insight throughout the study process. Their valuable time and knowledge with the study area strengthens the success of the overall study.

In addition, we appreciate input received from Aaron Isaacs on potential improvements to facilitate transit use that he had identified while working for Metropolitan Transit.

Sincerely,



Leslie H. Knapp, PG  
Project Manager  
Howard R. Green Company

## **BICYCLE PEDESTRIAN ACCESS TO TRANSIT TECHNICAL ADVISORY COMMITTEE MEMBERS**

Christina Morrison – St Paul  
Charles Carlson-Metropolitan Transit  
John Siqveland – Metropolitan Transit  
Craig Lamothe Metropolitan Transit  
Tony Hall-BWTC  
Steve Clark – BWTC

Karen Nikolai – Hennepin County  
Tom Foley – Richfield  
Mary Jackson – Mn/DOT  
Anna Flintoft –Minneapolis  
James Andrew –Metropolitan Council

## **CONSULTANT TEAM**

**Howard R. Green Company**  
2550 University Avenue W., Suite 400N  
St. Paul, MN 55114  
(651) 644-4389

Leslie Knapp, PG, Project Manager  
Jack Broz, PE  
Jeremiah Menk  
Drew McGovern, PE  
Joel Odens, RLA,  
Scott Mattes, PE, CIH  
Pete Lovell  
Anne Packard

**TABLE OF CONTENTS****REPORT SECTION** **PAGE**

<b>1.0</b>	<b>METHODOLOGY</b>	<b>1</b>
<b>2.0</b>	<b>ANALYSIS</b>	<b>2</b>
<b>3.0</b>	<b>PROJECT IDENTIFICATION</b>	<b>12</b>
<b>4.0</b>	<b>PROJECT COST</b>	<b>55</b>
<b>5.0</b>	<b>REFERENCES</b>	<b>56</b>

**TABLES**

<b>1</b>	<b>BUS STOP RANKING SYSTEM</b>
----------	--------------------------------

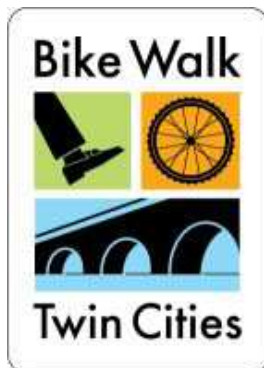
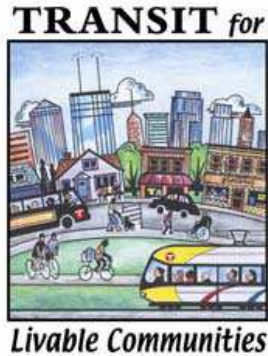
**FIGURES**

<b>1</b>	<b>PROJECT AREA MAP</b>
<b>2</b>	<b>BUS STOP UNWEIGHTED SCORE MAP</b>
<b>3</b>	<b>BUS STOP BUFFER MAP</b>
<b>4</b>	<b>BUS STOP WEIGHTED SCORE MAP</b>
<b>5</b>	<b>BUS STOP PEDESTRIAN SCORE MAP</b>
<b>6</b>	<b>BUS STOP SAFETY SCORE MAP</b>
<b>7</b>	<b>BUS STOP FACILITIES SCORE MAP</b>

**APPENDICES**

<b>A</b>	<b>SUMMARY OF QUESTIONNAIRE RESULTS</b>
<b>B</b>	<b>BUS STOP PRIORITIZATION RANKING REPORT</b>
<b>C</b>	<b>COST INFORMATION</b>

## 1.0 METHODOLOGY



### 1.1 PROJECT GOAL

The goal of this project, funded by a Non-Motorized Transportation Pilot Program award from Bike/Walk Twin Cities (BWTC) administered by Transit for Livable Communities (TLC), was to compile a list of infrastructure improvements that would improve bicycle and pedestrian connections to transit within the project study area (Figure 1). Communities can then use this list to apply for funding to complete identified improvements through Transit for Livable Communities' Bike/Walk Twin Cities program or other funding sources if they choose to do so.

### 1.2 PROJECT APPROACH

The project involved analyzing existing conditions in each of the corridors identified by Metropolitan Transit. These corridors had been ranked by Metropolitan Transit into three "tiers" (Figure 1) based on the frequency of service, bicycle and pedestrian count data, and the number of recorded pedestrian and bicycle crashes in the area.

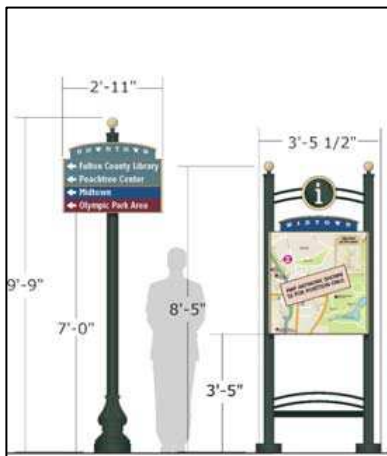
This project was conducted in phases:

1. As part of the data collection process, a questionnaire was developed and distributed to agency and community representatives to identify issues pertaining to bicycle and pedestrian access to transit and sources of available information.
2. Bus stops within the project area were then ranked based on their need for improvements using Geographic Information System (GIS). Existing data from the Metropolitan Council, Metropolitan Transit, and communities was used in this analysis. Existing data was supplemented by collecting field data along three corridors.
3. The results of the bus stop rankings were then further evaluated by identifying the types of improvements required to promote better access to transit, defining potential projects, and assigning estimated costs for project implementation.

## 2.0 ANALYSIS



Source: Bicycling & Transit Presentation - John Sigveland



Source: Central Atlanta Progress & the Midtown Alliance

## 2.1 TECHNICAL ADVISORY COMMITTEE INPUT

A Technical Advisory Committee (TAC) provided input on critical aspects of this project. The list of TAC members is included in the acknowledgements in the front of this report. Three meetings were held with the TAC. The role of the TAC was to provide input on the information collected, analyses conducted, and types of infrastructure improvements to be included. The TAC helped develop ranking criteria for bus stop prioritization ranking and provided input on project identification. The TAC also provided the following input regarding system-wide access to transit issues.

### ➤ Providing third bicycle rack

One hindrance cited as affecting the bicyclist use of transit was that bicyclists sometimes have to let more than one bus go by in order to get an open space on a bus bike rack. There are currently at least two bike racks on all buses with the option of allowing one additional bike to be carried onto a bus. Metropolitan Transit could add space to accommodate up to three bicycles per bus, after that the State Patrol has issues with the racks interfering with illumination. ***The addition of the third bicycle rack is something that could be considered by TLC or Metropolitan Transit as a way to facilitate bike-to-transit-commuting.***

### ➤ Providing wayfinding information

The availability of wayfinding information (information on transit connections, connecting modes, trailheads, bike sharing kiosks, storage, etc.) was discussed at the meeting. ***Since it is not currently available, the addition of wayfinding information is something that could be considered by the TLC or Metropolitan Transit as a way to facilitate both bicycle and pedestrian access.***

### ➤ Need for additional bicycle parking at major bus stops

***The availability of more bicycle parking at major bus stops was identified as something that could be considered by TLC or Metropolitan Transit as way to facilitate bike-to-transit commuting.***

## 2.0 ANALYSIS

## 2.2 QUESTIONNAIRE AND DATA COLLECTION

A summary of the responses to the questionnaire that was distributed to agency and community representatives is included in Appendix A. The sources identified for existing data were contacted as part of this project and the data received was incorporated in the bus stop prioritization ranking database. Two additional system-wide access-related issues that would pertain to most communities and corridors were identified that could benefit from funding:

- Lack of snow removal

The lack of snow removal in the vicinity of bus stops, particularly the mounds left by snow plows, was identified as an access issue. Some of the stops are maintained by the Metropolitan Council, some by area merchants and others by the local community (if they are constructed locally rather than by Metropolitan Council). ***The development and implementation of a process resulting in more consistent snow removal is a method that could be considered by the TLC or Metropolitan Transit as a way to facilitate access to transit.***

- ADA accessibility is a priority need

***ADA accessibility is a legal requirement and should be given the highest priority in improving access.***

## 2.3 BUS STOP PRIORITIZATION RANKING

### 2.3.1 Ranking Process

The bus stop prioritization ranking process examined the bus stops within the project area and ranked them based on their need for improvements to facilitate access for both bicyclists and pedestrians. The bus stops that received the highest scores were the most deficient and, correspondingly, were most in need of improvement.

The TAC helped to identify and rank variables that affect access and convenience of use. The pyramid to the left represents the prioritization of issues that affect pedestrian/bicycle use of transit. Following the general principal of the triangular graphic, access to meet legal ADA requirements, is most critical. Once this legal access is gained, safety becomes the next critical issue. As the categories of issues are addressed from the top of the pyramid to the base, the appeal of bicycle/pedestrian usage increases.



Source: Prioritization of Issues that affect Transit Use, TLC

## 2.0 ANALYSIS

Table 1 lists the improvement variables that factored into each bus stop's total score and indicates the maximum number of points that could be awarded per variable.

- Variables that fell under Legal Access were determined to be the most important and could score from 0 points (not needing improvement) to 3 points (most in need of improvement).
- Variables that fell under Safety could score between 0 points (not needing improvement) to 2 or 3 points (most in need of improvement), depending upon the importance that the TAC placed on the particular variable. One of the variables, crash history, was used as an indicator of a need for overall safety improvements even though the crashes themselves may not be related to a lack of facilities or to the solutions being proposed. Crash history has more to do with the general environment for bicycling or walking.
- Variables that fell under Facilities or ways to make using transit more comfortable or more convenient could score from 0 (not needing improvement) to 1 point (most in need of improvement).



## 2.0 ANALYSIS

TABLE 1		
BUS STOP RANKING SYSTEM		
Variable	Type	Max. Score
ADA Accessible	Legal Access†	3 points
ADA Pad for Wheelchair	Legal Access†	4 points
Crash History - Bicycle	Safety	3 points
Crash History - Pedestrian	Safety	3 points
Safety Crosswalk Access†	Safety	3 points
Lighting††	Safety	3 points
Level of Service	Safety	2 points
Sidewalk Access	Safety	2 points
Bike Lane Access	Safety	2 points
Right-of-Way Buffer	Safety	2 points
Shelter	Facilities	1 point
Bench	Facilities	1 point
Bus Schedule	Facilities	1 point
Trash	Facilities	1 point
Bike Locker	Facilities	1 point

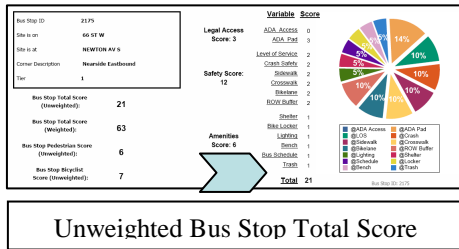
† The ADA Legal Access variables do not pertain to access issues for the hearing and visually impaired.

‡ Intersection timing issues - both crossing time and waiting time - were not incorporated into this analysis.

†† Lighting is assumed to be at street level as opposed to pedestrian level.



## 2.0 ANALYSIS



### 2.3.2 Unweighted Bus Stop Total Score

The sum of these variable scores at each bus stop on a corridor equals the Bus Stop Total Score (unweighted) as mapped in Figure 2. The Bus Stop Prioritization Ranking Report in Appendix B is arranged by bus stop in descending order based on the unweighted Bus Stop Total Score. Unweighted Bus Stop Total Scores ranged from a maximum score of 26 (with the highest need for improvement) to a minimum score of 4 (with the lowest need for improvement). The graphic to the left indicates where the bus stop unweighted total score appears in the Bus Stop Prioritization Ranking Report.

For most variables, either the maximum score or 0 was awarded to each bus stop. Points were awarded when certain access, safety, or facility criteria were missing (i.e. Sidewalk Access, Shelter, Lighting, ADA Accessible, etc.). Several other variables were awarded based on distance to or from a bus stop as shown in schematic form in Figure 3 - Bus Stop Buffer Map and are described below.

For Crash History – Bicycle, 0 points were awarded when 0 or 1 crash incident had taken place within  $\frac{3}{4}$  mile of the bus stop, 1 point was awarded when 2, 3, or 4 crash incidents had taken place within  $\frac{3}{4}$  mile of the bus stop, and 3 points were awarded when 5 or more crash incidents had taken place within  $\frac{3}{4}$  mile of the bus stop

Crash History - Pedestrian was scored in the same manner as Crash History - Bicycle except that only crash incidents within  $\frac{1}{4}$  mile of bus stops were counted rather than  $\frac{3}{4}$  mile.

For Crosswalk Access, 0 points were awarded when a crosswalk was present within 100 feet of the bus stop, 1 point was awarded when a crosswalk was located 100 to 200 feet from the bus stop, 2 points were awarded when a crosswalk was located 200 to 300 feet from the bus stop, and 3 points were awarded when the nearest crosswalk was more than 300 feet from the bus stop.

Points were awarded for Lighting when no lighting was present within 50 feet of the bus stop. Points were awarded for Sidewalk Access when no sidewalks were present within 30 feet of the bus stop. Points were awarded for Bike Lane Access when no bike lanes were present within 200 feet of the bus stop.

## 2.0 ANALYSIS



Source: TLC Minnesota

A Level of Service (LOS) index indicates the risk to the cyclist of having an accident. A larger index value indicates that a road is more dangerous for bicycling; the streets can then be compared to determine which streets are safer for bicycling. The LOS analysis used seven categories of data:

- Average daily traffic flows
- Speed limits
- The number of travel lanes
- Whether or not parallel parking exists on the road
- Whether or not buses and/or truck regularly use the road
- Whether or not the road has curbs
- Whether or not "side friction" exists

Raw bicycle LOS values were calculated using the following equation:

$$LOS = \frac{\text{Average Daily Traffic}/67 * (\text{Speed Limit} - \text{Cyclist's Speed})^2}{10 * (\text{Number of Travel Lanes}) + 4 * (\text{Usable Bike Space})^2}$$

By dividing the Average Daily Traffic by 67 the formula approximates the number of vehicles encountered during 10 minutes on the road during peak hours. By comparing roads based on spending 10 minutes bicycling on the road, the time spent on the interval is controlled.

The second part of the numerator, (Speed Limit – Cyclist's Speed)<sup>2</sup>, deals with how fast the cars are passing the cyclist on the road. The speed at which a car passes the cyclist is known to increase the risk of accidents. For this analysis, the speed of the cyclist is held constant at 10 miles per hour (mph), a realistic assumption for the study area. By squaring this difference, this component is weighted more heavily than the actual number of cars passing the cyclist.

The denominator of the formula shows the amount of space the bicyclist has at their disposal. The more room a cyclist has on a street, the safer that street is for cycling. The first part of the denominator [10 \* (Number of Travel Lanes)], indicates that as the traffic is dispersed throughout all lanes, a lower percentage of cars traveling on that road might interfere with a cyclist, thus increasing the safety of the cyclist.

## 2.0 ANALYSIS



Source: Bicycling & Transit  
Presentation - John Siqveld

By adding the second half of the denominator  $[4 * (\text{Usable Bike Space})^2]$ , the amount of space the cyclist has available also greatly increases the safety to the cyclist. The Usable Bike Space is determined by first finding the width of the travel lane nearest to the curb, or the curb lane. Next, one foot is subtracted from this width if there is a curb, another foot is subtracted if buses and/or trucks regularly use the road, and another foot is subtracted if "side friction" is determined to exist on that road. Side friction is described below. Finally, an additional nine feet is subtracted if parallel parking exists on that roadway. By squaring the usable bike space and then multiplying by four, the usable bike space plays a more significant role in determining the safety of that road for cycling.

The category "side friction" reflects whether or not a bicyclist would feel comfortable about the amount of activity occurring along the side of the road. Other than traffic already on the street, are there enough entryways onto the street that would cause a cyclist to be concerned about interfering with vehicles entering or leaving the street?

Due to the lack of data availability the following values were universally assigned for this evaluation:

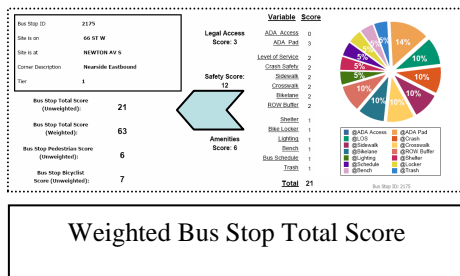
- Usable Bike Space = 0.
- Number of Travel Lanes = 4, except when a value was available from field data collected by a HR Green field technician.
- Cyclist's Speed = 10 miles per hour.

The raw LOS value was then converted into a LOS score ranging from 0 to 2 by grouping the raw scores into three quantiles. Bus stops with raw LOS values in the highest third received a LOS score of 2 while those in the middle third received a score of 1 and those in the bottom third received a score of 0. Comprehensive data is not available for a number of the variables. Except for the default values used in calculating LOS values, a lack of data resulted in no points being awarded for that variable.

### 2.3.3 Weighted Bus Stop Total Score

As part this project, Metropolitan Transit assigned Tier rankings to the bus routes included in the study area. These routes had been ranked into three "tiers" (Figure 1) based on the frequency of service, bicycle and pedestrian count data,

## 2.0 ANALYSIS



and the number of recorded pedestrian and bicycle crashes in the area. In addition to the unweighted Bus Stop Total Score described above, a weighted Bus Stop Total Score was also included in the report as mapped in Figure 4. This score is shown in the area identified in the graphic on the left in the report included as Appendix B. The weighting is based on the tier assigned to the bus route that the bus stop serves. Tiers were weighted as follows:

- Tier 1 = 3 points
- Tier 2 = 2 points
- Tier 3 = 1 point

The weighted Bus Stop Total Score was calculated using the following equation:

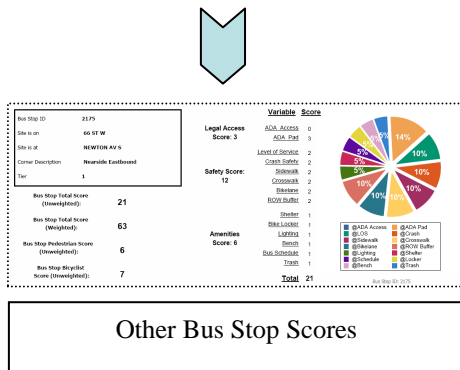
$$\text{Bus Stop Total Score (Weighted)} = (\text{Sum of Variable Scores}) * (\text{Tier Weighting})$$

Weighted Bus Stop Total Scores ranged from a maximum score of 78 (most in need of improvement) to a minimum score of 6 (least in need of improvement).

### 2.3.4 Other Bus Stop Scores

Several other scores were also presented in this report as indicated in the graphic to the left.

- The Bus Stop Pedestrian Score (unweighted) is the sum of the scores for Crash History - Pedestrian, Sidewalk Access, Crosswalk Access, and Right-of-Way Buffer (Figure 5).
- The Bus Stop Safety Score is the sum of all the scores for variables classified as Safety under Type of Improvement (Figure 6).
- The Bus Stop Facilities Score is the sum of all the scores for variables classified as Facilities under Type of Improvement (Figure 7).
- Finally, the pie chart in the GIS summary (Appendix B) indicates the contribution each variable makes toward a bus stop's unweighted Total Score.



## 2.0 ANALYSIS



Source: Bicycling & Transit  
Presentation - John Siqveland



Source: Bicycling & Transit  
Presentation - John Siqveland

## 2.4 FIELD DATA COLLECTION

Field data was collected on bicycle along three corridors selected by the in cooperation with the TAC:

- Bass Lake Road (Brooklyn Center)
- 66th Street (Richfield)
- W 7th Street (St. Paul)

The field data was collected over the course of two Saturdays in the fall of 2008. The data was included in the GIS model for determining bus stop prioritization. Data was collected for bus stops on both sides of the street while navigating the route in a single direction. A follow-up check of the route was then conducted on the return ride to the starting point of the corridor. The field data collected included:

- Sidewalk adjacent to bus stop
- Bench at bus stop
- Distance to crosswalk
- Shade tree at bus stop
- Speed limit along bus route
- Crosswalk location
- Route info at bus stop
- Pedestrian/ADA curb cut on corner near bus stop
- Bike lane along bus route
- Bike rack at bus stop
- Right-of-way buffer
- Bus schedule at bus stop
- Trail access near bus stop
- Controlled signal crossing location
- Covered bike rack at bus stop

## 2.0 ANALYSIS



Metropolitan Transit Bus Shelter  
Source: HR Green

- ADA access to shelter at bus stop
- Lighting at bus stop
- Bike locker at bus stop
- Wide shoulder along bus route
- Trash can at bus stop
- Distance to signalized intersection
- Skewed intersection

ADA comments were added if it was determined that there were additional ADA factors not addressed by curb cuts and shelter access. If it was deemed that a physically impaired person would be able to access the stop, the stop was populated as ADA accessible. If not, it was not considered ADA accessible.

Crosswalks were identified by signage or street markings. Unmarked crosswalks were not counted as crosswalks during the field study. All field data was populated by visual inspection using a handheld PDA.

The field data is much more detailed than the information currently available from the Metropolitan Council, Metropolitan Transit, or communities. ***Now that the framework and methodology for collecting this data has been established it would be relatively inexpensive for the TLC or Metropolitan Transit to collect the data for more or even all of the corridors in the study area so that a more complete database is available for future evaluations.***



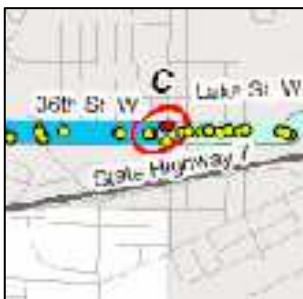
### 3.0 PROJECT IDENTIFICATION



Corridor Project Example



Cluster Project Example



Isolated Project Example

### 3.1 PROCESS

Project Identification was the third phase of this project. Bus stop rankings from the previous phase were graphically plotted (Figures 2 through 7). The weighted total scores were graphically converted to an even distribution of green, yellow, and red circles. This phase of the project focused on the red circles, which represent most deficient bus stops. Projects were primarily identified based on the graphical plot and further refined based proximity of stops with similar deficiencies and are mapped in Figure 4.

Table 1 lists the 15 improvement variables used to rank a bus stop, this was the guideline used to group similar deficient stops. GIS was used to look at the 15 improvement variables individually, providing improvement patterns. Improvement patterns allowed for the addition of a few less deficient bus stops represented by yellow circles. For example, if a group of bus stops all have a lighting deficiency and within this group, one stop is rated yellow, but has lighting deficiency, it was included with the group of red bus stops.

The identified projects fell in one of three groups:

- **Corridor projects** - routes consisting of several adjacent stops along a particular route within the limits of a particular city. Corridor projects that involve major road reconstruction are not accounted for in this report.
- **Cluster projects** - small groupings of bus stops that share similar characteristics within a city.
- **Isolated projects** - bus stops that are unique to a given location and do not fall within the corridor or cluster project groupings.

### 3.2 IMPROVEMENT ITEMS

The various bus stop improvements were divided into three categories; legal access, safety, and facilities. Improvements were recommended based on GIS data, Google Earth images, Google Street View, and Annual Average Daily Traffic (AADT).



### 3.0 PROJECT IDENTIFICATION



Source: TLC Minnesota



Lake Harriet/Lake Calhoun, MN  
Source: HR Green



Pedestrian Curb Cut/ADA Ramp  
Source: City of Portland

Possible improvements and their category are listed below:

#### ➤ Legal Access

- ADA pad
- Pedestrian curb cut and ADA ramp

#### ➤ Safety

- Bike lane
- Bump-out
- Crosswalk paint
- Crosswalk raised
- Hawk Signal
- Median treatment
- Median/Refuge island
- Mid-block crossing
- Pedestrian scale lighting
- Restripe "Road Diet" add bike lane
- Sidewalk
- Signal countdown timer
- Street lights

#### ➤ Facilities

- Bench
- Bike lockers
- Shelter (pedestrian)
- Trash receptacle

A typical description of each possible enhancement was created and an opinion of probable cost was then generated for each corridor improvement. A typical description of the each enhancement alternatives is listed below:

#### ADA Pad

An 8'x10' (80 SF) concrete pad was used as the typical ADA pad size. This pad would typically be located adjacent to an existing sidewalk and would allow ADA access to the transit system. For cost estimate purposes, installation of ADA pads was recommended at all deficient stops.

#### Pedestrian Curb Cut and ADA Ramp

A typical 5'x18' pedestrian curb cut and ADA ramp was used to allow for ADA access. For cost estimate purposes, a pedestrian curb cut and ADA ramp was recommended at all deficient stops. For more images refer to:

<http://www.pedbikeimages.org/searchResult.cfm?searchtype=simple&categoryId=21&fromCategory=19>

### 3.0 PROJECT IDENTIFICATION



Bike Lane  
Source: HR Green



Independence Ave.,  
Champlin, MN



SRTS Guide, Tucson AZ  
Source: Michael Cynecki



Source: Caka Seiderman  
Transportation Program  
Manager, City of Cambridge

#### Bike Lane

The painting/stripping of an existing roadway was used to designate a typical bike lane. For cost estimate purposes, a bike lane was recommended when adequate shoulder space was available.

<http://www.pedbikeimages.org/searchResult.cfm?searchtype=simple&categoryId=177&fromCategory=19>

#### Bump-out

A typical bump-out, also known as a "curb extension", is defined as a shortening of the distance a pedestrian must walk to cross a street. They are typically located at the intersection. An 8'x20' (160 SF) area would be a typical bump-out size.

#### Crosswalk Paint

The painting/stripping of an existing roadway was used to designate a typical pedestrian crossing either at mid-block or at the intersection. For cost estimate purposes, crosswalks were included on a project by project basis and had an average length of 40'.

#### Raised Crosswalk

The raising of a pedestrian crossing approximately 6" was used to eliminate the curb and provide a smooth transition for pedestrians either at mid-block or at an intersection.

<http://www.portlandonline.com/transportation/index.cfm?&a=62149&c=35932#se55th>

#### Hawk Signal

This device is activated by a pedestrian or bicyclist who wishes to cross the street by flashing yellow and red signals to vehicles at designated crossings. For cost estimate purposes, a Hawk system was included at non-signalized locations with high pedestrian crashes.

#### Median Treatment

Landscaping or fencing can be installed in a median to discourage pedestrians from crossing the street at unwanted locations. For cost estimate purposes, median treatments were included in commercial areas with higher AADT and pedestrian crashes. Median fences can be unattractive and discourage pedestrian movement. Landscaping, sometimes in conjunction with fences, can reduce these effects.

### 3.0 PROJECT IDENTIFICATION



Pedestrian Scale Lighting  
Source: HR Green



Metropolitan Transit Shelter  
Source: HR Green

#### Median/Refuge Island

The typical median needs to have a curb cut and be at least 6 feet wide. The typical median needs to have a curb cut and be at least 6 feet wide. We are assuming a typical median island of 6'x20' (120 SF) for this study. For costing purposes, a refuge island was included when the road layout allowed and when there was greater distance between intersections or a significant draw on one side of the road.

<http://www.pedbikeimages.org/searchResult.cfm?searchtype=simple&categoryId=176&fromCategory=19>

#### Mid-block Crossing

These crossings are painted/striped and should be accompanied by signs or signals. If the roadway is more than 2 lanes wide a median/refuge island should be provided. We are assuming the typical roadway is two lanes for this study.

#### Pedestrian Scale Lighting

The installation of a 12' to 15' tall lighting fixture was used to provide illumination for the sidewalk and roadway. It was assumed the cost includes both installation and cost of the fixture. For cost estimate purposes, pedestrian scale lighting was generally not included. Stops that have a lighting deficiency are accounted for under the Street Light item. Pedestrian scale lighting is a good option and should be considered on a project by project basis.

#### Restripe "Road Diet" Add Bike Lane

A typical reduction in the width of 4 existing drive lanes down to 3 lanes was used to accommodate the addition of a striped bike lane. According to State Aid regulations and for cost estimate purposes, a road diet was recommended on 4 lane roads with no shoulder and an AADT less than 15,000. Current road layout was based on Google Earth aeriels.

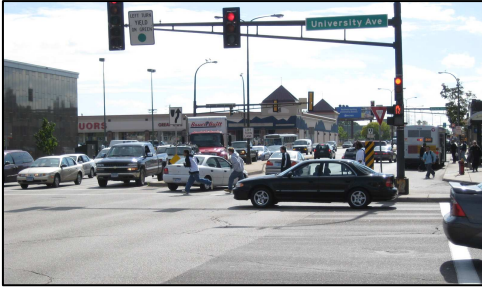
<http://www.tfhrc.gov/safety/hsis/pubs/04082/index.htm>

#### Sidewalk

A typical sidewalk for estimation purposes is defined as a 5' wide (4" thick) band of concrete from the street corner/curb cut to an identified bus stop/shelter located at the back of curb.

<http://www.pedbikeimages.org/searchResult.cfm?searchtype=simple&categoryId=20&fromCategory=19>

### 3.0 PROJECT IDENTIFICATION



University Ave. Signal, St. Paul, MN  
Source: HR Green

#### Signal Countdown Timer

Signals were located at intersections and it was assumed that all 4 pedestrian crosswalks would have countdown timers installed at all curbs (8 per intersection). For cost estimate purposes, signal countdown timers were included based on Google street view data, data should be confirmed on a project by project basis.

#### Street Light

Street lighting is used to light both the roadway and any adjacent sidewalks. The cost includes both installation and cost of the fixture. For cost estimating purposes, a street light is included at all stops that are listed as deficient.

#### Bench

The cost and installation of a typical 6' heavy duty grade steel bench. For cost estimating purposes, a bench is included at all stops that are listed as deficient.

#### Bike Locker

The cost and installation of a typical heavy duty grade steel bike locker for a minimum of four bikes. For cost estimate purposes, a bike shelter was included at every 5<sup>th</sup> stop.

[http://www.dot.state.mn.us/bike/pdfs/Bicycle%20and%20Pedestrian%20Toolbox\\_2008\\_04.pdf](http://www.dot.state.mn.us/bike/pdfs/Bicycle%20and%20Pedestrian%20Toolbox_2008_04.pdf)

#### Shelter

The cost and installation of a typical shelter (6'x8'). For cost estimate purposes, a shelter was recommended every 3<sup>rd</sup> stop.

#### Trash receptacle

The cost and installation of a typical heavy duty grade steel trash receptacle. For cost estimate purposes, a trash receptacle was included at all stops listed as deficient.

### **3.0 PROJECT IDENTIFICATION**

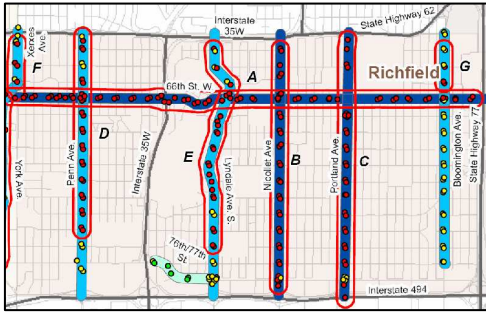
#### **Complete Street**

A complete street is defined as a total renovation of an existing corridor to accommodate all modes of transportation. A project could be designated to receive a complete street but no cost analysis was assigned due to the variety of conditions. Complete streets may be identified but are not analyzed in this study. <http://www.completestreets.org/>



## 3.0 PROJECT IDENTIFICATION

### RICHFIELD



## 3.3 PROJECTS

### 3.3.1 Richfield

The GIS data gathered for existing sidewalks within the City of Richfield is inaccurate. Due to a programming error the data on existing sidewalks was documenting them as non-existent for its analysis. This results in an inaccurate representation of existing sidewalks in Richfield. Most importantly, the corridor rankings are affected but not significantly enough to place the identified corridors in a different ranking level. The overall Richfield corridor rankings remain accurate.

#### Richfield A

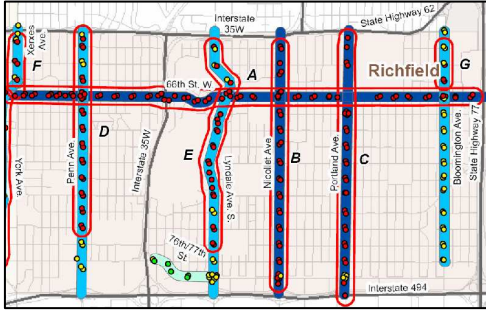
The entire east-west route along 66<sup>th</sup> Street in Richfield was identified as a corridor project. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Richfield "A" project include the following:

- A) ADA pads
- B) Crosswalk (paint)
- C) Crosswalk (raised)
- D) Hawk signals
- E) Median treatment
- F) Signal countdown timers
- G) Street lights
- H) Benches
- I) Bike lockers
- J) Shelters
- K) Trash receptacles

### 3.0 PROJECT IDENTIFICATION

#### RICHFIELD



Traffic volumes are too high to recommend a road diet, much of the corridor already had a center shared turn lane. A complete street concept would be needed to add bike lanes to this project area. This would require major reconstruction of the roadway. The majority of the bike safety issues are at the intersection of 66<sup>th</sup> Street and York Ave, an intersection improvement project is recommended to make this intersection pedestrian and bike friendly.

Median treatment is recommended on 66<sup>th</sup> from Lake Shore Dr to 1<sup>st</sup> Ave, median treatment would discourage mid-block crossing through this commercial zone and improve pedestrian safety. A Hawk Signal system could be utilized in this same vicinity to provide an efficient and safe means for pedestrians to cross 66<sup>th</sup>.

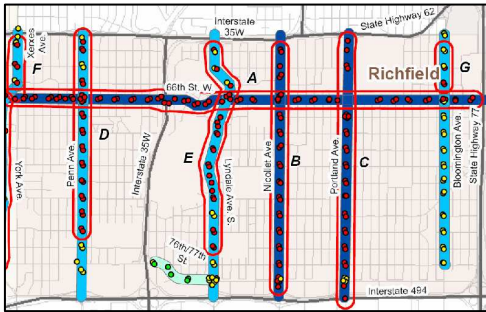
There are many locations along 66<sup>th</sup> St that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

The corridor project contains locations along 66<sup>th</sup> Street that have deficient facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.



### 3.0 PROJECT IDENTIFICATION

# RICHFIELD



## Richfield B

The north-south route along Nicollet Avenue in Richfield was identified as a corridor project. This proposed project runs the entire length of Nicollet Avenue from Highway 62 on the northern end through Interstate 494 along the southern edge of Richfield. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Richfield “B” project include the following:

- A) ADA pads
- B) Crosswalk (paint)
- C) Median treatment
- D) Restripe "Road Diet" add bike lane
- E) Signal countdown timers
- F) Benches
- G) Bike lockers
- H) Shelters
- I) Trash receptacles

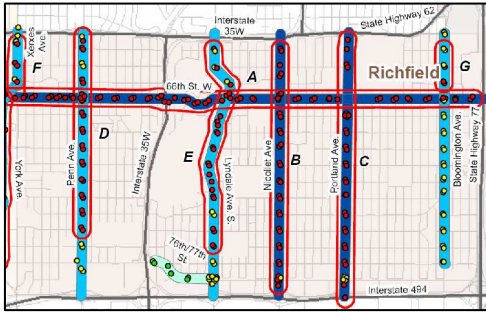
The section of Nicollet Ave between 66<sup>th</sup> St and 75<sup>th</sup> St is a candidate for a road diet (less than 15,000 ADT); this road diet would reduce automobile accidents, provide room for bikers, and provide a buffer between pedestrians and traffic.

Median treatment is recommended on Nicollet from 64<sup>th</sup> St to 67<sup>th</sup> St, median fences will discourage mid block crossing through this commercial zone and improve pedestrian safety.

The corridor project contains locations along Nicollet Avenue that have deficient site facilities near bus stops Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### RICHFIELD



#### Richfield C

The north-south route along Portland Avenue in Richfield was identified as a corridor project. This proposed project runs the entire length of Nicollet Avenue from Highway 62 on the northern end through Interstate 494 along the southern edge of Richfield. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Richfield “C” project include the following:

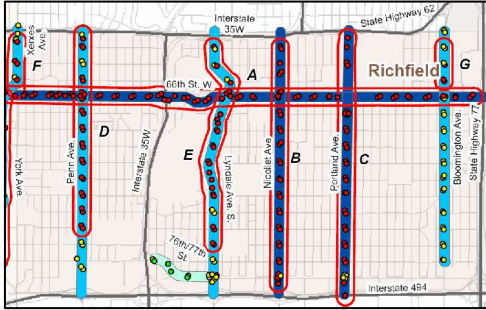
- A) ADA Pads
- B) Crosswalk (paint)
- C) Restripe “Road Diet” add bike lane
- D) Signal countdown timers
- E) Streetlights
- F) Benches
- G) Bike lockers
- H) Shelters
- I) Trash receptacles

The section of Portland Ave between 66<sup>th</sup> St and 75<sup>th</sup> St is a candidate for a road diet; this road diet would reduce automobile accidents, provide room for bikers, and provide a buffer between pedestrians and traffic.

The cluster project contains locations along Portland Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### RICHFIELD



#### Richfield D

The north-south route along Penn Avenue in Richfield was identified as a corridor project. This proposed project runs from Highway 62 through W. 74<sup>th</sup> Street. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Richfield “D” project include the following:

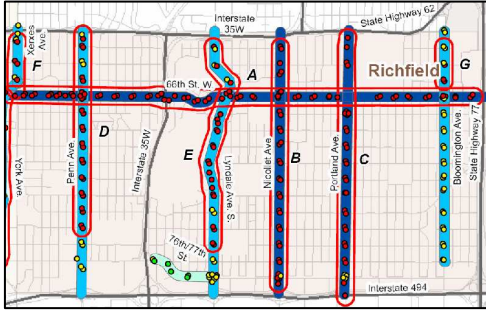
- A) ADA Pads
- B) Crosswalk (paint)
- C) Restripe “Road Diet” add bike lane
- D) Signal countdown timers
- E) Streetlights
- F) Benches
- G) Bike lockers
- H) Shelters
- I) Trash receptacles

The section of Penn Ave between 66<sup>th</sup> St and 75<sup>th</sup> St is a candidate for a road diet; this road diet would reduce automobile accidents, provide room for bikers, and provide a buffer between pedestrians and traffic.

The corridor project contains locations along Penn Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### RICHFIELD



#### Richfield E

The north-south route along Lyndale Avenue in Richfield was identified as a corridor project. This proposed project runs from Highway 62 along the northern edge of Richfield through W. 75<sup>th</sup> Street in southern Richfield. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Richfield “E” project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Median treatment
- D) Restripe “Road Diet” add bike lane
- E) Signal countdown timers
- F) Streetlights
- G) Benches
- H) Bike lockers
- I) Shelters
- J) Trash receptacles

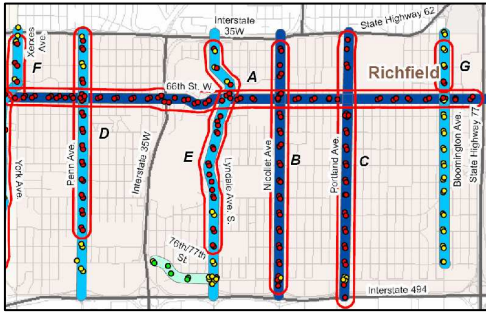
The section of Lyndale Ave between 66<sup>th</sup> St and 75<sup>th</sup> St is a candidate for a road diet; this road diet would reduce automobile accidents, provide room for bikers, and provide a buffer between pedestrians and traffic.

Median treatment is recommended on Lyndale from 64<sup>th</sup> St to 67<sup>th</sup> St. Median fences will discourage mid block crossing through this commercial zone and improve pedestrian safety.

The corridor contains locations along Lyndale Avenue that have deficient site facilities near bus stops Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### RICHFIELD



#### Richfield F

The north-south route along Xerxes Avenue in Richfield was identified as a cluster project. This proposed project runs from Xerxes Avenue along the western edge of the City through 66<sup>th</sup> Street in northwestern Richfield. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

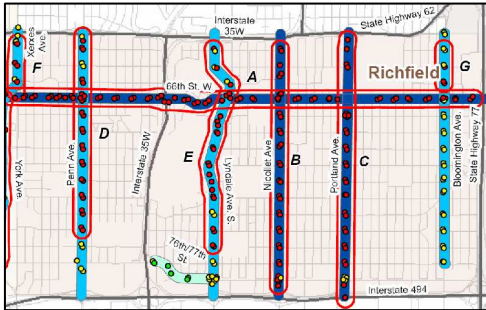
Tasks recommended for the Richfield “F” project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Shelters
- G) Trash receptacles

The cluster project contains locations along Xerxes Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### RICHFIELD



#### Richfield G

The north-south route along Bloomington Avenue in Richfield was identified as a cluster project. This proposed project runs from E. 64<sup>th</sup> Street through E. 66<sup>th</sup> Street in northeastern Richfield. This was a result of observing similar patterns in the various GIS mapping exercises along this Richfield corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Richfield “G” project include the following:

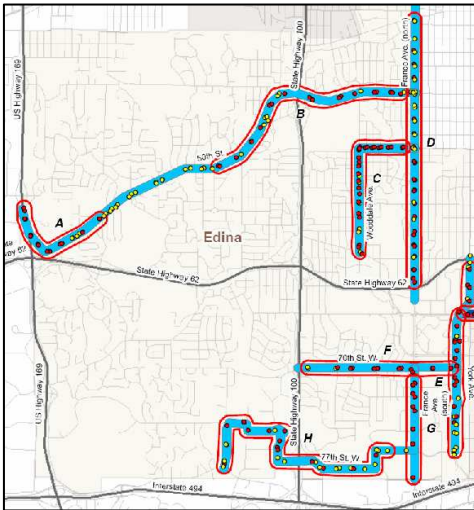
- A) ADA Pads
- B) Crosswalk (paint)
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

The cluster project contains locations along Bloomington Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.



## 3.0 PROJECT IDENTIFICATION

### EDINA



### 3.3.2 Edina

#### Edina A

The identified corridor project runs from the first transit stop south of the Londonderry Road along Lincoln Drive and continues eastward as London Drive turns into Vernon Avenue South ending near Gleason Road. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor include: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Edina "A" project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along the project corridor that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

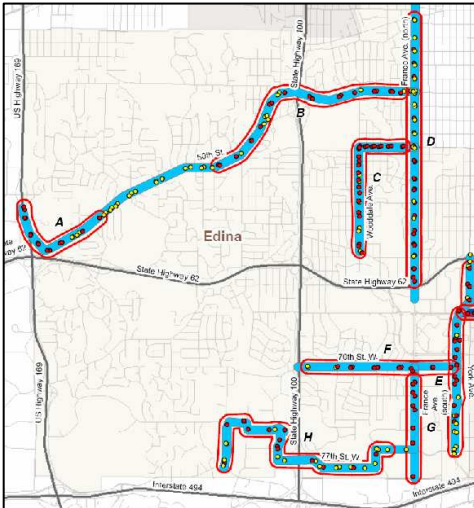
#### Edina B

The identified corridor project runs along Vernon Avenue South/50<sup>th</sup> Street West from Johnson Drive at the western end to France Avenue along the eastern edge of Edina. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA



### 3.0 PROJECT IDENTIFICATION

#### EDINA



pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Edina “B” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)Median/Refuge islands
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along Vernon Avenue/50<sup>th</sup> Street that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance accessibility and the transit experience of alternative modes of transportation.

#### Edina C

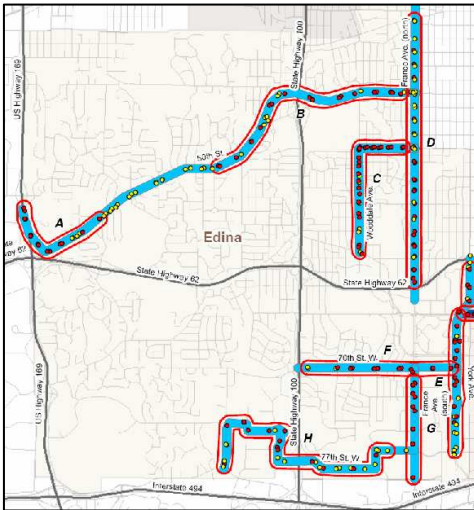
The identified corridor project runs along Wooddale Avenue South beginning at Valley View Road at the southern end and continuing northward and continuing eastward along 54<sup>th</sup> Street ending at France Avenue along the eastern edge of Edina. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Edina “C” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Bike Lanes
- D) Crosswalk (paint)

### 3.0 PROJECT IDENTIFICATION

#### EDINA



- E) Streetlights
- F) Benches
- G) Bike lockers
- H) Shelters
- I) Trash receptacles

There are many locations along Wooddale/54<sup>th</sup> Street that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving experience and safety with increased ADA access, benches, bike lockers, painted crosswalks, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

The addition of a designated bike lane along the corridor would also promote transportation alternatives and increase pedestrian safety.

#### Edina D

The identified corridor project runs north/south along France Avenue from 39<sup>th</sup> Street W. along the northern edge of Edina through the intersection with Highway 62 on the southern end. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

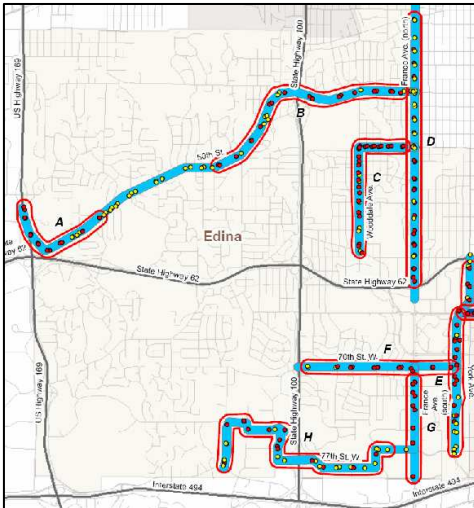
Tasks recommended for the Edina "D" project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along France Avenue that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

### 3.0 PROJECT IDENTIFICATION

#### EDINA



Improving the experience and safety with increased ADA access, benches, bike lockers, painted crosswalks, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

#### Edina E

The identified corridor project runs north/south along York Avenue S. from 66<sup>th</sup> Street on the northern end and 76<sup>th</sup> Street at the southern end. This was the result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Edina “E” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

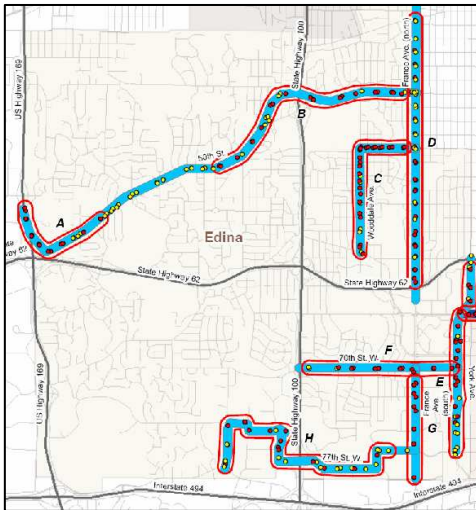
Traffic volumes are too high to recommend a road diet. A complete street concept would be needed to add bike lanes to this project area. The majority of the bike safety issues are at the intersection of 66<sup>th</sup> Street and York Ave, an intersection improvement project is recommended to make this intersection pedestrian and bike friendly.

There are many locations along York Avenue S. that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

### 3.0 PROJECT IDENTIFICATION

#### EDINA



#### Edina F

The identified corridor project runs north/south along Xerxes Avenue S. from W. 66<sup>th</sup> Street to Highway 62 along the northern edge. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Edina “F” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along Xerxes Avenue that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

#### Edina G

The identified corridor project runs north/south along France Avenue S. from 70<sup>th</sup> Street down to Minnesota Drive. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

### 3.0 PROJECT IDENTIFICATION

#### EDINA



Tasks recommended for the Edina “G” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along France Avenue S. that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

#### Edina H

The identified corridor project runs mainly east/west along an established bus route. Beginning at the intersection of 76<sup>th</sup> Street W. and France Avenue, the route runs westerly along 76<sup>th</sup> Street, turning south along Parklawn Avenue and continuing west along 77<sup>th</sup> Street until turning north at Metro Boulevard. The route turns west at 74<sup>th</sup> Street W. and again turning north at Bush Lake Road. The project area then turns west at Dewey Hill Road and curves to the south along Cahill Road. The project ends at the intersection of Cahill Road and W. 78<sup>th</sup> Street. This was a result of observing similar patterns in the various GIS mapping exercises along this Edina corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

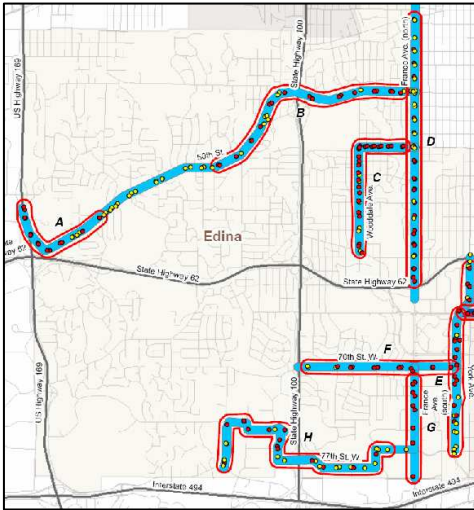
Tasks recommended for the Edina “H” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches



### 3.0 PROJECT IDENTIFICATION

#### EDINA



- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along the corridor that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

## 3.0 PROJECT IDENTIFICATION

### ST LOUIS PARK



### 3.3.3 St. Louis Park

#### St. Louis Park A

The identified corridor project runs the entire east/west length of Minnetonka Boulevard through St. Louis Park. This specific project was a result of observing similar patterns in the various GIS mapping exercises along this St. Louis Park corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Louis Park "A" project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Shelters
- G) Trash receptacles

There are many locations along Minnetonka Boulevard that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and trash receptacles will enhance use of alternative modes of transportation.

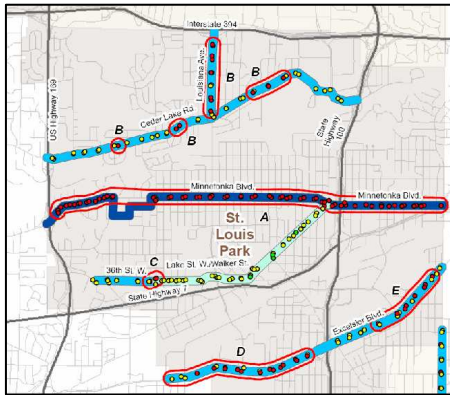
#### St. Louis Park B

The identified cluster project includes locations on both Cedar Lake Road and Louisiana Avenue S. Beginning along the western portion of Cedar Lake Road and moving eastward, the following intersections are included; Cedar Lake Road/Yukon Ave. S, Cedar Lake Road/Quebec Ave. S, Cedar Lake Road/Florida Ave. S, Cedar Lake Road/Franklin Ave. W and Cedar Lake Road/Blackstone Ave. S. The Louisiana intersections included in this cluster include; Louisiana/Cedar Lake Road, Louisiana/W 22<sup>nd</sup> St., Louisiana/W 18<sup>th</sup> St.



### 3.0 PROJECT IDENTIFICATION

#### ST LOUIS PARK



Louisiana/W 16<sup>th</sup> St., and Louisiana/W 14<sup>th</sup> St. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Louis Park corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Louis Park “B” project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Shelters
- G) Trash receptacles

There are many locations along Cedar Lake Road and Louisiana Avenue that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers, shelters and trash receptacles will enhance use of alternative modes of transportation.

#### St. Louis Park C

The identified isolated project is at the intersection of W. 36<sup>th</sup> Street and Texas Avenue in southwestern St. Louis Park. This project was a result of observing similar patterns in the various GIS mapping exercises along this St. Louis Park corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Louis Park “C” project include the following:

- A) ADA Pads
- B) Curb cuts

### 3.0 PROJECT IDENTIFICATION

#### ST LOUIS PARK



- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Trash receptacles

Pedestrian level lights near this bus stop would improve pedestrian safety.

Improving the experience and overall safety with increased ADA access, benches, bike lockers and trash receptacles will enhance use of alternative modes of transportation.

#### St. Louis Park D

The identified corridor project runs east/west along Excelsior Boulevard from Powell Drive on the western end and Highway 100 on the eastern end of the project. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Louis Park corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Louis Park "D" project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Streetlights
- E) Benches
- F) Bike lockers
- G) Trash receptacles

There are many locations along Excelsior Boulevard that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers and trash receptacles will enhance use of alternative modes of transportation.

### 3.0 PROJECT IDENTIFICATION

#### ST LOUIS PARK



#### St. Louis Park E

The identified corridor project runs southwest/northeast along Excelsior Boulevard from Grand and Excelsior on the western end and France Avenue on the eastern end of the project. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Louis Park corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Louis Park “E” project include the following:

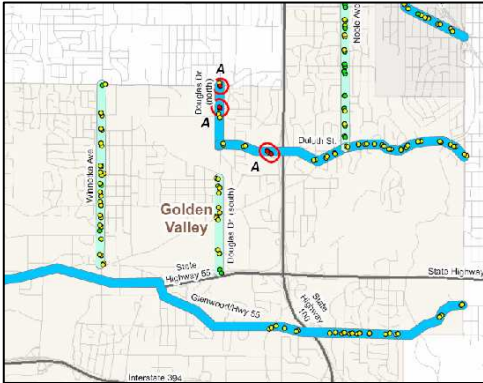
- A) ADA Pads
- B) Crosswalk (paint)
- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Trash receptacles

There are many locations along Excelsior Boulevard that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, painted crosswalks, benches, bike lockers and trash receptacles will enhance use of alternative modes of transportation.

## 3.0 PROJECT IDENTIFICATION

### GOLDEN VALLEY



### 3.3.4 Golden Valley

#### Golden Valley A

The identified corridor project runs east/west along Duluth Street from Highway 100 west to Douglas Drive North and then turns north/south between Douglas Drive North and 27<sup>th</sup> Avenue North. This was a result of observing similar patterns in the various GIS mapping exercises along this Golden Valley corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Golden Valley "A" project include the following:

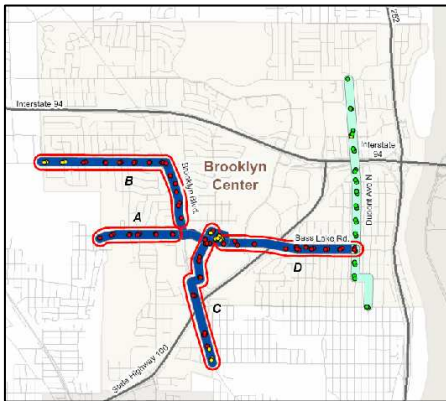
- A) ADA Pads
- B) Streetlights
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

There are many locations along Douglas Drive N. and Duluth Street that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with increased ADA access, benches, bike lockers, shelters and trash receptacles will enhance use of alternative modes of transportation.

## 3.0 PROJECT IDENTIFICATION

### BROOKLYN CENTER



### 3.3.5 Brooklyn Center

#### Brooklyn Center A

The identified corridor project runs east/west along 58<sup>th</sup> Avenue North from Major Avenue North on the western edge to Brooklyn Boulevard on the eastern end. This was a result of observing similar patterns in the various GIS mapping exercises along this Brooklyn Center corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Brooklyn Center “A” project include the following:

- A) ADA Pads
- B) Streetlights
- C) Bike lockers
- D) Shelters
- E) Trash receptacles

There are many locations along 58<sup>th</sup> Avenue North that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

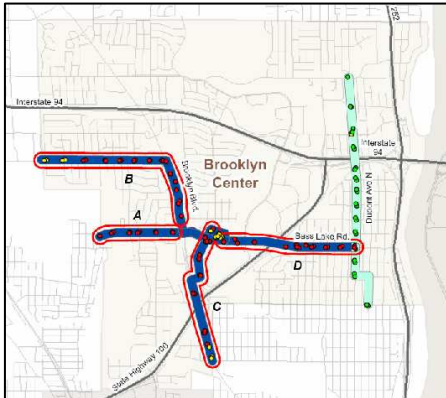
Improving the experience and safety with increased ADA access, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

#### Brooklyn Center B

The identified corridor project runs east/west along 63<sup>rd</sup> Avenue N. from Vera Cruz Lane on the western edge and turns north/south along Brooklyn Boulevard from 63<sup>rd</sup> Avenue N. at the northern end to Bass Lake Road at the southern end of the project. This was a result of observing similar patterns in the various GIS mapping exercises along this Brooklyn Center corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

### 3.0 PROJECT IDENTIFICATION

#### BROOKLYN CENTER



Tasks recommended for the Brooklyn Center “B” project include the following:

- A) ADA Pads
- B) Benches
- C) Bike lockers
- D) Shelters
- E) Trash receptacles

There are many locations along 63<sup>rd</sup> Avenue N that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

#### Brooklyn Center C

The identified corridor project runs north/south along Xerxes Avenue from Northway Boulevard at the northern end to 55<sup>th</sup> Avenue North where the project turns east/west along 55<sup>th</sup> Avenue North until intersecting and turning north/south along Brooklyn Boulevard ending at 49<sup>th</sup> Avenue North at the southern end of the project corridor. This was a result of observing similar patterns in the various GIS mapping exercises along this Brooklyn Center corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Brooklyn Center “C” project include the following:

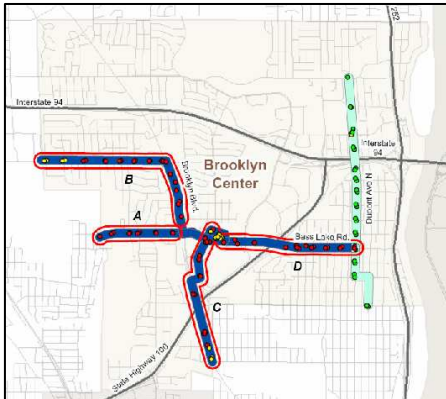
- A) ADA Pads
- B) Curb cuts
- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Shelters
- G) Trash receptacles

There are many locations along Xerxes and Brooklyn Boulevard that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.



### 3.0 PROJECT IDENTIFICATION

#### BROOKLYN CENTER



Improving the experience and safety with increased ADA access, benches, bike lockers, shelters and trash receptacles will enhance use of alternative modes of transportation.

#### Brooklyn Center D

The identified corridor project runs east/west along 57<sup>th</sup> Avenue N. from Xerxes Avenue N. along the western edge to Dupont Avenue N. and 57<sup>th</sup> Avenue N. functioning as the eastern edge of the corridor. This is a result of observing similar patterns in the various GIS mapping exercises along this Brooklyn Center corridor. The criteria used to evaluate this corridor includes; lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Brooklyn Center “D” project include the following:

- A) ADA Pads
- B) Streetlights
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

There are many locations along 57<sup>th</sup> Avenue that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

There are a few locations along 57<sup>th</sup> Avenue that have deficient ADA pads near bus stops. Upgrading the pads and other site facilities, such as adding benches, bike lockers, shelters and trash receptacles near the bus stops would improve pedestrian safety and accessibility and the transit experience.

## 3.0 PROJECT IDENTIFICATION

### FRIDLEY



### 3.3.6 Fridley

#### Fridley A

The identified cluster project runs north/south along the intersection of Central Avenue NE and Highway 65 and Medtronic Parkway. This was a result of observing similar patterns in the various GIS mapping exercises along this Fridley corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Fridley “A” project include the following:

- A) ADA Pads
- B) Benches
- C) Bike lockers
- D) Shelters
- E) Trash receptacles

There are a few locations along Central Avenue/Highway 65 that have deficient ADA pads near bus stops. Upgrading the pads and other site facilities, such as adding benches, bike lockers, shelters and trash receptacles near the bus stops would improve safety and accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### FRIDLEY



#### Fridley B

The identified cluster project is located along University Avenue NE at the intersection of Satellite Lane NE and University Avenue NE and the intersection of Rice Creek Terrace NE and University Avenue NE. This was a result of observing similar patterns in the various GIS mapping exercises along this Fridley corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Fridley "B" project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Streetlights
- D) Benches
- E) Bike lockers
- F) Trash receptacles

There are many locations along University Avenue NE that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

There are a couple locations along University Avenue NE that have deficient ADA pads near bus stops. Upgrading the pads and other site facilities near the bus stops would improve safety and accessibility and the transit experience.

## 3.0 PROJECT IDENTIFICATION

### COLUMBIA HEIGHTS



### 3.3.7 Columbia Heights

#### Columbia Heights A

The identified corridor project runs north/south along Central Avenue NE from 37<sup>th</sup> Avenue NE (County Road D) in the south to 53<sup>rd</sup> Avenue NE to the north. This was a result of observing similar patterns in the various GIS mapping exercises along this Columbia Heights corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Columbia Heights "A" project include the following:

- A) ADA Pads
- B) Streetlights
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

There are many locations along Central Avenue NE that have deficient lighting near bus stops. Pedestrian level lights near the bus stops would improve pedestrian safety.

Improving the experience and safety with better ADA access, benches, bike lockers, shelters and other site facilities such as trash receptacles will enhance use of alternative modes of transportation.

### 3.0 PROJECT IDENTIFICATION

#### COLUMBIA HEIGHTS



#### Columbia Heights B

The identified corridor project runs north/south along University Avenue NE from 44th Avenue NE in the south to 52<sup>nd</sup> Avenue NE to the north. This was a result of observing similar patterns in the various GIS mapping exercises along this Columbia Heights corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Columbia Heights “B” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

There are many locations along University Avenue NE that have deficient site facilities near bus stops. Pedestrian level improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles facilitate accessibility and the transit experience.

### 3.0 PROJECT IDENTIFICATION

#### ST ANTHONY



#### 3.3.8 St. Anthony

##### St. Anthony A

The isolated project is located along 37<sup>th</sup> Avenue NE (County Road D) between Penrod Lane and Chelmsford Road NE. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Anthony corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Anthony "A" project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Bench
- D) Shelter
- E) Trash receptacle

There are many locations along 37<sup>th</sup> Avenue NE that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.



## 3.0 PROJECT IDENTIFICATION

### ROSEVILLE



### 3.3.9 Roseville

#### Roseville A

The identified corridor project runs north/south along Snelling Avenue N from Roselawn Avenue W in the south to County Road B W to the north. This was a result of observing similar patterns in the various GIS mapping exercises along this Roseville corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Roseville “A” project include the following:

- A) Median/Refuge islands
- B) Benches
- C) Bike locker
- D) Shelter
- E) Trash receptacles

There are many locations along Snelling Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

An addition of a median island would also improve pedestrian safety and promote alternative modes of transportation.

## 3.0 PROJECT IDENTIFICATION

### FALCON HEIGHTS



### 3.3.10 Falcon Heights

#### Falcon Heights A

The identified corridor project runs north/south along Snelling Avenue N from Midway Parkway in the south to Larpentur Avenue W to the north. This is a result of observing similar patterns in the various GIS mapping exercises along this Falcon Heights corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the Falcon Heights “A” project include the following:

- A) ADA Pads
- B) Benches
- C) Bike locker
- D) Shelter
- E) Trash receptacles

There are many locations along Snelling Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

## 3.0 PROJECT IDENTIFICATION

### ST PAUL



### 3.3.11 St. Paul

#### St. Paul A

The identified corridor project runs mainly east/west along Como Avenue from Hunting Valley Road in the northwest to Stella Street in the southeast. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul "A" project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Benches
- D) Bike locker
- E) Shelter
- F) Trash receptacles

There are many locations along Como Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

#### St. Paul B

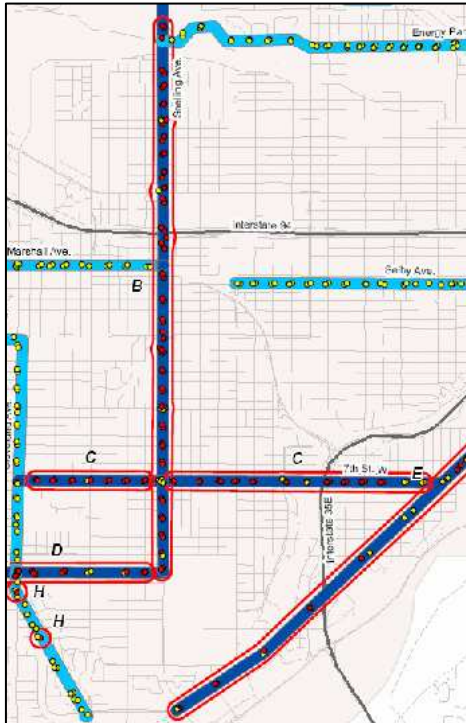
The identified corridor project runs mainly east/west along Snelling Avenue N from Energy Park Drive in the north to Ford Parkway in the south. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul "B" project include the following:

- A) ADA Pads

### 3.0 PROJECT IDENTIFICATION

#### ST PAUL



- B) Crosswalk (paint)
- C) Hawk Signal
- D) Median treatment
- E) Median/Refuge island
- F) Signal countdown timer
- G) Benches
- H) Bike lockers
- I) Shelters
- J) Trash receptacles

There are many locations along Snelling Avenue that have deficient site facilities near bus stops. Improvements, such as ADA access, painted or raised crosswalks, benches, bike lockers, shelters, and trash receptacles would facilitate accessibility and the transit experience.

The addition of a Hawk Signal and a median island would also be an asset for pedestrian safety and mobility.

#### St. Paul C

The identified corridor project runs east/west along Randolph Avenue from Snelling Avenue S in the east to Cleveland Avenue S in the west. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul "C" project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

There are many locations along Randolph Avenue that have deficient site facilities near bus stops. Improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve use.

### 3.0 PROJECT IDENTIFICATION

#### ST PAUL



#### St. Paul D

The identified corridor project runs mainly east/west along Ford Parkway from Snelling Avenue S in the east to Woodlawn Avenue in the west. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul “D” project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Benches
- D) Bike lockers
- E) Shelters
- F) Trash receptacles

There are many locations along Ford Parkway that have deficient site facilities near bus stops. Improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve accessibility and the transit experience.

#### St. Paul E

The identified corridor project runs southwest to northeast along 7<sup>th</sup> Street West from St. Paul Avenue in the southwest to Kellogg Boulevard in the northeast. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul “E” project include the following:

- A) ADA Pads



### 3.0 PROJECT IDENTIFICATION

#### ST PAUL



- B) Crosswalk (paint)
- C) Benches
- D) Bike lockers
- E) Trash receptacles

There are many locations along 7<sup>th</sup> Street West that have deficient site facilities near bus stops. Improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve accessibility and the transit experience.

#### St. Paul F

The identified corridor project runs north/south along Arcade Street from Larpenteur Avenue in the north to 7<sup>th</sup> Street East in the south. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul “F” project include the following:

- A) ADA Pads
- B) Bike lanes
- C) Crosswalk (paint)
- D) Restripe “Road Diet” add bike lane
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

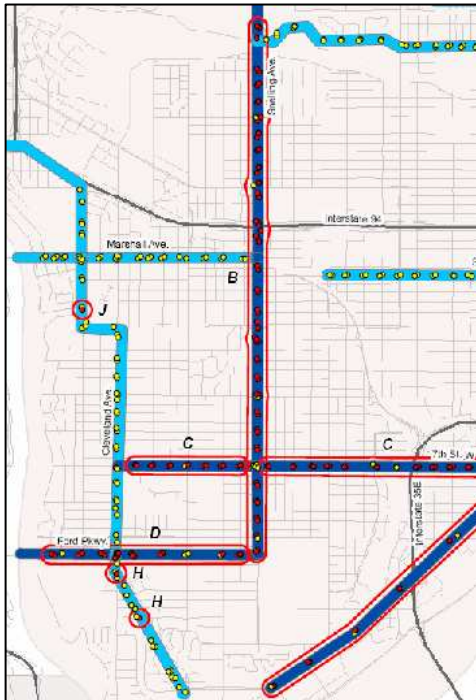
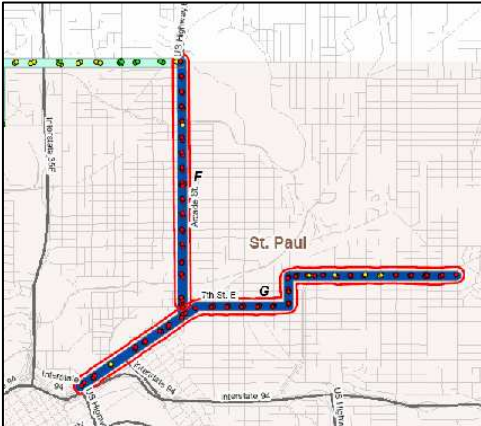
There are many locations along Arcade Street that have deficient site facilities near bus stops. Pedestrian level improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve pedestrian safety.

The identified project is a candidate for a road diet; this reduction in vehicle lanes and addition of dedicated bike lanes would reduce automobile accidents, provide room for bikers, and provide a buffer between pedestrians and traffic.



### 3.0 PROJECT IDENTIFICATION

#### ST PAUL



#### St. Paul G

The identified corridor project runs mainly east/west along 7<sup>th</sup> Street East from Lafayette Road N to Minnehaha Avenue E. The corridor then follows Minnehaha Avenue E from 7<sup>th</sup> Street E to Atlantic Street N where it turns north/south along Atlantic Street N to 7<sup>th</sup> Street E. The corridor then follows 7<sup>th</sup> Street E to Hazel Street N. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul "G" project include the following:

- A) ADA Pads
- B) Crosswalk (paint)
- C) Median/Refuge islands
- D) Restripe "Road Diet" add bike lane
- E) Benches
- F) Bike lockers
- G) Shelters
- H) Trash receptacles

There are many locations along 7<sup>th</sup> Street East and Atlantic Street North that have deficient site facilities near bus stops. Improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve accessibility and the transit experience.

The identified project is a candidate for a road diet; this reduction in vehicle lanes and addition of dedicated bike lanes would reduce automobile accidents, provide room for bikers, and provide a buffer between pedestrians and traffic.

#### St. Paul H

The identified cluster project is located on St. Paul Avenue at the intersection of St. Paul Avenue/Bohland Avenue and St. Paul Avenue/Yorkshire Avenue. This was a result of observing similar patterns in the various GIS mapping

### 3.0 PROJECT IDENTIFICATION

#### ST PAUL



exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul “H” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Benches
- E) Bike locker
- F) Shelters
- G) Trash receptacles

There are many locations along St. Paul Avenue that have deficient site facilities near bus stops. Improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve accessibility and the transit experience.

#### St. Paul I

The identified cluster project is located on Horton Avenue between Midway Parkway and N Lexington Parkway and at the intersections of Van Slyke Avenue and Argyle Street and the intersection of Van Slyke Avenue and W Como Boulevard. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul “I” project include the following:

- A) ADA Pads
- B) Curb cuts
- C) Crosswalk (paint)
- D) Benches
- E) Bike locker

### 3.0 PROJECT IDENTIFICATION

#### ST PAUL



- F) Shelter
- G) Trash receptacles

There are many locations along Horton and Van Slyke Avenue that have deficient site facilities near bus stops. Pedestrian level improvements, such as, ADA access, painted crosswalks, benches, bike lockers, shelters, and trash receptacles would improve accessibility and the transit experience.

#### St. Paul J

The identified isolated project is at the intersection of Cremin Avenue N and Exeter Place. This was a result of observing similar patterns in the various GIS mapping exercises along this St. Paul corridor. The criteria used to evaluate this corridor included: lighting, crosswalk access, bike lockers, bike lane access, bike crashes, pedestrian crashes, benches, ADA access, ADA pads, right-of-way buffers, shelters, sidewalk access and Level of Service rankings. As a result of the analysis, the corridor was identified as a high priority project.

Tasks recommended for the St. Paul "J" project include the following:

- A) ADA Pad
- B) Bench
- C) Bike locker
- D) Trash receptacle

This is an isolated location along Cremin Avenue N. Enhancing the pedestrian experience and safety with improved ADA access and other site facilities such as a bench, a bike locker and a trash receptacle will promote use of alternative modes of transportation.

## 4.0 PROJECT COST

An opinion of probable costs is included in Appendix C.

## 5.0 REFERENCES

American Association of State Highway and Transportation Officials (AASHTO), *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, July 2004

Institute of Transportation Engineers (ITE), *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities*, 2006

Institute of Transportation Engineers (ITE) and the Federal Highway Administration (FHWA), *Traffic Calming: State of the Practice*, August 1999

Minnesota Department of Transportation, *Bicycle & Pedestrian Toolbox, Tools to Develop an Active Transportation Network*, April 2008

Minnesota Department of Transportation, *Bikeway Facility Design Manual*, March 2007

Minnesota Department of Transportation, *The Mn/DOT Bicycle Modal Plan*, January 2005

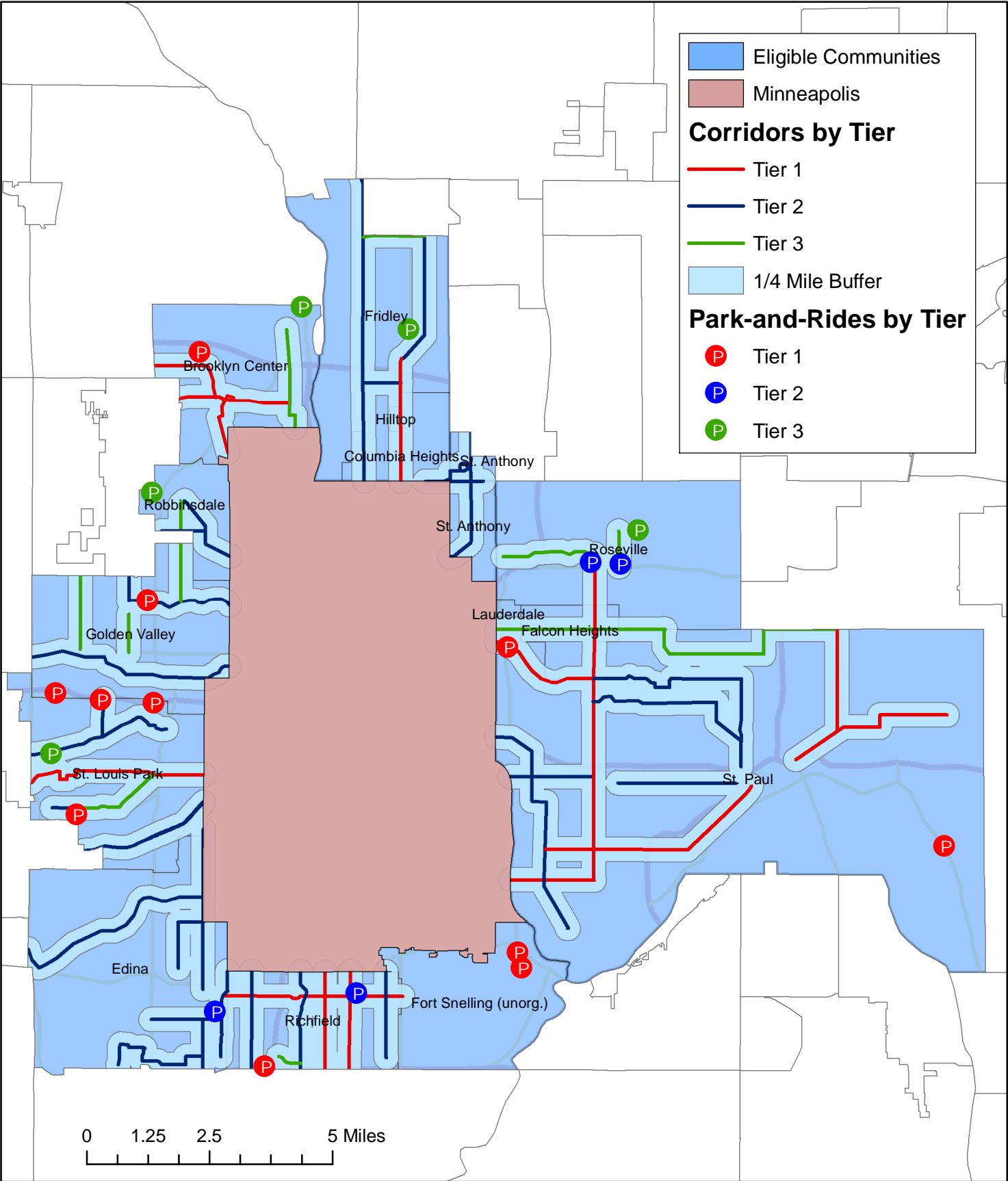
Transit for Livable Communities, *Appendix E "Glossary of Best Practices"*, Steve Clark, St. Paul, MN 2008

## FIGURES



# Project Area

## Selected Corridors and Park-and-Rides by Tier



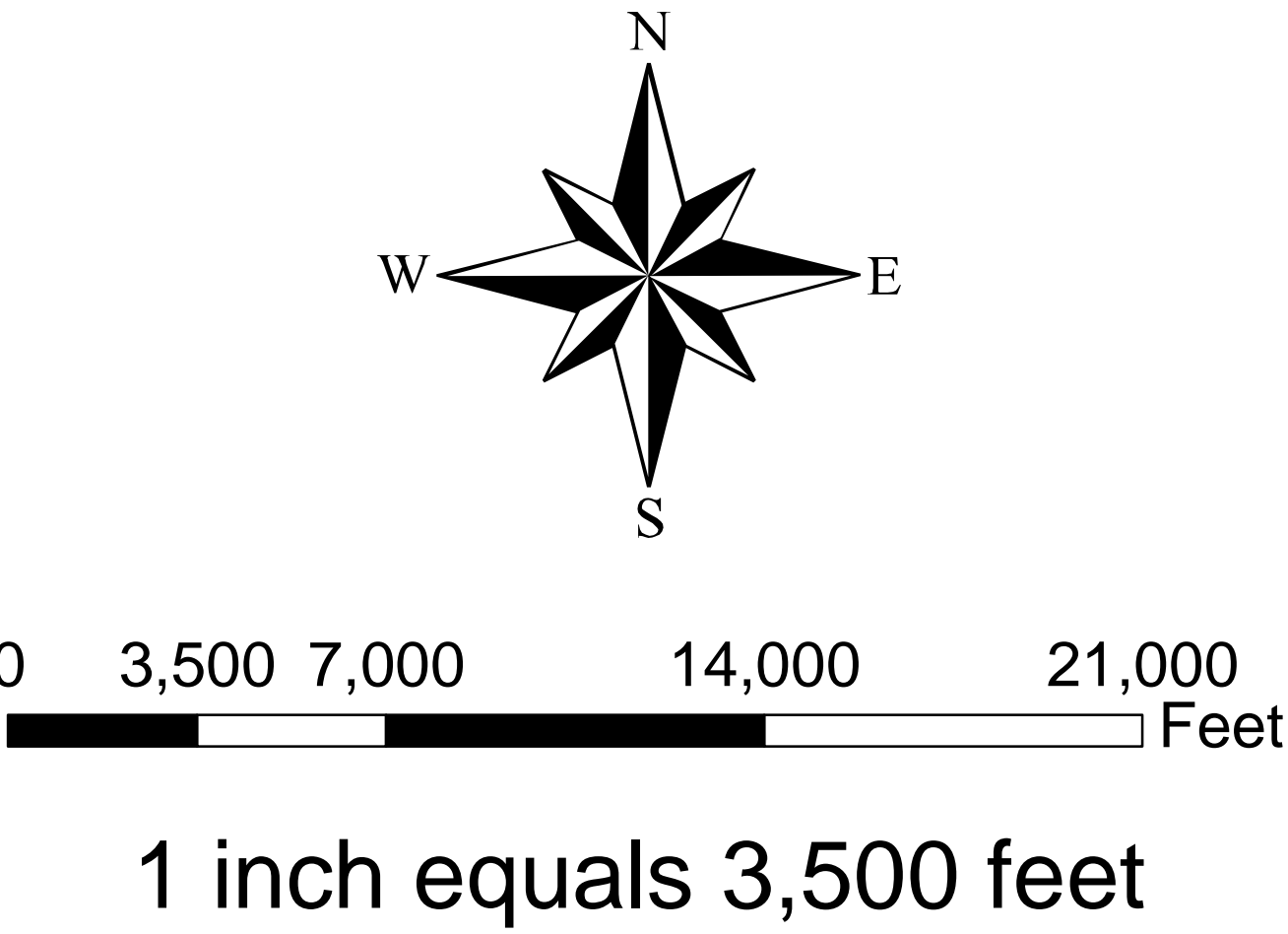
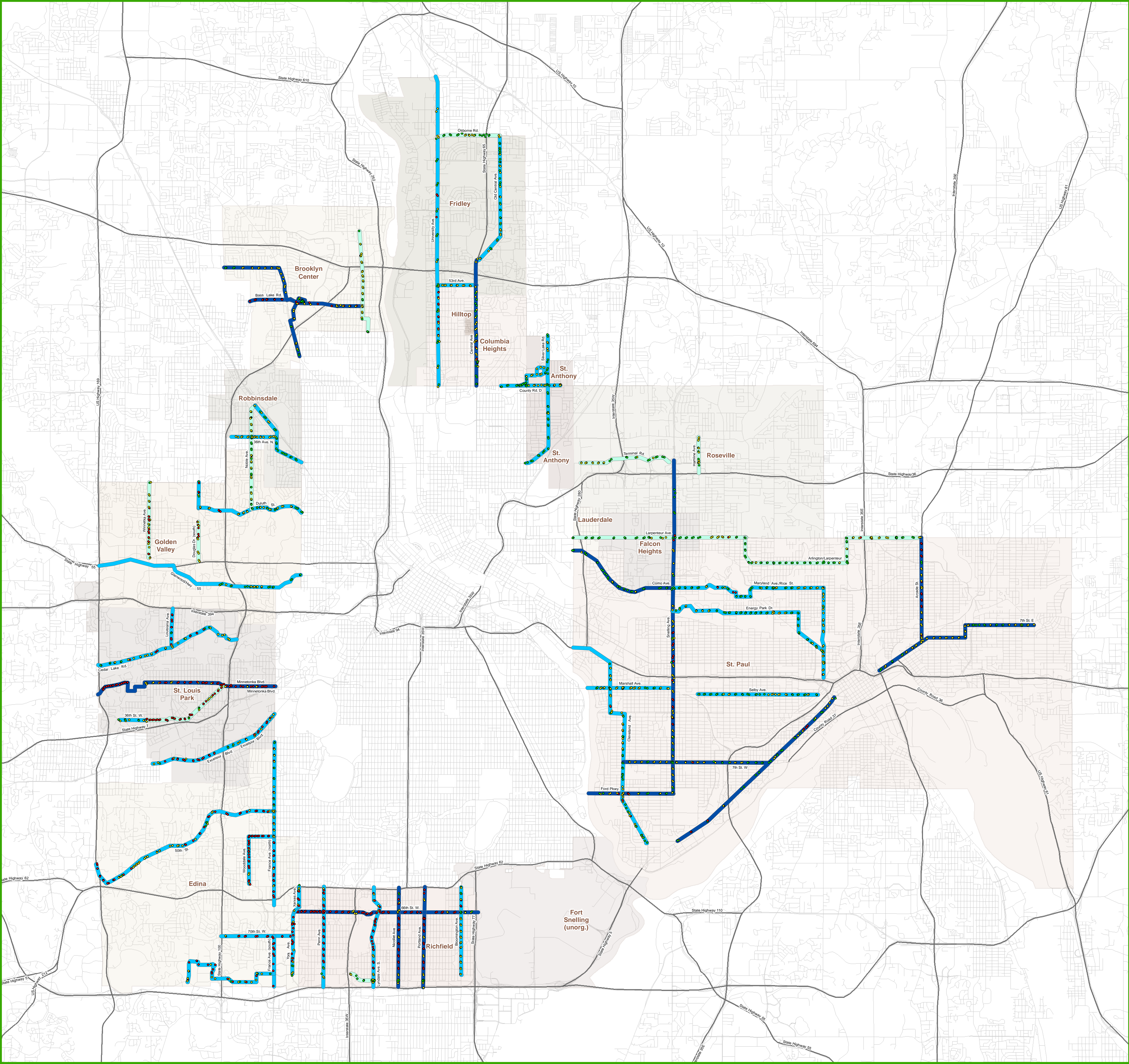


# Figure 2 Bus Stop Prioritization Unweighted Total Scores

Presented to: Metropolitan Council

- Legend**
- Bus Stops by Unweighted Total Score**
- < -0.5 Std. Dev. (3 - 11)
  - 0.5 - 0.5 Std. Dev. (12 - 15)
  - > 0.5 Std. Dev. (16 - 26)

- Selected Corridors**
- Tier 1
  - Tier 2
  - Tier 3
  - Highways
  - Minor Roads



Data Source: Metropolitan Council  
Projected Coordinate System: North America Datum 1983  
Universal Transverse Mercator Zone 15 North  
Projection: Universal Transverse Mercator  
Map Published: 10/22/2008  
Authors: Pete Lovell and Anne Packard





# Figure 3 Bus Stop Buffer Map

Metropolitan Council

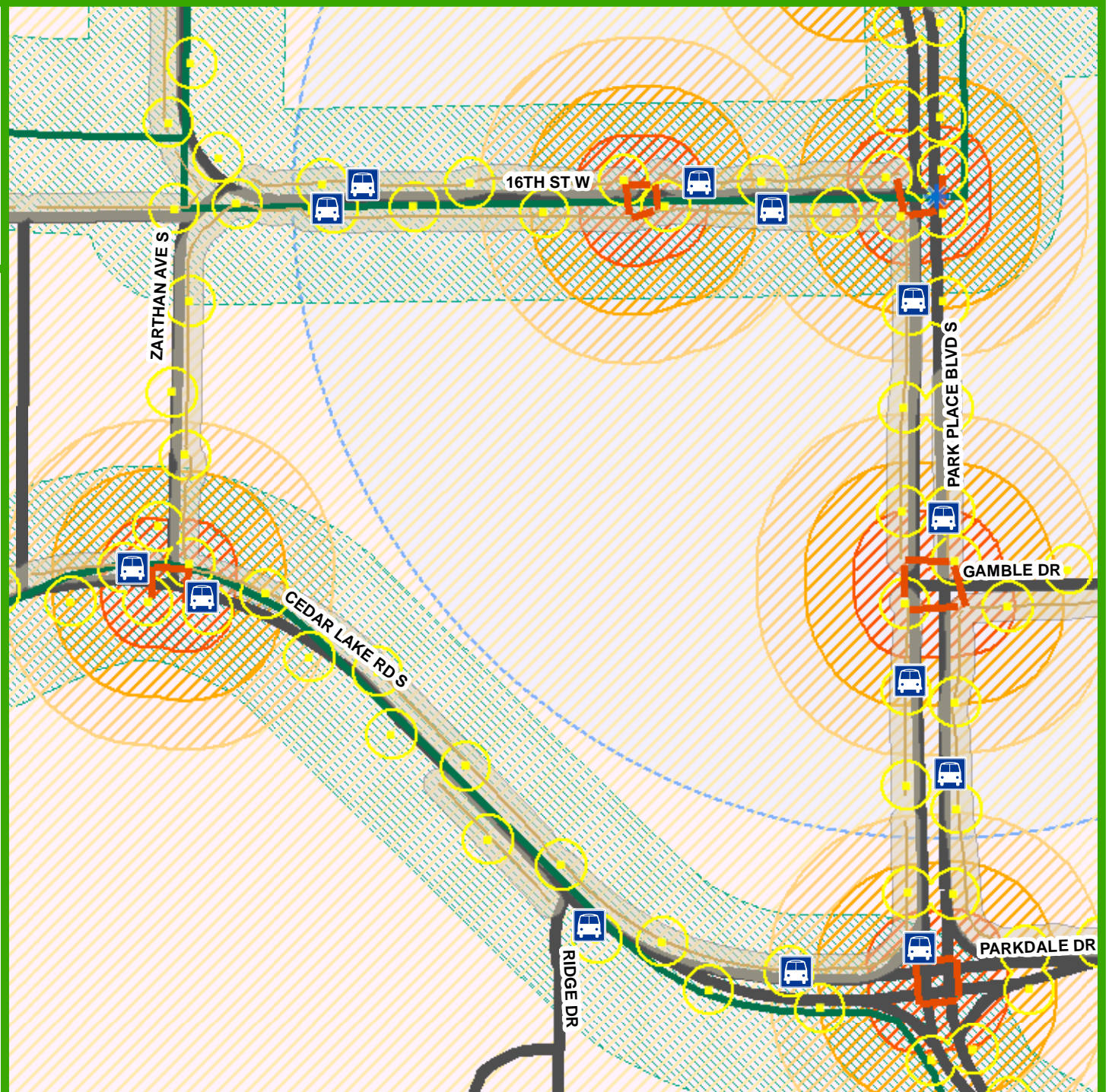
## Map Legend

-  Bus Stops
-  Pedestrian Crashes
-  Bicycle Crashes
-  Streetlights
-  Crosswalks
-  Sidewalks
-  Bikeways
-  Roads
-  Streetlights: 50ft Buffer
-  Sidewalks: 30ft Buffer
-  Crosswalks: 0-100ft Ring
-  Crosswalks: 100-200ft Ring
-  Crosswalks: 200-300ft Ring
-  Crosswalks: Beyond 300ft
-  Bikeways: 200ft Buffer
-  Pedestrian Crash Data: 1/4mi Buffer
-  Bicycle Crash Data: 3/4mi Buffer



0 100 200 300  
Feet  
1 inch equals 300 feet

Data Source: Metropolitan Council  
Projected Coordinate System: North America Datum 1983  
Universal Transverse Mercator Zone 15 North  
Projection: Universal Transverse Mercator  
Map Published: 10/22/2008  
Authors: Pete Lovell and Anne Packard





# Figure 4 Bus Stop Prioritization

## Weighted Total Scores

Presented to: Metropolitan Council

### Legend

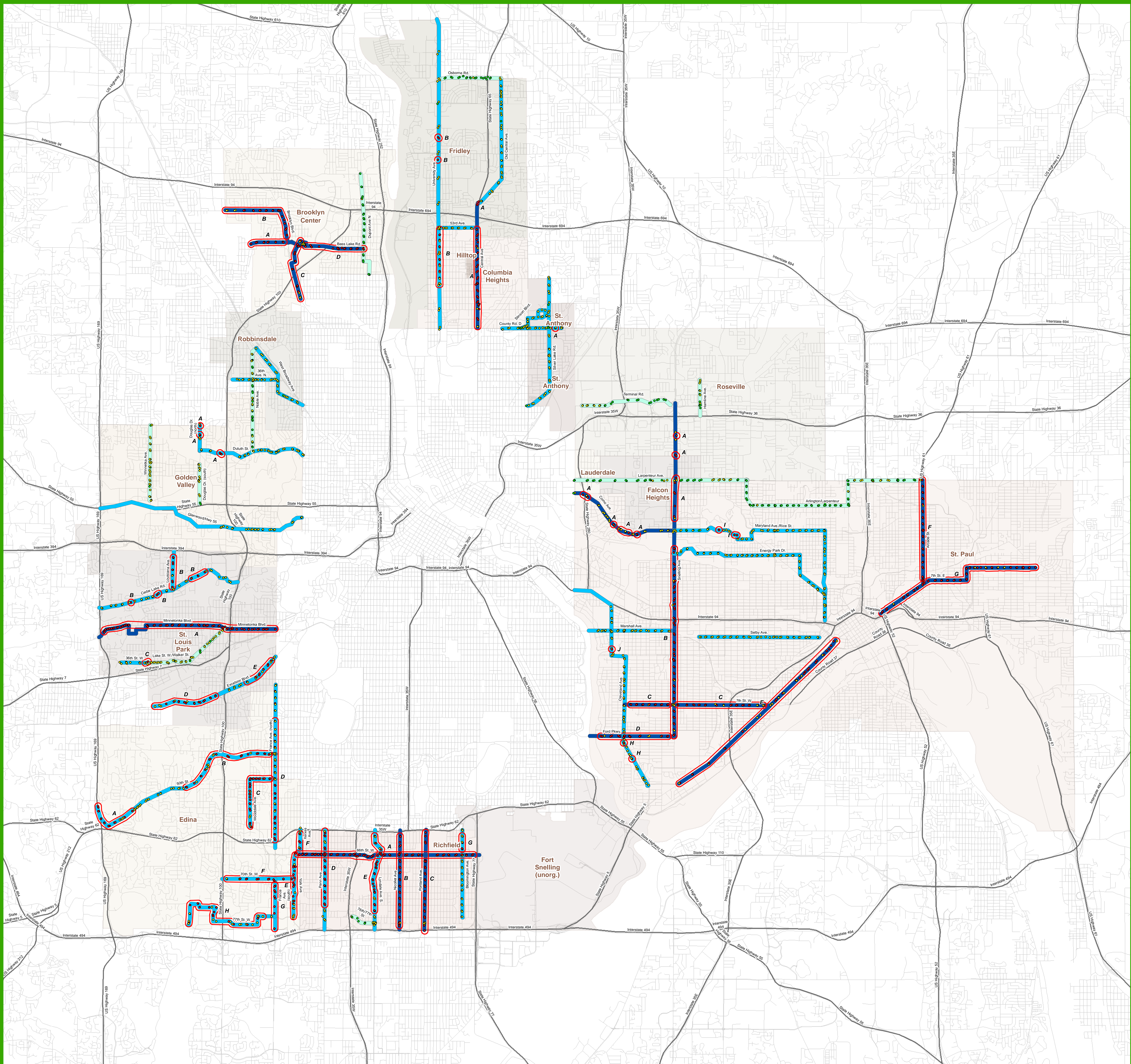
#### Bus Stops by Weighted Total Score†

- < -0.5 Std. Dev. (6 - 12)
- 0.5 - 0.5 Std. Dev. (13 - 30)
- > 0.5 Std. Dev. (31 - 78)

#### Selected Corridors

- Tier 1
- Tier 2
- Tier 3
- Highways
- Minor Roads

† Only bus stops from Tier 1, Tier 2, and Tier 3 corridors shown. Outlying bus stops did not receive a weighting factor and, therefore, a weighted total score.



Data Source: Metropolitan Council  
Projected Coordinate System: North America Datum 1983  
Universal Transverse Mercator Zone 15 North  
Projection: Universal Transverse Mercator  
Map Published: 11/25/2008  
Authors: Pete Lovell, Anne Packard, and Bethany Wilcoxon



# Figure 5 Bus Stop Prioritization

## Pedestrian Scores

Presented to: Metropolitan Council

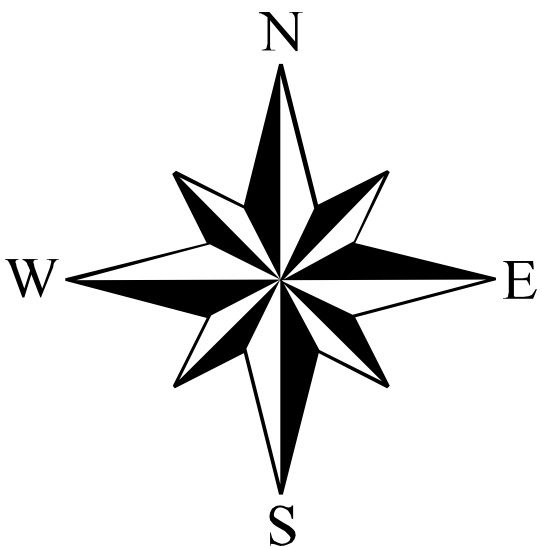
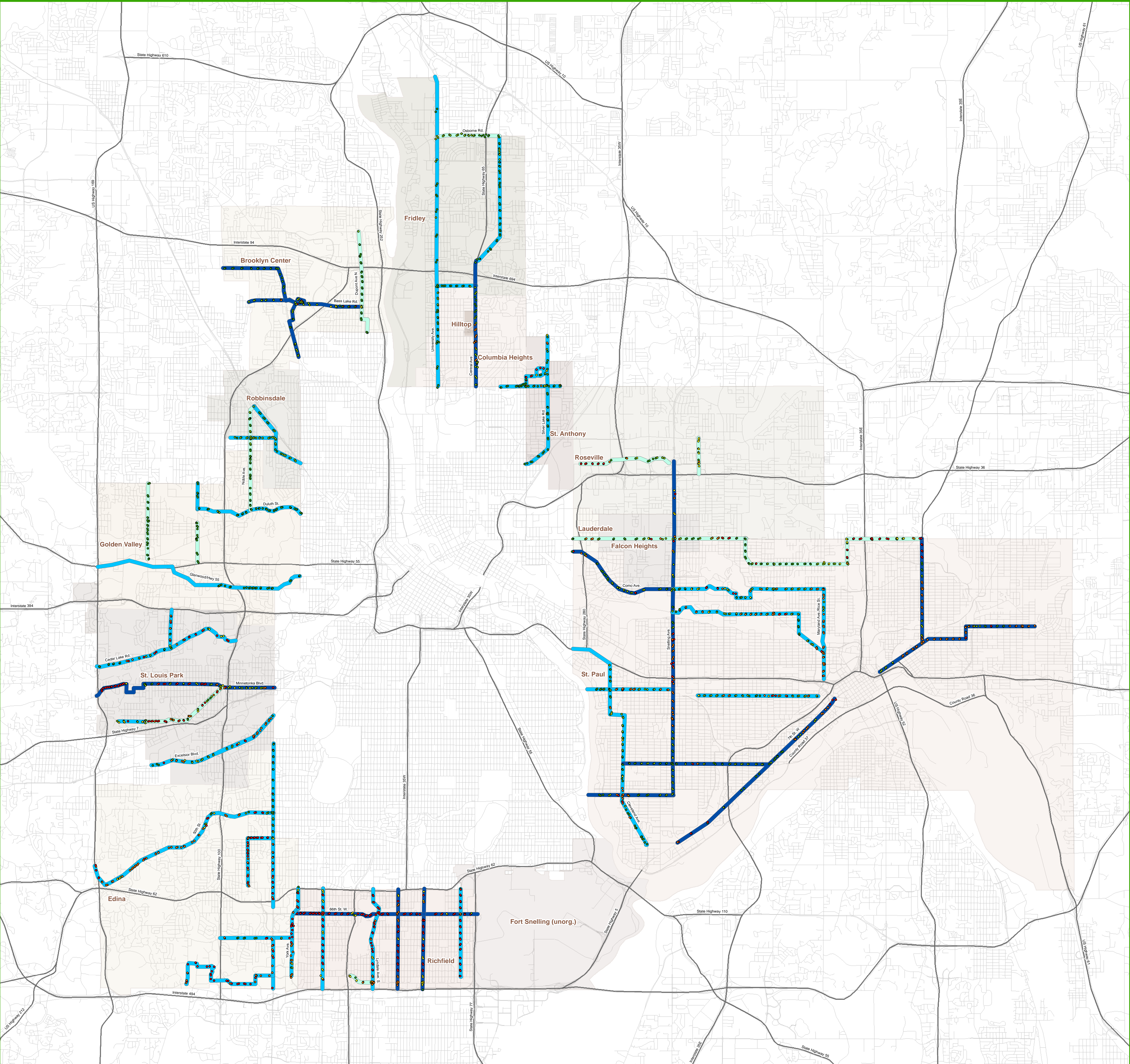
### Legend

#### Bus Stops by Pedestrian Score

- 0
- 1
- 2
- 3
- 4 - 8

#### Selected Corridors

- Tier 1
- Tier 2
- Tier 3
- Highways
- Minor Roads



0 3,500 7,000 14,000 21,000 Feet

1 inch equals 3,500 feet

Data Source: Metropolitan Council  
Projected Coordinate System: North America Datum 1983  
Universal Transverse Mercator Zone 15 North  
Projection: Universal Transverse Mercator  
Map Published: 10/22/2008  
Authors: Pete Lovell and Anne Packard





# Figure 6 Bus Stop Prioritization Safety Scores

Presented to: Metropolitan Council

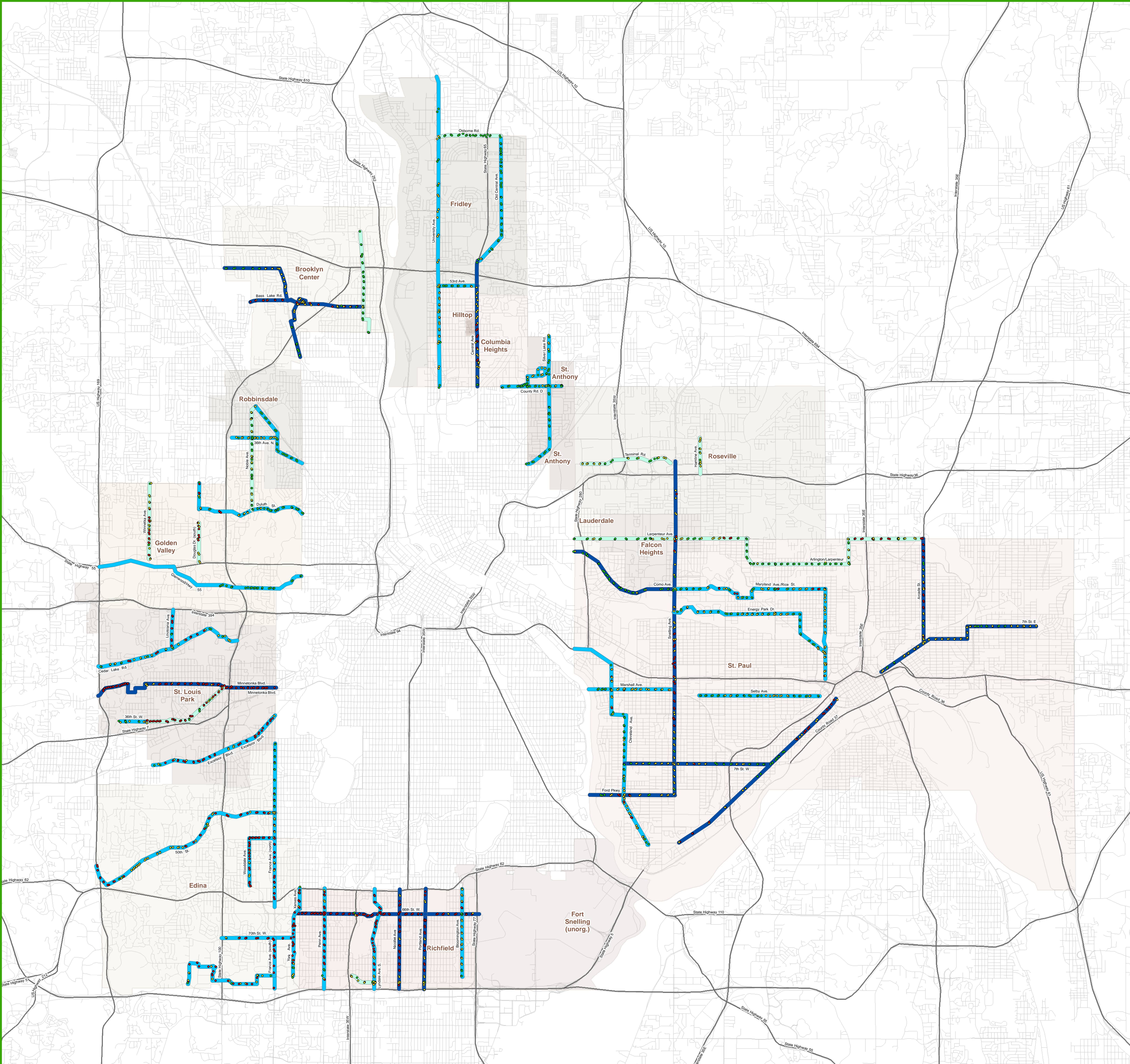
## Legend

### Bus Stops by Safety Score

- < -0.5 Std. Dev. (0 - 5)
- 0.5 - 0.5 Std. Dev. (6 - 8)
- > 0.5 Std. Dev. (9 - 18)

### Selected Corridors

- Tier 1
- Tier 2
- Tier 3
- Highways
- Minor Roads



Data Source: Metropolitan Council  
Projected Coordinate System: North America Datum 1983  
Universal Transverse Mercator Zone 15 North  
Projection: Universal Transverse Mercator  
Map Published: 10/22/2008  
Authors: Pete Lovell and Anne Packard

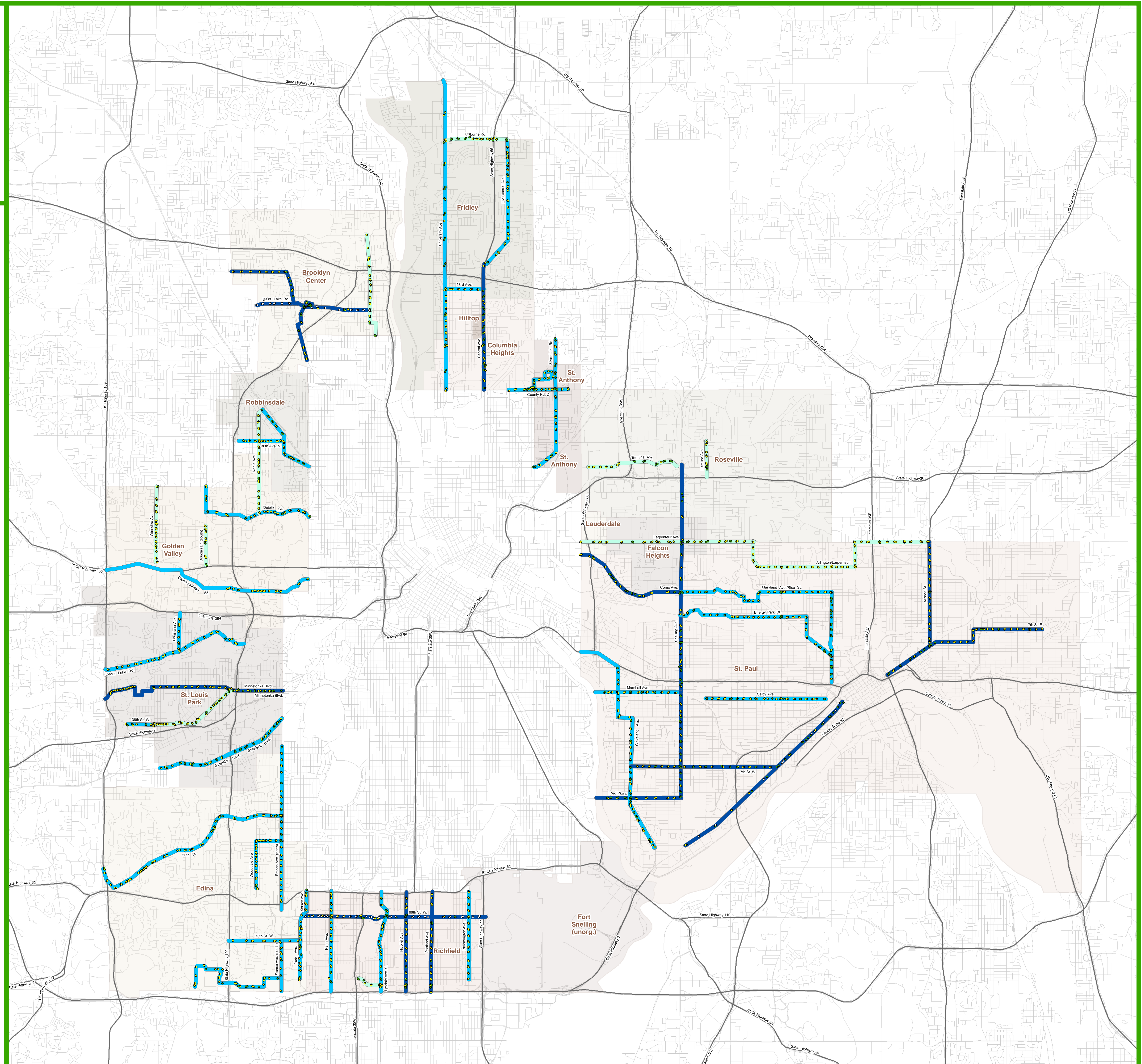


**Presented to: Metropolitan Council**

### Bus Stops by Facilities Score

- ## Selected Corridors

- Tier 1**



Howard R. Green Company



**APPENDIX A**

**SUMMARY OF QUESTIONNAIRE RESULTS**

**Bicycle/Pedestrian Survey Summary  
2/17/2009**

Contact	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
	<i>Do you have any information or mapping that would be useful in identifying impediments to pedestrian &amp;/or bicycle access to bus stops or transit use in your community? Do you have any trail/ sidewalk access maps? If so, who is the contact for this information &amp; how would we obtain it?</i>	<i>What types of amenities do bus stops in your community have (bike racks, bike lockers, shade trees, roadway-walkway buffer, bus benches, lighting, Wi-Fi, etc.)? Are there stops where additional amenities could improve use?</i>	<i>What types of access features are available to bus stops in your community (trail connections, bicycle trails [on &amp; off-road], crosswalks, sidewalks, bike lanes, roadways with 5-ft or greater shoulders, low traffic volume streets; appropriate signage)? Are there known barriers to access (snow piles, lack of crosswalks, crosswalks in wrong location, poor sidewalk or trail access, etc.)?</i>	<i>Have you received complaints, comments, safety concerns, or other information regarding pedestrian &amp;/or bicycle use or access to bus stops? Is there someone in your community that is especially knowledgeable in this area that we should talk with about this project?</i>	<i>Have you conducted any studies that would be helpful in assessing pedestrian &amp; bicycle access to bus stops or transit use? Are there any rider surveys available? Do you have any pedestrian &amp;/or bicycle "traffic" count/usage or crash data? Have your trails master plans or transportation master plans determined the need to change current bus stop locations or see the potential for level of demand on particular transit ways to change? If so, how could we obtain this information?</i>	<i>Has your community identified unfunded projects related to bus stop amenity improvements or improved access to bus stops or transit? If so, what are they &amp; what are the estimated costs? Are you aware of existing flow patterns that need to be upgraded to improve use (such as adding mid-block crosswalks, etc.)? If so what are they?</i>	<i>Would you like to provide any other pertinent information?</i>
Christina Morrison City of St. Paul Planning & Economic Development	<p>► Sidewalk &amp; curb lines available in CAD (Public Works)</p> <p>► Bikeways in GIS □ Currently updating, but can provide 2007 files</p> <p>► Interested in using data on traffic speeds &amp; pedestrian/vehicle crash data (Public Works-Paul St. Martin at 651-266-6118 for more information on what is available)</p>	<p>► Amenities vary-bus benches &amp; standard shelters to heated shelters &amp; the indoor waiting area in downtown St. Paul.</p> <p>► Few stops have bike racks, although bike racks are sometimes available in nearby areas to serve local businesses.</p> <p>► Public art is also rare, although there are a couple instances on University Avenue.</p> <p>► Major corridors &amp; certain transfer points should have bike racks or lockers (as space allows) &amp; upgraded shelters, lighting, &amp; street furniture.</p> <p>► In future LRT transit stations/bus stops may include larger waiting areas with covered bike facilities or a bike depot, as well as public art &amp; above-standard shelters.</p>	<p>► Infrastructure for access is generally good in the urban core, but there is some concern about inadequate crossing times, narrow sidewalks, sidewalk disrepair, &amp; fast moving traffic on some roads.</p> <p>► Seasonal barriers are present due to limited ROW for snow storage &amp; the difficulty of reclearing intersections, bus stops, &amp; bike lanes after plowing. With snow, the largest barrier may be the lack of responsibility of any agency or property owner to clear bus stops in order for riders to safely board the bus. Many passengers get off of the bus &amp; walk in traffic to the nearest corner, or the bus driver will pull up to the next cross street to let them board.</p> <p>► Special attention should be given to accommodating persons with disabilities in all seasons.</p>	<p>► We hear a lot about bicyclist commuters having to wait for two or three buses to find an open spot on the bus bike rack, &amp; there is confusion &amp; inconsistency about Metropolitan Transit's policies to let a third bike into the bus.</p> <p>► There is a growing need for low-floor buses in some corridors. (Is there any data on wheelchair boardings or frequent use of the lift that could be used to demonstrate need?)</p> <p>► These items are anecdotal, &amp; vary between corridors.</p>	<p>► We haven't done pedestrian counts, but Smart Trips may have some info from Midway TMO about past bike counts in the Midway area.</p> <p>► Crash data is available from Mary Jackson (trunk highways) &amp; Paul St. Martin (for local streets).</p> <p>► There was detailed station area planning done for the Riverview Corridor (contact Allen Lovejoy at 266-6226) &amp; the Central Corridor (www.stpaul.gov/centralcorridor).</p> <p>► The Central Corridor Development Strategy also recommends changing some downtown bus stops relating to the 4th &amp; Cedar station block.</p>	<p>► I am not familiar with any projects, but it would be nice to incorporate walkway/shelters into future project developments through a partnership with Metropolitan Transit.</p>	None provided.

**Bicycle/Pedestrian Survey Summary**  
**2/17/2009**

Contact	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
John Sigveland Metropolitan Transit	►Note: John provided data Metropolitan Transit collected re: bicycles on buses and trains (prepared for TLC).						
Karen Clysdale Mn/DOT - Metro District	►Summit University Planning Council Irna Landrum Executive Dir. 627 Selby Ave Saint Paul Mn 55104 651-228-1855	►It depends on the location. Not all bus stops have amenities, but not all locations need them. ►Recommend focusing on high volume bus lines, such as the 16 or 21, & making those stops passenger friendly & branching out from there.	►All of those connections exist in my community - unaware of any specific problems to date.	►No complaints to date. Contact the local planning council.	►Perhaps by contacting the transit office of MnDOT? Mike Schadauer, Director <a href="http://www.dot.state.mn.us/transit/">http://www.dot.state.mn.us/transit/</a> .	►Unaware of any problems at this time.	None provided.
Liz Walton Mn/DOT	Deferred to Mary Jackson						
Mary Jackson Bicycle & Pedestrian Section	►Yes. We have two different studies of bike/pedestrian crashes on Mn/DOT roads in the metro area. Some of our minor arterials are used as bus routes. We have other maps showing various bike/pedestrian facilities & mapping options available. ► Contact me & I can direct you further.	► All listed are on bus routes that are using Mn/DOT roads, except perhaps, the Wi-Fi. ►Bike parking expansion is always good ►Pedestrian access to bus stops & hubs is critical.	►Barriers include lack of snow & ice removal, staging construction materials on sidewalks, debris, standing water (drainage issues), blocked travel zones by street furniture, newspaper boxes, etc.	►Yes, contact me.	►We have reviewed bike/pedestrian crashes on Mn/DOT roads. ►I have received bike rack on bus data from Metropolitan Transit. ►Please contact me for more information & I will also put you in touch with others at Mn/DOT that have more familiarity with other data, transit planning.	►It is generally understood that there are many more needs than funding available, but I think there are other ways to tackle these issues. ►Upgrades in certain locations are needed.	►We are very interested in upgrading pedestrian facilities so that they are accessible, i.e., that they meet or exceed ADA standards. That is & should be a focus in the years ahead.
Karen Nikolai Hennepin County	►I do not, but others at Hennepin County do. ►Start with Bob Byers in the transportation Dept. 612-596- 0354 ►Robb Luckow has done & continues to do some survey work on our county trails. He also does GIS mapping for some projects. 612-348-9344.	►Amenities would improve use everywhere. Most bus stops in the metro area are just simple overhangs, & many are not even ADA compliant. ►One in particular in Hopkins is oriented so a person in a wheelchair has to sit behind it (can't access it since the entrance & sides block entry by being only 1.5 - 2 feet from the street). ►All the amenities you mention would be extremely helpful.	►I do not have that kind of specific information. The city planning depts. in our county have this. I would contact them directly. ►There are many barriers that I see every time I bike, walk or drive somewhere, especially in the winter.	►The cities are the ones that have this specific information. ►Bob Byers also may have information on specific complaints of problems that occur on our county roads.	►Robb Luckow 612-348-9344 would have this, but it's mostly related to our trail use. ►We do hope to do some pedestrian counts yet this year, and are determining locations at this time.	►I wish I had this information, but don't. ►Bob Byers or others in the Transportation Dept may have this, but their focus is more on vehicles & throughput. They do manage the bicycle plan & gaps in bike trail connections, so he may know.	►I'd love to have any information you find, especially your report. Thank you!

**Bicycle/Pedestrian Survey Summary**  
**2/17/2009**

Contact	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
Curt Peterson Ramsey County	► Ramsey County has developed a Pedestrian Bike Systems GIS layer. This data specifically attempts to map proposed, planned, & existing non-motorized transportation routes primarily intended for walking & bicycle commuting. Yes, we have trail & sidewalk mapping. ► This database was sent to Jeremiah Menk with the Howard R. Green Company.	► I suggest contacting the Metropolitan Council Transit Operations (MCTO).	► I believe this varies greatly by location. Our Pedestrian Bike Systems GIS database attempts to map various types of bike & pedestrian facilities. This information does include fields that include the non-motorized facility type, width & surface. ► Local communities may have more information concerning impedances, barriers & condition ratings.	► I suggest contacting the Metropolitan Council Transit Operations (MCTO). ► Local communities may also have this type of information.	► The Ramsey County Pedestrian Bike Systems data was submitted to the Howard Green Company. This information should prove useful for this analysis. I am not aware of any pedestrian/bike use or count data. ► I believe that pedestrian/bike accident, crash & fatality data is available at the MNDOT Office of Traffic Safety. I have requested this data & will forward it to you.	► I am attempting to gather this information from Ramsey County local Communities. I will pass this information to you when I receive it.	► Multimodal transportation systems certainly require a great amount of planning, choice & flexibility from everyone involved -including employers. If I personally choose to utilize bus or rail transportation to commuter to work, I would prefer walkable distances from my connection points. If I ride a bicycle I prefer to ride the entire distance. Not that I would not consider cycling to a Park and Ride or Transit Center. But leaving a rather expensive bike at an outdoor bike rack certainly bears risk for damage or theft. Obviously, cycling to work requires more work & time commitment. ► Access to safe bicycle storage areas & personal cleaning facilities are certainly necessary.
Erin Laberee Ramsey County	► The County has a map showing trails & sidewalk locations within the County. ► Contact Mike Winfield at mike.winfield@co.ramsey.mn.us	► The County does not track this information.	► The County does not track this information.	► I have no record of such complaints.	► The County does not have any such information.	► I am not aware of any projects at the County level that have been identified for bus stop improvements.	► None provided.

**Bicycle/Pedestrian Survey Summary**  
**2/17/2009**

Contact	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
Sean Walther City of St. Louis Park	<p>►Yes, City has mapping useful to pedestrian/bike access to bus stops or transit.</p> <p>►Yes, City has sidewalk &amp; trail maps available in GIS format.</p> <p>►I am the contact for this information.</p> <p>►City has GIS maps of sidewalks &amp; trails, crosswalks, bus shelters, signals, stop controlled intersections, pedestrian/bicycle accident history, railroad locations, bridges (rail, road or pedestrian).</p> <p>►City also has aerial orthophotography from April 2006, in addition to Hennepin County aerial orthophotography. In addition, City has access to oblique aerial photos from Hennepin County.</p>	<p>►We have some of the amenities available at some of the stops, but not all.</p> <p>►We have a list of potential improvements at various stops throughout town. Our review of the stops was not as thorough as to include an inventory of all the items in the list. It may be valuable to expand the review of the stops to include additional factors.</p>	<p>►Again, it is not uniform, but some stops have good access, others do not. Our previous review of the stops may have included all the items you mention. Additional review of existing conditions would be valuable to the City.</p>	<p>►Yes. There may be several staff that are knowledgeable in this area, but I should be your point of contact to gather information or coordinate meetings to discuss these issues.</p>	<p>►We are also in the final stages of updating our sidewalks &amp; trails plan. It includes potential/proposed sidewalks, trails, transit stop, &amp; intersection improvements.</p> <p>►I am not aware of any transit rider surveys.</p> <p>►Our transit plan does not propose or forecast a change to bus stop locations. However, we are aware of a particular development project (The West End) &amp; long-term planning that could have some impacts to transit routes &amp; bus stop location in St. Louis Park (I-394 MnPASS Phase II Study).</p>	<p>►Yes, we have identified stop amenity &amp; access projects. The cost estimates are not yet available. We have not reviewed flow patterns to/from bus stops in depth.</p>	<p>►None at this time. I look forward to working cooperatively with you on this project.</p>
Tom Foley City of Richfield	<p>►We have a sidewalk map, a bicycle location gap map, transit maps for both local &amp; express bus service.</p> <p>►We hope to add off-street trails to our sidewalk map in the future.</p> <p>►Contact me at 612-861-9791</p>	<p>►We probably have 12 bus stops with bus shelters.</p> <p>►I believe we have one bus stop of the 12 that also offers a bike rack. We have proposed a bike locker at another bus stop with a bus shelter.</p> <p>►The new roundabout at 66th &amp; Portland will have three bus shelters, a bus bench &amp; landscaping. This will definitely encourage increased bus ridership that is estimated at 100 riders per day.</p> <p>►We have 50 bus benches throughout the city.</p>	<p>►Bus landing pads are missing at several bus stops- I don't have the exact number missing pads.</p> <p>►There are no sidewalks serving a number of bus stops, including some with bus shelters.</p> <p>►The worst problem is sidewalks located right behind the curb. They pose a safety threat to pedestrians. The curbs are sinking &amp; do not prevent cars from jumping the curb.</p>	<p>►The lack of bike racks, bus shelters &amp; inadequate right of way width for bus riders to wait for the bus are the main complaints.</p> <p>►The safety of crosswalks is also a concern. Mostly, that motorists don't stop for pedestrians in the crosswalk. We have started a program to add raised median islands on busy streets to provide a pedestrian refuge on busy streets (4-lane, undivided roads).</p>	<p>►We have about 12 turning movement counts that may include pedestrian &amp; bike crossing counts. The data goes back to 2000.</p> <p>►We have drafted a new Comprehensive Plan that includes a sidewalk plan with several new sidewalks proposed.</p> <p>►Metropolitan Transit's Sector 5 Plan is being implemented. It has led to a boost in ridership as new routes are added, others modified &amp; express service provided to downtown Minneapolis.</p>	<p>►We are studying a park-n-ride lot near 66<sup>th</sup> &amp; Penn as part of a redevelopment plan. We just received two federal grants that will improve access to bus stops for bikes &amp; walkers.</p>	<p>►It would be advisable to talk about all the things Richfield is doing to promote bus service, biking &amp; walking.</p>



**Bicycle/Pedestrian Survey Summary**  
**2/17/2009**

Contact	Question 1	Question 2	Question 3	Question 4	Question 5	Question 6	Question 7
Karen Barton City of Richfield	► Contact Tom Foley in our Engineering Dept. at 612-861-9791 or tfoley@cityofrichfield.org	► We don't have bike lockers, but I do believe we have some bike racks. We have a number of benches & bus shelters. Most could use improvements and the inclusion of amenities.	► Primarily just crosswalks. ► No barriers with the possible exception of snow removal in the winter.	► No complaints that I am aware of. I would recommend you talk to Tom Foley (612-861-9791) & Christine Costello (612-861-9758) or ccostello@cityofrichfield.org	► I believe there have been studies & that we have a transportation plan that includes trails & bike paths. Contact Tom Foley.	► Yes, specifically at the NE corner of Lyndale & 66 <sup>th</sup> . Please contact Christine Costello.	► We are fortunate to have excellent bus service in the City of Richfield. Most of our bus stops/shelters could benefit from upgrades & amenities. Unfortunately, it has been challenging to get approval from Metropolitan Transit to vary from their standard designs. That, & of course, funding.
Deb Bloom City of Roseville	We have a trail sidewalk map, bus stop map, and a bus bench/ bus shelter map. Contact Jolinda Stapleton, 651-792-7044, or jolinda.stapleton@ci.roseville.mn.us	► Some have bus benches, some have shelters.	► All of the above. See pathway map.	► Yes we have. I would be the contact.	► No.	► No.	► None provided.
Heather Butkowski City of Lauderdale	We are a small city, about a half mile square. I can provide you with a city map. Additionally, I have other maps generated for our Comprehensive Plan update that might be of use to you. Sidewalks are limited to Larpenteur Avenue & portions of the city park.	► The bus stops on Larpenteur do not have much in terms of amenities. ► The stops at Larpenteur/Pleasant Street have paved concrete pads. ► The stops at Larpenteur/Eustis Street have benches. ► On the City's border with St. Paul (Como Avenue) runs Bus 3, which connects the University of Minnesota campuses. That stop has shelters & a bike rack.	► We receive complaints about the quick signals & aggressive traffic at Eustis & Larpenteur, but it is a fully signaled/striped intersection. ► Snow plows also push snow on the sidewalks, which makes catching the bus more difficult. ► The biggest physical (and mental) impediment to the bus stop/park-&-ride on Como & Eustis is Eustis Hill. □ It is steep with narrow shoulders. In winter, the hill is especially perceived as a barrier. Many residents drive to the park-&-ride even though it is relatively close. A year ago we restricted parking along most of Eustis Street to allow for better pedestrian access to the bus stop at Como & Eustis.	► The City receives complaints about the Eustis/Larpenteur intersection. We occasionally receive requests from residents for shelters at the bus stops on Larpenteur. ► In total, most complaints are about the condition of Eustis Street. The City authorized the city engineers to conduct a feasibility study on Eustis Street this year (replace road surface, utilities, & add bike/pedestrian amenities). The City would especially like to hear of any suggestions you may have.	► No studies or counts have been done. As noted above, the City is working on a feasibility study as Eustis Street's road surface & underground utilities need to be replaced. ► Largely, we rely on Metropolitan Transit to assess and provide for transit needs.	► As noted above, we rely on Metropolitan Transit to assess & provide for transit needs & do not have cost estimates for improvements. ► We look forward to your report to help us plan & make improvements!	► Please contact me with any other information needs.

## **APPENDIX B**

### **BUS STOP PRIORITIZATION RANKING REPORT**

**APPENDIX C**  
**COST INFORMATION**

City	Tier	Project Number	Project Cost	Total City Cost
Richfield	1	A	\$1,440,720	
Richfield	1	B	\$699,120	
Richfield	1	C	\$321,120	
Richfield	2	D	\$349,440	
Richfield	2	E	\$727,920	
Richfield	2	F	\$75,360	
Richfield	2	G	\$66,000	
		<b>Richfield Total</b>		<b>\$3,679,680</b>
Edina	2	A	\$246,660	
Edina	2	B	\$287,760	
Edina	2	C	\$558,720	
Edina	2	D	\$457,200	
Edina	2	E	\$363,810	
Edina	2	F	\$220,320	
Edina	2	G	\$216,600	
Edina	2	H	\$558,600	
		<b>Edina Total</b>		<b>\$2,909,670</b>
St Louis Park	1	A	\$858,060	
St Louis Park	2	B	\$280,500	
St Louis Park	2	C	\$30,480	
St Louis Park	2	D	\$223,740	
St Louis Park	2	E	\$41,760	
		<b>St Louis Park Total</b>		<b>\$1,434,540</b>
Golden Valley	2	A	\$147,600	
		<b>Golden Valley Total</b>		<b>\$147,600</b>
Brooklyn Center	1	A	\$146,640	
Brooklyn Center	1	B	\$243,600	
Brooklyn Center	1	C	\$194,640	
Brooklyn Center	1	D	\$256,080	
		<b>Brooklyn Center Total</b>		<b>\$840,960</b>
Fridley	1	A	\$73,680	
Fridley	2	B	\$42,480	
		<b>Fridley Total</b>		<b>\$42,480</b>
Columbia Heights	1	A	\$386,160	
Columbia Heights	2	B	\$248,880	
		<b>Columbia Heights Total</b>		<b>\$635,040</b>
St Anthony	2	A	\$36,240	
		<b>St Anthony Total</b>		<b>\$36,240</b>
Roseville	1	A	\$73,320	
		<b>Roseville Total</b>		<b>\$73,320</b>
Falcon Heights	1	A	\$133,080	
		<b>Falcon Heights Total</b>		<b>\$133,080</b>
St Paul	1	A	\$102,240	
St Paul	1	B	\$962,400	
St Paul	1	C	\$279,840	
St Paul	1	D	\$148,080	
St Paul	1	E	\$158,280	
St Paul	1	F	\$511,560	
St Paul	1	G	\$502,320	
St Paul	2	H	\$78,720	
St Paul	2	I	\$54,540	
St Paul	2	J	\$11,040	
		<b>St Paul Total</b>		<b>\$2,809,020</b>
		<b>Total Cost</b>		<b>\$12,741,630</b>

<b>Richfield A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	66	\$66,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$66,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	14	\$5,600	
Crosswalk raised	Each	5000	2	\$10,000	
Hawk Signal	Each	45000	1	\$45,000	
Median Treatment	LF	175	3200	\$560,000	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000	15	\$120,000	
Street Lights (roadway lighting)	Each	5000	22	\$110,000	
<b>Safety Subtotal</b>					\$850,600
Bench	Each	2000	48	\$96,000	
Bike Storage (lockers/racks)	Each	5000	10	\$50,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	55	\$66,000	
<b>Facilities Subtotal</b>					\$284,000
				<b>20% Contingency</b>	\$240,120
				<b>Project Total</b>	\$1,440,720

<b>Richfield B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	24	\$24,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$24,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	6	\$2,400	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175	1800	\$315,000	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6	6500	\$39,000	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000	6	\$48,000	
Street Lights (roadway lighting)	Each	5000		\$0	
<b>Safety Subtotal</b>					\$404,400
Bench	Each	2000	25	\$50,000	
Bike Storage (lockers/racks)	Each	5000	5	\$25,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	26	\$31,200	
<b>Facilities Subtotal</b>					\$154,200
				<b>20% Contingency</b>	\$116,520
				<b>Project Total</b>	\$699,120

<b>Richfield C</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	26	\$26,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$26,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	6	\$2,400	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6	6500	\$39,000	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000	5	\$40,000	
Street Lights (roadway lighting)	Each	5000	1	\$5,000	
<b>Safety Subtotal</b>					\$86,400
Bench	Each	2000	28	\$56,000	
Bike Storage (lockers/racks)	Each	5000	4	\$20,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	26	\$31,200	
<b>Facilities Subtotal</b>					\$155,200
				<b>20% Contingency</b>	\$53,520
				<b>Project Total</b>	\$321,120

<b>Richfield D</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	27	\$27,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$27,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	6	\$2,400	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6	6500	\$39,000	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000	5	\$40,000	
Street Lights (roadway lighting)	Each	5000	1	\$5,000	
<b>Safety Subtotal</b>					\$86,400
Bench	Each	2000	26	\$52,000	
Bike Storage (lockers/racks)	Each	5000	5	\$25,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	24	\$28,800	
<b>Facilities Subtotal</b>					\$177,800
				<b>20% Contingency</b>	\$58,240
				<b>Project Total</b>	\$349,440



<b>Richfield E</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	28	\$28,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$28,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	6	\$2,400	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175	2000	\$350,000	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6	6500	\$39,000	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000	7	\$56,000	
Street Lights (roadway lighting)	Each	5000	1	\$5,000	
<b>Safety Subtotal</b>					\$452,400
Bench	Each	2000	23	\$46,000	
Bike Storage (lockers/racks)	Each	5000	5	\$25,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	26	\$31,200	
<b>Facilities Subtotal</b>					\$126,200
				<b>20% Contingency</b>	\$121,320
				<b>Project Total</b>	\$727,920

<b>Richfield F</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	8	\$8,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$8,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	4	\$1,600	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights (roadway lighting)	Each	5000	1	\$5,000	
<b>Safety Subtotal</b>					\$6,600
Bench	Each	2000	6	\$12,000	
Bike Storage (lockers/racks)	Each	5000	1	\$5,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	6	\$7,200	
<b>Facilities Subtotal</b>					\$48,200
				<b>20% Contingency</b>	\$12,560
				<b>Project Total</b>	\$75,360

<b>Richfield G</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	6	\$6,000	
Curb Cut	Each	2000		\$0	
<b>Legal Access Subtotal</b>					\$6,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint (Thermoplastic)	Each	400	2	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights (roadway lighting)	Each	5000		\$0	
<b>Safety Subtotal</b>					\$800
Bench	Each	2000	6	\$12,000	
Bike Storage (lockers/racks)	Each	5000	1	\$5,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	6	\$7,200	
<b>Facilities Subtotal</b>					\$48,200
<b>20% Contingency</b>					\$11,000
<b>Project Total</b>					\$66,000

<b>Edina A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	14	\$14,000	
Curb Cut	LF	2000	7	\$14,000	
<b>Legal Access Subtotal</b>					\$28,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	6	\$1,200	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	450	\$6,750	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	14	\$70,000	
<b>Safety Subtotal</b>					\$77,950
Bench	Each	2000	13	\$26,000	
Bike shelters	Each	5000	2	\$10,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	13	\$15,600	
<b>Facilities Subtotal</b>					\$99,600
				<b>20% Contingency</b>	\$41,110
				<b>Project Total</b>	\$246,660

<b>Edina B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	18	\$18,000	
Curb Cut	LF	2000	1	\$2,000	
<b>Legal Access Subtotal</b>					\$20,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	4	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000	3	\$9,000	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	1600	\$24,000	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	15	\$75,000	
<b>Safety Subtotal</b>					\$108,800
Bench	Each	2000	15	\$30,000	
Bike shelters	Each	5000	3	\$15,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	15	\$18,000	
<b>Facilities Subtotal</b>					\$111,000
				<b>20% Contingency</b>	\$47,960
				<b>Project Total</b>	\$287,760

<b>Edina C</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	32	\$32,000	
Curb Cut	LF	2000	3	\$6,000	
<b>Legal Access Subtotal</b>					\$38,000
Bike Lanes	LF	18	6000	\$108,000	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	8	\$1,600	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	1000	\$15,000	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	21	\$105,000	
<b>Safety Subtotal</b>					\$229,600
Bench	Each	2000	30	\$60,000	
Bike shelters	Each	5000	6	\$30,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	30	\$36,000	
<b>Facilities Subtotal</b>					\$198,000
				<b>20% Contingency</b>	\$93,120
				<b>Project Total</b>	\$558,720

<b>Edina D</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	32	\$32,000	
Curb Cut	LF	2000	3	\$6,000	
<b>Legal Access Subtotal</b>					\$38,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	5	\$1,000	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	1000	\$15,000	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	21	\$105,000	
<b>Safety Subtotal</b>					\$121,000
Bench	Each	2000	30	\$60,000	
Bike shelters	Each	5000	6	\$30,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	30	\$36,000	
<b>Facilities Subtotal</b>					\$222,000
				<b>20% Contingency</b>	\$76,200
				<b>Project Total</b>	\$457,200

<b>Edina E</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	25	\$25,000	
Curb Cut	LF	2000	6	\$12,000	
<b>Legal Access Subtotal</b>					\$37,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	4	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	225	\$3,375	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	25	\$125,000	
<b>Safety Subtotal</b>					\$129,175
Bench	Each	2000	20	\$40,000	
Bike shelters	Each	5000	5	\$25,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	20	\$24,000	
<b>Facilities Subtotal</b>					\$137,000
				<b>20% Contingency</b>	\$60,635
				<b>Project Total</b>	\$363,810

<b>Edina F</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	15	\$15,000	
Curb Cut	LF	2000	1	\$2,000	
<b>Legal Access Subtotal</b>					\$17,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	3	\$600	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	12	\$60,000	
<b>Safety Subtotal</b>					\$60,600
Bench	Each	2000	15	\$30,000	
Bike shelters	Each	5000	2	\$10,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	15	\$18,000	
<b>Facilities Subtotal</b>					\$106,000
				<b>20% Contingency</b>	\$36,720
				<b>Project Total</b>	\$220,320

<b>Edina G</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	8	\$8,000	
Curb Cut	LF	2000	3	\$6,000	
<b>Legal Access Subtotal</b>					\$14,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	4	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	4500	\$67,500	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	9	\$45,000	
<b>Safety Subtotal</b>					\$113,300
Bench	Each	2000	6	\$12,000	
Bike shelters	Each	5000	2	\$10,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	6	\$7,200	
<b>Facilities Subtotal</b>					\$53,200
				<b>20% Contingency</b>	\$36,100
				<b>Project Total</b>	\$216,600

<b>Edina H</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	33	\$33,000	
Curb Cut	LF	2000	3	\$6,000	
<b>Legal Access Subtotal</b>					\$39,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	12	\$2,400	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Treatment	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	7380	\$110,700	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	25	\$125,000	
<b>Safety Subtotal</b>					\$238,100
Bench	Each	2000	27	\$54,000	
Bike shelters	Each	5000	6	\$30,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	27	\$32,400	
<b>Facilities Subtotal</b>					\$188,400
				<b>20% Contingency</b>	\$93,100
				<b>Project Total</b>	\$558,600



<b>St Louis Park A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	57	\$57,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$57,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	6	\$1,200	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	750	\$11,250	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	64	\$320,000	
<b>Safety Subtotal</b>					\$332,450
Bench	Each	2000	53	\$106,000	
Bike shelters	Each	5000	12	\$60,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	53	\$63,600	
<b>Facilities Subtotal</b>					\$325,600
				<b>20% Contingency</b>	\$143,010
				<b>Project Total</b>	\$858,060

<b>St Louis Park B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	16	\$16,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$16,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	3	\$600	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	450	\$6,750	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	8	\$40,000	
<b>Safety Subtotal</b>					\$47,350
Bench	Each	2000	17	\$34,000	
Bike shelters	Each	5000	4	\$20,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	17	\$20,400	
<b>Facilities Subtotal</b>					\$170,400
				<b>20% Contingency</b>	\$46,750
				<b>Project Total</b>	\$280,500

<b>St Louis Park C</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	2	\$2,000	
Curb Cut	LF	2000	1	\$2,000	
<b>Legal Access Subtotal</b>					\$4,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	2	\$10,000	
<b>Safety Subtotal</b>					\$10,000
Bench	Each	2000	2	\$4,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000		\$0	
Trash Can	Each	1200	2	\$2,400	
<b>Facilities Subtotal</b>					\$11,400
				<b>20% Contingency</b>	\$5,080
				<b>Project Total</b>	\$30,480

<b>St Louis Park D</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	20	\$20,000	
Curb Cut	LF	2000	3	\$6,000	
					\$26,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	1	\$200	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	150	\$2,250	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	19	\$95,000	
<b>Safety Subtotal</b>					\$97,450
Bench	Each	2000	15	\$30,000	
Bike Lockers	Each	5000	3	\$15,000	
Shelter	Each	24000		\$0	
Trash Can	Each	1200	15	\$18,000	
<b>Facilities Subtotal</b>					\$63,000
				<b>20% Contingency</b>	\$37,290
				<b>Project Total</b>	\$223,740

<b>St Louis Park E</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	8	\$8,000	
Curb Cut	LF	2000	0	\$0	
					\$8,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	4	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	1	\$5,000	
				<b>Safety Subtotal</b>	\$5,800
Bench	Each	2000	5	\$10,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000		\$0	
Trash Can	Each	1200	5	\$6,000	
				<b>Facilities Subtotal</b>	\$21,000
				<b>20% Contingency</b>	\$6,960
				<b>Project Total</b>	\$41,760

<b>Golden Valley A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	5	\$5,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$5,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	5	\$25,000	
<b>Safety Subtotal</b>					\$25,000
Bench	Each	2000	5	\$10,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	5	\$6,000	
<b>Facilities Subtotal</b>					\$93,000
				<b>20% Contingency</b>	\$24,600
				<b>Project Total</b>	\$147,600

<b>Brooklyn Center A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	11	\$11,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$11,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	8	\$40,000	
<b>Safety Subtotal</b>					\$40,000
Bench	Each	2000	0	\$0	
Bike shelters	Each	5000	2	\$10,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	11	\$13,200	
<b>Facilities Subtotal</b>					\$71,200
				<b>20% Contingency</b>	\$24,440
				<b>Project Total</b>	\$146,640

<b>Brooklyn Center B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	23	\$23,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$23,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000		\$0	
<b>Safety Subtotal</b>					\$0
Bench	Each	2000	20	\$40,000	
Bike shelters	Each	5000	4	\$20,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	20	\$24,000	
<b>Facilities Subtotal</b>					\$180,000
				<b>20% Contingency</b>	\$40,600
				<b>Project Total</b>	\$243,600

<b>Brooklyn Center C</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	20	\$20,000	
Curb Cut	LF	2000	3	\$6,000	
<b>Legal Access Subtotal</b>					\$26,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Sidewalk	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	1	\$5,000	
<b>Safety Subtotal</b>					\$5,000
Bench	Each	2000	12	\$24,000	
Bike shelters	Each	5000	2	\$10,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	1	\$1,200	
<b>Facilities Subtotal</b>					\$131,200
				<b>20% Contingency</b>	\$32,440
				<b>Project Total</b>	\$194,640

<b>Brooklyn Center D</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	19	\$19,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$19,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	6	\$30,000	
<b>Safety Subtotal</b>					\$30,000
Bench	Each	2000	17	\$34,000	
Bike shelters	Each	5000	4	\$20,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	12	\$14,400	
<b>Facilities Subtotal</b>					\$164,400
				<b>20% Contingency</b>	\$42,680
				<b>Project Total</b>	\$256,080

<b>Fridley A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	2	\$2,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$2,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Sidewalk	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$0
Bench	Each	2000	2	\$4,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	2	\$2,400	
<b>Facilities Subtotal</b>					\$59,400
				<b>20% Contingency</b>	\$12,280
				<b>Project Total</b>	\$73,680

<b>Fridley B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	3	\$3,000	
Curb Cut	LF	2000	3	\$6,000	
<b>Legal Access Subtotal</b>					\$9,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	3	\$15,000	
<b>Safety Subtotal</b>					\$15,000
Bench	Each	2000	2	\$4,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000		\$0	
Trash Can	Each	1200	2	\$2,400	
<b>Facilities Subtotal</b>					\$11,400
				<b>20% Contingency</b>	\$7,080
				<b>Project Total</b>	\$42,480



<b>Columbia Heights A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	22	\$22,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$22,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	37	\$185,000	
<b>Safety Subtotal</b>					\$185,000
Bench	Each	2000	19	\$38,000	
Bike shelters	Each	5000	6	\$30,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	19	\$22,800	
<b>Facilities Subtotal</b>					\$114,800
				<b>20% Contingency</b>	\$64,360
				<b>Project Total</b>	\$386,160

<b>Columbia Heights B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	20	\$20,000	
Curb Cut	LF	2000	10	\$20,000	
<b>Legal Access Subtotal</b>					\$40,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$0
Bench	Each	2000	22	\$44,000	
Bike shelters	Each	5000	5	\$25,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	22	\$26,400	
<b>Facilities Subtotal</b>					\$167,400
				<b>20% Contingency</b>	\$41,480
				<b>Project Total</b>	\$248,880

<b>St Anthony A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	1	\$1,000	
Curb Cut	LF	2000	1	\$2,000	
<b>Legal Access Subtotal</b>					\$3,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	0	\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Sidewalk	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$0
Bench	Each	2000	1	\$2,000	
Bike shelters	Each	5000		\$0	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	1	\$1,200	
<b>Facilities Subtotal</b>					\$27,200
<b>20% Contingency</b>					\$6,040
<b>Project Total</b>					\$36,240

<b>Roseville A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	0	\$0	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$0
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000	1	\$3,000	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	1300	\$19,500	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$22,500
Bench	Each	2000	3	\$6,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	3	\$3,600	
<b>Facilities Subtotal</b>					\$38,600
<b>20% Contingency</b>					\$12,220
<b>Project Total</b>					\$73,320

<b>Falcon Heights A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	7	\$7,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$7,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	3500	\$52,500	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000		\$0	
<b>Safety Subtotal</b>					\$52,500
Bench	Each	2000	7	\$14,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	7	\$8,400	
<b>Facilities Subtotal</b>					\$51,400
				<b>20% Contingency</b>	\$22,180
				<b>Project Total</b>	\$133,080

<b>St Paul A</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	6	\$6,000	
Curb Cut	Each	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$6,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	2	\$400	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	1400	\$21,000	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$21,400
Bench	Each	2000	9	\$18,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	9	\$10,800	
<b>Facilities Subtotal</b>					\$57,800
				<b>20% Contingency</b>	\$17,040
				<b>Project Total</b>	\$102,240

<b>St Paul B</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	65	\$65,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$65,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	5	\$1,000	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000	1	\$45,000	
Median Fence	LF	175	2600	\$455,000	
Median/Refuge Islands	Each	3000	1	\$3,000	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000	1	\$8,000	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$512,000
Bench	Each	2000	35	\$70,000	
Bike shelters	Each	5000	13	\$65,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	15	\$18,000	
<b>Facilities Subtotal</b>					\$225,000
				<b>20% Contingency</b>	\$160,400
				<b>Project Total</b>	\$962,400

<b>St Paul C</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	41	\$41,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$41,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	1	\$200	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$200
Bench	Each	2000	28	\$56,000	
Bike shelters	Each	5000	8	\$40,000	
Shelter	Each	24000	3	\$72,000	
Trash Can	Each	1200	20	\$24,000	
<b>Facilities Subtotal</b>					\$192,000
				<b>20% Contingency</b>	\$46,640
				<b>Project Total</b>	\$279,840

<b>St Paul D</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	16	\$16,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$16,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	1	\$200	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$200
Bench	Each	2000	13	\$26,000	
Bike shelters	Each	5000	4	\$20,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	11	\$13,200	
<b>Facilities Subtotal</b>					\$107,200
				<b>20% Contingency</b>	\$24,680
				<b>Project Total</b>	\$148,080

<b>St Paul E</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	18	\$18,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$18,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	4	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	300	\$4,500	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$5,300
Bench	Each	2000	26	\$52,000	
Bike shelters	Each	5000	7	\$35,000	
Shelter	Each	24000		\$0	
Trash Can	Each	1200	18	\$21,600	
<b>Facilities Subtotal</b>					\$108,600
				<b>20% Contingency</b>	\$26,380
				<b>Project Total</b>	\$158,280

<b>St Paul F</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	34	\$34,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$34,000
Bike Lanes	LF	18	2600	\$46,800	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	8	\$1,600	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6	7500	\$45,000	
Sidewalk	LF	15	2500	\$37,500	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$130,900
Bench	Each	2000	31	\$62,000	
Bike shelters	Each	5000	7	\$35,000	
Shelter	Each	24000	6	\$144,000	
Trash Can	Each	1200	17	\$20,400	
<b>Facilities Subtotal</b>					\$261,400
				<b>20% Contingency</b>	\$85,260
				<b>Project Total</b>	\$511,560



<b>St Paul G</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	59	\$59,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$59,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	4	\$800	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000	4	\$12,000	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6	11000	\$66,000	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$78,800
Bench	Each	2000	48	\$96,000	
Bike shelters	Each	5000	12	\$60,000	
Shelter	Each	24000	4	\$96,000	
Trash Can	Each	1200	24	\$28,800	
<b>Facilities Subtotal</b>					\$280,800
				<b>20% Contingency</b>	\$83,720
				<b>Project Total</b>	\$502,320

<b>St Paul H</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	2	\$2,000	
Curb Cut	LF	2000	2	\$4,000	
<b>Legal Access Subtotal</b>					\$6,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	1	\$200	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$200
Bench	Each	2000	2	\$4,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	2	\$48,000	
Trash Can	Each	1200	2	\$2,400	
<b>Facilities Subtotal</b>					\$59,400
				<b>20% Contingency</b>	\$13,120
				<b>Project Total</b>	\$78,720

<b>St Paul I</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	2	\$2,000	
Curb Cut	LF	2000	1	\$2,000	
<b>Legal Access Subtotal</b>					\$4,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200	3	\$600	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15	150	\$2,250	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000	0	\$0	
<b>Safety Subtotal</b>					\$2,850
Bench	Each	2000	3	\$6,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000	1	\$24,000	
Trash Can	Each	1200	3	\$3,600	
<b>Facilities Subtotal</b>					\$38,600
				<b>20% Contingency</b>	\$9,090
				<b>Project Total</b>	\$54,540

<b>St Paul J</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>	
ADA Pad	Each	1000	1	\$1,000	
Curb Cut	LF	2000	0	\$0	
<b>Legal Access Subtotal</b>					\$1,000
Bike Lanes	LF	18		\$0	
Bump-outs	Each	7200		\$0	
Crosswalk paint	Each	200		\$0	
Crosswalk raised	Each	5000		\$0	
Hawk Signal	Each	45000		\$0	
Median Fence	LF	175		\$0	
Median/Refuge Islands	Each	3000		\$0	
Mid-block Crossings	Each	2500		\$0	
Pedestrian Scale Lighting	Each	5000		\$0	
Restripe "Road Diet" add bike lane	LF	6		\$0	
Sidewalk	LF	15		\$0	
Signal Countdown Timers	Each	8000		\$0	
Street Lights	Each	5000		\$0	
<b>Safety Subtotal</b>					\$0
Bench	Each	2000	1	\$2,000	
Bike shelters	Each	5000	1	\$5,000	
Shelter	Each	24000		\$0	
Trash Can	Each	1200	1	\$1,200	
<b>Facilities Subtotal</b>					\$8,200
				<b>20% Contingency</b>	\$1,840
				<b>Project Total</b>	\$11,040

<b>List of Solutions</b>	<b>Unit Name</b>	<b>Unit Cost</b>	<b>Quantity</b>	<b>Cost</b>
ADA Pad	Each	1000		
Curb Cut	LF	2000		
Bike Lanes	LF	18		
Bump-outs	Each	7200		
Crosswalk paint	Each	200		
Crosswalk raised	Each	5000		
Hawk Signal	Each	45000		
Median Fence	LF	175		
Median/Refuge Islands	Each	3000		
Mid-block Crossings	Each	2500		
Pedestrian Scale Lighting	Each	5000		
Restripe "Road Diet" add bike lane	LF	6		
Sidewalk	LF	15		
Signal Countdown Timers	Each	8000		
Street Lights	Each	5000		
Bench	Each	2000		
Bike shelters	Each	5000		
Shelter	Each	24000		
Trash Can	Each	1200		
<b>Robbinsdale No Projects</b>				

	Unit Name	Unit Cost	Quantity	Cost
Saw cut	LF	\$2.50	90	\$225.00
Removal C&G	LF	\$3.00	60	\$180.00
Remove Bit	SQFT	\$1.50	700	\$1,050.00
Storm	Each	\$2,520.00	1	\$2,520.00
Curb	LF	\$10.00	85	\$850.00
Ped ramp & Sidewalk	Each	\$570.00	2	\$1,140.00
Pavement	SQYD	\$40.00	20	\$800.00
Sod & Topsoil	SQYD	\$5.00	70	\$350.00
			Total	\$7,115.00