Street Improvements Project:
A Community Based Plan for Enhancing Street Design Around Riverside Plaza

MPP Professional Paper

In Partial Fulfillment of the Master of Public Policy Degree Requirements
The Hubert H. Humphrey School of Public Affairs
The University of Minnesota

Bradley Bobbitt
Kristopher Hagan
Brandon Mustful

5/25/2012

*Signature below of Paper Supervisor certifies successful completion of oral presentation **and** completion of final written version:*

_____	_____	_____
Greg Lindsey, Paper Supervisor Executive Associate Dean Humphrey School of Public Affairs	Date, oral presentation	Date, paper completion

_____	_____
Cam Gordon, Second Committee Member City Council Member – City of Minneapolis Signature of Second Committee Member, certifying successful completion of professional paper	Date

_____	_____
Joe Bernard, Third Committee Member Senior City Planner – City of Minneapolis Signature of Third Committee Member, certifying successful completion of professional paper	Date

Street Improvements Project

A Community-Based Plan for Enhancing Street Design Around Riverside Plaza

Bradley Bobbitt
Kristopher Hagan
Brandon Mustful

University of Minnesota

5/16/2012

Acknowledgements

City Councilor's Office
Cam Gordon, Ward 2 Council Member
Robin Garwood, Ward 2 Policy Aide
Farhio Khalif, Ward 2 Community Outreach Assistant

City of Minneapolis CPED
Joe Bernard, Senior City Planner

West Bank Community Coalition
Michael Schmitz, Executive Director

University of Minnesota CHANCE Course Leaders
Greg Lindsey, Executive Associate Dean of the Humphrey School of Public Affairs
Merrie Benasutti, Coordinator of Community Partnerships at the Center for Integrative Leadership

Volunteer Ped and Bike Counters
Angie Courhan
Nancy Ford

Table of Contents

Appendices

List of Maps

List of Tables

List of Figures

Executive Summary

The Street Improvement Project was a collaboration between City Council Member Cam Gordon's Office, the West Bank Community Coalition (WBCC), the City of Minneapolis' Department of Community Planning and Economic Development (CPED) and the University of Minnesota Cedar-Humphrey Action for Neighborhood Collaborative Engagement (CHANCE). The goal of the project was to create four community-based street plans oriented towards improving pedestrian and bicycle safety. The plans included one for 4th Street South, one for 15th Avenue South, and two for 6th Street South, including one that adhered to a $30,000 construction cost and one that did not.

The project was selected because the City of Minneapolis has plans to repave 4th Street and 15th Avenue in 2014. Community stakeholders were interested in having a neighborhood produced plan to use as an advocacy tool in the City's planning process for the streets. Additionally, all three streets, particularly 6th Street, have significant design issues relating to pedestrian and bicyclist safety.

This report includes five sections with information on research and findings, current site conditions, the community engagement process, recommended street designs for 4th, 15th, and 6th, and recommendations to project partners. Also, all of the engagement process materials are presented in appendices for the use of project partners if it is decided that further community input is needed. A brief summary of each section is provided below.

Approach and Findings

To direct the project the research team and community volunteers conducted a general scan of several studies for baseline data. Studies included collecting previous public input on site issues, conducting a pedestrian and bicycle traffic count study, a survey of light rail users, and a parking turnover study. A brief summary of the background, methods and key findings of each study is presented below.

Previous Public Input

In order to create a community-based plan without replicating past endeavors, a review of previous pubic engagement efforts was conducted. Several reports were found including the following:

- A city of Minneapolis community walking tour of street conditions in October, 2011
- Focus groups conducted by U of M CHANCE students in collaboration with the Cedar Riverside NRP and West Bank Community Coalition
- Surveys conducted by the U of M CHANCE students in collaboration with the Cedar Riverside NRP and West Bank Community Coalition
- Previous street plans by Fine & Associates, CPED, and the City of Minneapolis Department of Public Works

Several concerns expressed by community stakeholders were consistent between meetings including issues with poor road conditions, the need for traffic control devices, lack of crosswalks on 6th Street, and a lack of adequate lighting. Other issues included concern for vehicle speeds, a lack of adequate parking, and poor sidewalk conditions. A summary of public input by meeting is presented in table ES 1 below.

Table ES 1: Summary of Issues Identified in Previous Public Engagement				
Issues	**CPED Walk-About**	**1627 6th St Focus Group**	**1611 6th St Focus Group**	**603 Cedar Ave Focus Group**
Concern about vehicle speeds			x	
Not enough lighting		x	x	x
Lack of crosswalks on 6th St	x		x	x
Poor road conditions	x	x		x
Not enough parking space	x		x	
Need for traffic control devices	x	x	x	x
Poor sidewalk conditions	x			x

Some of these issues will be addressed when the City of Minneapolis repaves the streets in 2014, particularly concerns with pavement conditions. However, others are issues of design. Previous plans advocate for various solutions to these concerns through design features such as bumpouts, crosswalks, and bike lanes. Solutions and policy goals suggested in these plans served to further shape the direction of this project.

Pedestrian and Bicycle Traffic Study

Pedestrian and bicycle traffic counts are common planning tools used to determine the level of use and appropriate street design. Both the city of Minneapolis and Transit for Livable Communities use pedestrian and bicyclist counts in their planning processes. Counts for this report were conducted for 4th Street, 15th Avenue, and 6th Street on weekdays during the months of February and March of 2012. The majority of the counts were held during normal peak traffic hours of 4 to 6 pm as defined in count methodologies used by Transit for Livable Communities. A 12-hour count was also conducted from 8 am to 8 pm to provide a broader picture of daily traffic.

Key findings from the study include:

- An average of 123 people per hour crossed 6th St S near 16th Ave S outside a designated crosswalk during the 12-hour count. 4th Street had a rate of 30 crossings per hour during peak hours (4pm-6pm) and 15th Ave had 28. These numbers do not include legal crossings.
- Considerable spikes in pedestrian traffic were observed on 6th Street during the 12-hour count. These spikes seemed to correspond with the start and end of prayer times at local mosques.
- The ratio of pedestrians crossing outside a designated crosswalk to legal crossings on 6th Street was 1.54. 15th Street had a lower ratio of.448 and 4th Street exhibited a ratio of 1.36.
- Peak hourly rates of bicycle traffic were 13.75 for 6th Street, 11.5 for 15th Ave, and 19 for 4th Street.

These findings highlight the significant demand for pedestrian facilities in the area. Peak pedestrian traffic volumes along 6th Street are comparable to commercial corridor streets in other parts of Minneapolis such as East Lake Street near Chicago Avenue (Transit for Livable Communities, 2011). Additionally, it was found that the rate of crossings on 6th Street meet one of the federal traffic light warrant criteria of an average of 100 people crossing over a period of 4 hours, which further supports the need for traffic control devices in the area. Furthermore, it is important to note that these counts

were conducted in February and March; pedestrian and bicycle traffic will likely increase during the summer months.

Light Rail User Survey

All of the previously collected public input gathered through focus groups and public meetings had targeted neighborhood residents. Thus a group of impacted stakeholders, commuters, were being left out of the input process. To fill this gap of information, a short written survey of 31 light rail users at the Cedar-Riverside station of the Hiawatha Line was conducted that used multiple choice questions about walking and biking issues in the neighborhood. See Appendix C for a copy of the survey form used. A majority of respondents (68%) in the convenience sample were from the neighborhood.

Key findings from the survey include:

- When asked, "What are the biggest factors that discourage you from walking around Riverside Plaza?" the top two responses were 1) unsafe road crossings, and 2) aggressive motorist behavior.
- When asked, "What actions do you think need to be taken to increase pedestrian safety?" the top two responses were 1) crosswalk improvements, and 2) more street lighting.
- The majority of respondents (65%) said that they walk around the neighborhood five or more times per week.

Although most of the respondents were neighborhood residents, these findings suggest that light rail users have similar concerns to other stakeholders. Furthermore, the findings support improvements to pedestrian crossing facilities and use of traffic calming devices.

Parking Study

In several of the previous public engagement efforts, community stakeholders expressed a concern about parking congestion around Riverside Plaza. A parking turnover study was conducted to observe how long cars remain parked on the streets during a regular business day. Parked vehicles along each street were counted and had their license plate recorded every two hours starting at 8am till 4pm.

High proportions (62% and 78% respectively) of vehicles remain parked on these street segments for two hours or more. On 4th Street, on the other hand, where there is metered parking, only 10 percent of the vehicles remain for 2 hours or more. Over the course of the full day, from 8 am to 4 pm, 35% of vehicles remained parked on 6th St, 46% on 15th Ave, and 0% on 4th Street.

Current Site Conditions

The research described above illustrates a number of issues creating unsafe conditions for pedestrians and bicyclists on 4th, 15th, and 6th. First, there are limited facilities for pedestrian and bicyclist use of the roadways such as bike lanes or crosswalks. The sidewalks themselves are either in poor condition, are lacking completely in some sections, or have their effective width reduced by the presence of lights, power poles, and other barriers. Furthermore, the streets tend to have high volumes of pedestrian and bicycle traffic relative to other residential streets in the Twin Cities (Transit for Livable Communities, 2011). This high volume of traffic is likely due to the high density of the area, high percentage of transit usage among residents, and a significant number of commuters who come to Cedar-Riverside to work. The area also has considerable parking congestion likely also due to density of residences and jobs in the area.

Information on site condition issues was gathered through the input of community stakeholders and research conducted by the CHANCE student team. Issues of concern on 4th, 15th, and 6th include:

- Lack of pedestrian crossing facilities such as crosswalks
- Lack of traffic calming and control devices
- Lack of adequate bicycle facilities
- Pedestrian crossings terminating in driveways
- High volume of pedestrian and bicycle traffic
- Poor road and sidewalk conditions
- Inadequate lighting
- Parking congestion in free parking areas.

Another method of evaluating current conditions of the streets used was Level of Service (LOS). LOS is a common concept used to describe performance of streets in terms of their accommodation of different modes of travel on roadways (Landis, 1997, p. 1). This report utilized a level of service calculator designed by the League of Illinois Bicyclists (League of Illinois Bicyclists). The model and figures used for the calculations can be found in Appendix A. Results of calculations are illustrated in the table below.

Table ES 2: Street Level of Service Grades

Street section	Pedestrian LOS	Bicycle LOS
4th Street	B	C
15th Avenue	B	C
6th Street	A	D

The streets received relatively high scores for pedestrian levels of service and lower scores for bicycle level of service. The bicycle lane scores make sense due to the general lack of facilities such as bike lanes, poor pavement quality, and traffic levels on each street. However, pedestrian levels of service scores do not seem to correlate with concerns expressed by stakeholders and observed through research by CHANCE students. This is likely because the LOS calculator used did not account for factors such as the presence or absence of crosswalks, traffic calming devices, or other similar features. These factors in particular are some of the main concerns contributing unsafe conditions for pedestrians.

Community Engagement Process

The main goal of this project was to create plans for 4th St, 15th Ave, and 6th St based on community input. The method selected for collecting that community input was a design open house. A design open house is essentially a poster session that presents participants with alternative designs that could address an issue and then provides a space for them to give their input. This approach was chosen because it would allow participants to express an overarching vision for the design of the streets rather than create a list of concerns like those produced in previous efforts.

The “Our Streets” open house, as it was called, occurred on Saturday, April 21 from 1 to 3 pm at the Brian Coyle Community Center. A total of 30 people attended the meeting. Various community leaders were in attendance such as City Councilor Cam Gordon, Joe Bernard from the City of Minneapolis Community Planning and Economic Development Department, and Associate Dean of the Humphrey School of Public Affairs Greg Lindsey. A variety of community members attended as well including local residents, bicycle advocates, and concerned citizens.

The materials presented at the open house consisted of three exhibits; 1) design features, 2) street design examples, and 3) parking policy examples. The design features exhibit displayed pairs of different devices that could be used to address various concerns previously expressed by the community. For example, stop signs or pedestrian crossing signals for slowing traffic and making streets safer for pedestrians were presented as a pair. The second Exhibit presented complete designs for the streets that combined multiple design features. These were used to present a potential overall vision of what the street could look like and how it could be made safer. Both exhibits utilized images (photos and maps respectively) and short descriptions of pros and cons. The final exhibit presented options for parking restriction. Participants voted on each exhibit. Voting was scored for each street design example giving one point for each participant preferred design feature and 6, 4, or 2 points based on voter preference for the design example itself.

The final result of the "Our Streets" meeting was a collection of preferences from meeting participants on individual design features, vision of the overall design for each street or intersection, and parking restriction. The preferred design or feature was the one that received a simple majority of votes. Appendix H contains a summary of participant voting for each exhibit.

Recommended Street Plans

The proposed street plans for 15th, 6th, and 4th incorporate moderate traffic calming and safety devices while maintaining existing parking around Riverside Plaza. The street plans reflect a synthesis of previous public input and scoring of voting from the open house held on April 21st. The recommended street plans are presented below. A summary of the vote scoring results can be found in Appendix D.

Table ES 3: Final Selected Design Scenarios

Street/Intersection	Selected Example	Design Features Included
4th Street	Example 2	Bike Lanes, Wider (8 Foot) Sidewalks
15th Avenue	Example 2	Stop Signs, Bike Lanes, Bumpouts
6th Street with $30,000 Constraint	N/A	Crosswalks, Ped Crossing Signals, Shared Bike/Traffic Lanes (Sharrows)
6th Street No Cost Constraint	Example 2	Bumpouts, Ped Crossing Islands, Crosswalks, Ped Crossing Signals, Shared Bike/Traffic Lanes (Sharrows)
Intersection of 15th & 6th	Example 1	Bumpouts, Stop Signs, Crosswalks
Intersection of 15th & 4th	Example 1	Bumpouts, Speed Humps, Ped Crossing Signs, Crosswalks
Parking Policy	Example 1	Current Parking Restrictions

While the recommendations for street designs described above are based off of research on effective methods for creating safer streets, empirical evidence of the conditions in the area, and the expressed preference of residents they are not the only options to achieve project goals. Furthermore each of the plans have different trade-offs they are making in terms of balancing the needs of pedestrians, bicyclists and automobile users. There are a wide range of design options available to the neighborhood to improve pedestrian and bicyclist safety on the streets.

Examples of potential alternative approaches include:

- Redesign the streets using a "Shared Space" methodology (see Appendix J)
- Focus on controlling automobile driver behavior (i.e. post reduced speeds)
- Incorporate more traffic calming devices (i.e. traffic circles)

Conclusions and Recommendations

The findings presented in this report strongly support improving street conditions for pedestrians and bicyclists on the streets around Riverside Plaza. The area has been shown to have high rates of pedestrian traffic for residential streets, particularly along 6th Street and 15th Avenue. Currently a lack of adequate design features and poor conditions of facilities are creating a generally unsafe environment for all users and particularly for pedestrians and bicyclists. Furthermore, there is a significant amount of public concern about issues of safety particularly along 6th Street. Even the addition of some minimal improvements like stop signs and crosswalks would do much to improve safety in the area.

Furthermore, while the City of Minneapolis is planning on improving the streets to some extent their plans do not meet the level of improvement shown to be preferred by community stakeholders. Table ES 4 below summarizes the differences between the design features proposed in the plan produced by the City's Department of Public and the community-produced plan of this report.

Table ES 4: Comparison of Design Features from Community and City Street Plans

Street Segment	Department of Public Works Plan design features	Community Approved Plan design features
4th Street	Bike lanes, Parallel Parking	**Bike Lanes, Parallel Parking**
15th Avenue	Bike Lanes, 6ft Sidewalk, Widen Roadway to 50ft	**Bike Lanes, 8ft Sidewalk, Widen Roadway to 50ft**
6th Street	Repave from 15th Avenue to 16th Avenue	**Crosswalks, Ped Crossing Signals, Bumpouts, Ped Crossing Islands, Bike Sharrows**
Intersection of 4th and 15th	Widen corner, Add sidewalk, bumpouts	**Widen Corner, Add Sidewalk, Bumpouts, Ped Crossing Signs, Speed Humps**
Intersection of 6th and 15th	Bumpouts	**Bumpouts, Crosswalks, Stop Signs**

The following is a summary of recommendations on how to finalize the planning process and improve safety conditions on 4th Street, 15th Avenue, and 6th Street based off information from the body of this report.

***Recommendation 1:* Evaluate the plans from this report in an open public meeting facilitated by the West Bank Community Coalition.**

***Recommendation 2:* If the plans are accepted by the WBCC and the community, it is recommended that the WBCC meet with the City of Minneapolis in order to further discuss the proposed plans.**

***Recommendation 3:* Based on the findings of the pedestrian and bicycle traffic counts, it is recommended that the City of Minneapolis conduct a traffic study on 6th street to determine if the second federal warrant for a traffic light is met.**

Project Overview

The Cedar-Riverside Street Improvements Project was a community-based research project completed as part of the 2011-2012 Cedar-Humphrey Action for Neighborhood Engagement (CHANCE) capstone class at the University of Minnesota. The main objective of the project was to create plans for 4th Street South, 15th Avenue South, and 6th Street South (See Map1 on the next page) that, if implemented by the City of Minneapolis, would improve pedestrian and bicyclist safety. The plans were to be created utilizing public input from neighborhood residents and other impacted stakeholders.

The project, to be completed over the course of the 2012 spring semester, was one of three selected by neighborhood residents. Neighborhood leaders from local nonprofit organizations, businesses, academic institutions, and governmental agencies attended a public meeting and voted on projects that they deemed to be high priorities for the neighborhood. The streets improvement project was selected at the meeting for three main reasons. First, the City of Minneapolis had announced plans to repave 4th Street and 15th Avenue in 2014 when the Central Corridor light rail line would begin operating in the neighborhood. Community stakeholders were interested in having a plan for the streets that would reflect neighborhood preferences. Second, all three streets have significant design issues relating to pedestrian and bicyclist safety. Finally, the CHANCE capstone class seemed well positioned in terms of skill sets, time, and credibility within the neighborhood to deliver the desired product.

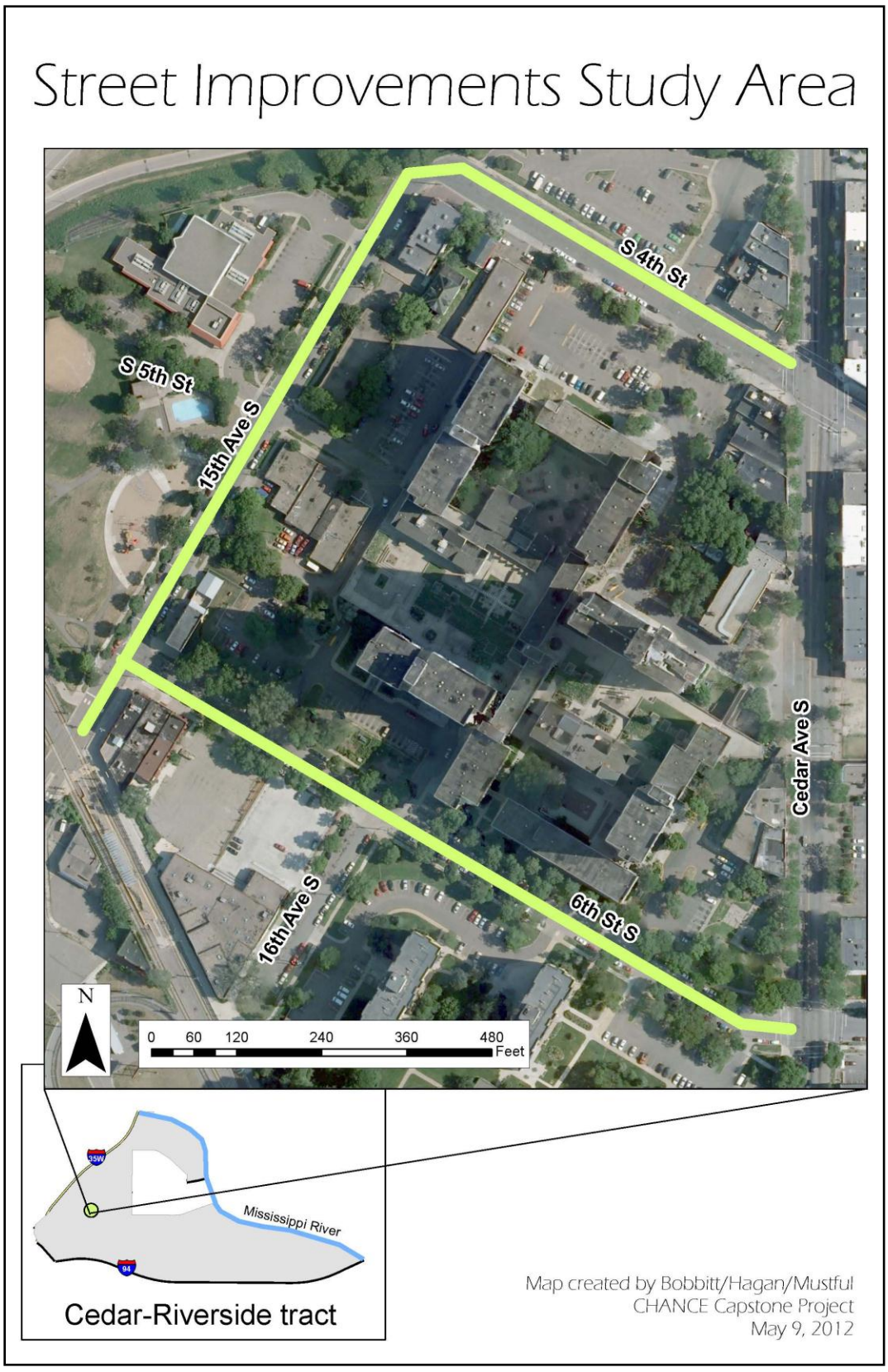
Overall, the project objectives included delivery of designs for 15th Avenue and 4th Street S, and two designs for 6th Street. Designs for 6th Street S included one design that would adhere to a $30,000 construction cost constraint and one that would not need to adhere to this constraint. The cost constraint reflected existing funds set aside to complete improvements along 6th Street. All of these designs would be synthesized into a single plan for the streets that would be presented to community partners and interested stakeholders at a public meeting at the end of the 2012 spring semester.

A broad scope of tasks was taken on to complete the project deliverables. Tasks included reviewing existing literature on street design and public engagement, collecting data on previous public input, conducting parking, pedestrian and bicycle traffic, and light rail user studies, designing and carrying out a public engagement process, and synthesizing the results of everything into a useable report.

The team collaborated with community partners throughout the project including: City Council Member Cam Gordon, Ward 2; Joe Bernard, Minneapolis Department of Community Planning and Economic Development; Michael Schmitz, West Bank Community Coalition; and Dr. Greg Lindsey, Humphrey School of Public Affairs. The CHANCE student team consisted of Bradley Bobbitt (Urban and Regional Planning), Kristopher Hagan (Public Policy), and Brandon Mustful (Public Policy).

The remainder of this report is broken down into sections that summarize important information about project tasks and deliverables mentioned above. Sections topics include current site conditions, research conducted by the CHANCE student team, the project's public engagement process, final street designs, and recommendations to project partners.

Map 1: Street Improvements Study Area



Approach and Findings

To direct the planning process of the project the CHANCE student team along with community volunteers conducted a wide range of research activities on site concerns to supply data where it was lacking. Studies included collecting and analyzing previous public input on site issues, conducting a pedestrian and bicycle traffic count study, a survey of light rail users, and a parking turnover study. A brief summary of the background, methods and key findings of each study is given below.

Collecting Previous Public Input

Before the start of the public engagement process of this project was conducted, several other efforts had been undertaken by the City of Minneapolis, the West Bank Community Coalition, and the Cedar-Riverside Neighborhood Revitalization Program. These efforts included: a community walking tour of 6th Street, 15th Avenue, and 4th conducted by the City of Minneapolis to collect input on street design issues; focus groups and surveys on neighborhood priorities conducted by another CHANCE student team on behalf of the WBCC and CRNRP; and existing plans for the neighborhood from the City of Minneapolis as well as Fine & Associates a developer with a project adjacent to the site. Much of this previous input focused on traffic and infrastructure problems. For example, in one focus group a participant mentioned that they were "concerned about vehicle speeds along the roads". Through collecting input such as this, design features for project's public engagement process were tailored to address community concerns. Each of the sources mentioned above will be briefly discussed. Many of the concerns were similar. Table 1 below summarizes in general terms previous input and its source.

Table 1: Summary of Issues Identified in Previous Public Engagement

Issues	CPED Walk-About	1627 6th St Focus Group	1611 6th St Focus Group	603 Cedar Ave Focus Group
Concern about vehicle speeds			x	
Not enough lighting		x	x	x
Lack of crosswalks on 6th St	x		x	x
Poor road conditions	x	x		x
Not enough parking space	x		x	
Need for traffic control devices	x	x	x	x
Poor sidewalk conditions	x			x

Community Walking Tour

The City of Minneapolis facilitated a Community Walking Tour in October 2011. Residents were given the opportunity to voice their opinion regarding issues with the streets in the area. Roughly 20 residents were present. Following the Walking Tour, residents reconvened at Brian Coyle Community Center and were provided aerial view maps. Breaking off into small groups residents marked areas of concern, drew designs and made notes on the maps.

Residents raised many concerns generally related to three main problems. First, many important pedestrian crossings altogether lacked signage or marked crosswalks. Furthermore, some commonly

used pedestrian crossings led from a sidewalk on one side to a driveway on the other. Second, the area generally lacked traffic calming devices such as sidewalk bumpouts at intersections. Third and of particular concern, was the complete lack of a sidewalk at the intersection of 15th & 4th. Several interesting solutions were offered for the various issues. For example some residents proposed parking restrictions or even angled parking on 4th to deal with parking congestion.

Focus Groups

Another group of CHANCE students conducted several focus groups in order to identify neighborhood priorities as part of a project with the Cedar Riverside NRP and West Bank Community Coalition (Ashan et al. 2012). The focus groups represented a wide cross section of the community. Some of the priorities discussed by participants involved street improvements, most of which focused around 6th Street and old 17th Avenue. Beyond repairs to street pavement, participants also spoke to the need for crosswalks at the intersection of 6th Street and old 17th Avenue, improvements to street lighting, and improvements to pedestrian safety features at major crossing points. One interesting suggestion beyond the scope of this project was the addition of a left turn lane and turn light at the intersection of 6th Street and Cedar Avenue to control traffic coming from Cedar. Overall, sidewalks, lighting, and crossing safety on 6th St. were mentioned most often.

Surveys

In addition to focus groups, the CHANCE students working with the CRNRP and WBCC also conducted surveys in order to identify neighborhood priorities. Table 2 (Ashan, et al. 2012) below summarizes neighborhood priorities with respect to infrastructure. The results from this survey also highlight resident concerns about parking congestion, surface quality of roads and sidewalks, and pedestrian safety features such as crosswalks.

Table 2: Neighborhood Priorities Survey Responses by Infrastructure Type

Site Issue	Number of Respondents	Percent
Parking	165	40%
Road Pavement Quality	158	38%
Sidewalk Quality	152	37%
Crosswalks	97	24%
Stop Signs/ Stop Lights	92	22%
Signs to light rail station and other destinations	82	20%
Other	36	9%

Previous Plans

Plans created by other entities were also used to influence design plans for the Community Open House. Highlights of these plans will be briefly summarized below.

Fine & Associates: Private developer Fine & Associates provided a sketched plan for 15th Ave. South. The plan includes bumpouts at the corner of 15th Ave. and 4th St., 15th Ave. and 5th St., and 15th Ave. and 6th Street. Crosswalks were placed at each intersection as well, and a bike lane runs along the median of the road. Associate Jim White met the CHANCE student team on two separate occasions and provided information regarding their street designs. In addition to their street designs Fine & Associates is developing Currie Park Flats, a 254 unit housing complex that will be located along 15th Ave. S just west

of Riverside Plaza. The addition of another multi-unit housing complex in the neighborhood could increase density and parking needs.

Department of Public Works: The City of Minneapolis' Department of Public Works produced a preliminary plan for the design of 4th Street and 15th Avenue, and a portion of 6th Street (Bernard, 2012). The plan incorporated several key improvements to the streets including sidewalk bumpouts, bike lanes, and wider driving lanes. This plan would require widening of the current 40 foot roadway to 50 feet. In addition, the corner at 15th Ave. and 4th St. was widened, and a sidewalk was proposed to run along the northern side, adjacent to the Mixed Blood Theater. Table 3 summarizes the plan's main features.

Table 3: Department of Public Works Street Improvement Plan

Street Segment	Design Features
4th Street	Bike lanes, Parallel Parking
15th Avenue	Bike Lanes, 6ft Sidewalk, Widen Roadway to 50ft
6th Street	Repave from 15th Avenue to 16th Avenue
Intersection of 4th and 15th	Widen corner, Add sidewalk, bumpouts
Intersection of 6th and 15th	Bumpouts

Cedar Riverside Small Area Plan: Approved in April of 2008, the Cedar Riverside Small Area Plan was created through a deliberate process of community engagement. Several focus groups, a community open house, smaller follow-up meetings and interviews were conducted in order to accurately portray the vision that residents have for their neighborhood. Residents were concerned with dangerous intersections for pedestrians and "blighted" areas along sidewalks that make walking uncomfortable. In addition, Figure 4 illustrates some of the "problem areas" identified by residents. Several of these problem areas fall within our study area.

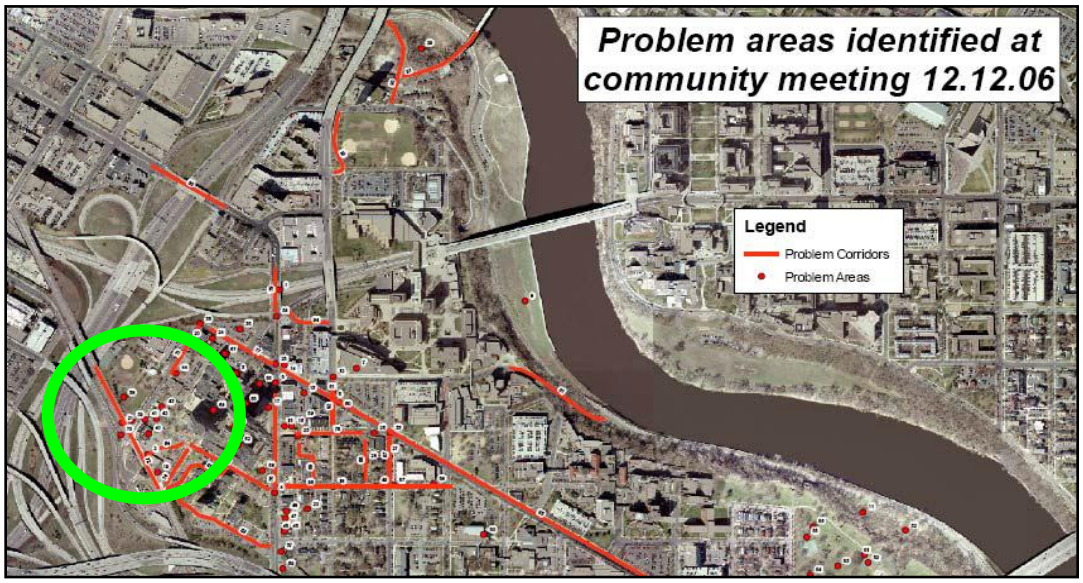


Figure 1: Problem Areas (Cedar Riverside Small Area Plan 2008)

Recommendations for improvements followed the concerns expressed in the other engagement processes mentioned earlier. They include improving safety and accessibility for pedestrians and

bicyclists, improving management of the existing parking supply, and decreasing the need for parking through promoting transit use. Although these recommendations are general in nature, they served as general guides that directed creation of more specific design solutions.

Pedestrian and Bicycle Traffic Study

Pedestrian and bicycle traffic counts are common planning tools used to determine the level of use and appropriate design features for streets based on that demand. Both the city of Minneapolis and Transit for Livable Communities, a local advocacy nonprofit organization, conduct pedestrian and bicyclist counts every September in various Twin Cities neighborhoods. Counts have been conducted by Minneapolis and TLC on both Cedar Ave S and Riverside Ave S near Riverside Plaza but, not on the streets of concern for this study.

Counts were conducted on 4th Street, 15th Avenue, and 6th Street by the CHANCE student team and volunteers on weekdays during the months of February and March of 2012. The majority of the counts were held during normal peak traffic hours of 4 to 6 pm as defined in methodologies used by Transit for Livable Communities. These peak hour counts gave a snapshot of what traffic in the area looks like during times of heaviest use. A 12-hour count was also conducted from 8 am to 8 pm to provide data on the distribution of traffic flow throughout the day and to give a picture of total daily traffic based on observation rather than estimation.

Methods used for conducting the counts followed accepted protocols of the City of Minneapolis Public Works Department which are also consistent with national bicycle and pedestrian documentation protocols. Pedestrians and cyclists are simply counted as they cross an imaginary line called a screen line. Additional information such as if they are using assistance like a wheelchair, if the person is a child, male or female is also collected (Department of Public Works, City of Minneapolis, 2012). Additionally, for the purposes of this study pedestrians who crossed the street outside of a designated crosswalk were counted. Counters used a defined area up and down the street in which to count these crossings. Count forms can be found in Appendix B and Figure 5 shows the site locations.

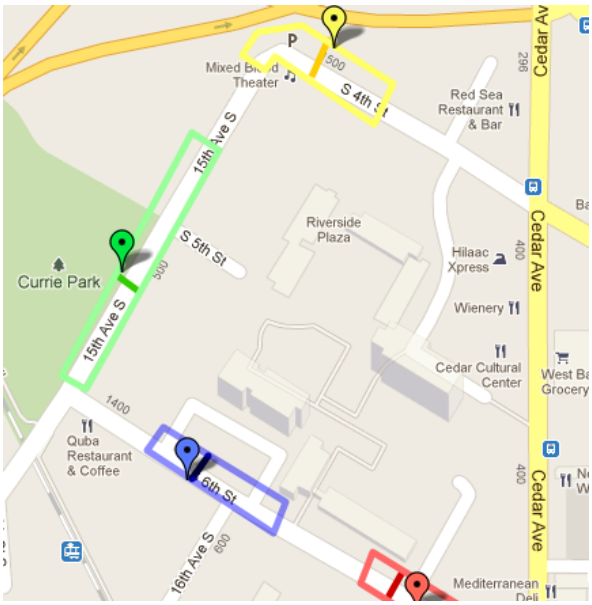


Figure 2: Pedestrian and Bike Count Locations

Through observing and documenting pedestrian and cyclist activity on 4th, 15th, and 6th it was found that significant non-motorized traffic exists on the streets despite the poor conditions of facilities. The average volume for pedestrian traffic along 6th Street was 80 people per hour during the 12 hour count with a peak volume of 125. 15th Avenue and 4th Street exhibited slightly lower levels of pedestrian traffic. In addition to relatively high levels of normal traffic along sidewalks, 6th Street also had an extremely high number of pedestrian street crossings outside of designated crosswalks. An average of 123 people per hour crossed near 16th Avenue and 88 per hour near old 17th Avenue. 4th Street also had a considerable number of "unauthorized" crossings however, 15th had considerably lower rates of crossings. There were also several peaks of traffic throughout the day beyond 4-6pm particularly 6-8pm

which accounted for 36.32% of pedestrian traffic. Bicycle traffic rates were not as high as pedestrian traffic averaging 10 riders per hour. However, many more cyclists were observed who simply did not cross the screen line. It should also be noted that these counts were conducted during winter months. Levels of pedestrians and bicyclists will conceivably be higher during summer months. Table 4 shows the results of the 12 hour count conduced on 6th Street.

Table 4: Pedestrian & Bike 12-hour Traffic Count Results

Date	Time Frame	Bikers	Pedestrians	Total	Unauthorized Crossing	Percent of Total Traffic Flow	Percent of Unauthorized Crossings
Friday, March 23,2012	*8-10 am*	*15*	*55*	*70*	*122*	8.83%	11.94%
Friday, March 23,2012	*10am-12 pm*	*17*	*98*	*115*	*153*	14.50%	14.97%
*Friday, March 30,2012**	*12p-2pm*	*18*	*205*	*223*	*312*	28.12%	30.53%
Friday, March 23,2012	*2-4 pm*	*16*	*194*	*210*	*232*	26.48%	22.70%
Friday, March 23,2012	*4-6 pm*	*22*	*153*	*175*	*203*	22.07%	19.86%
Friday, March 23,2012	*6-8 pm*	*33*	*250*	*288*	*268*	36.32%	26.22%

*Data had to be gathered a second time for 12 pm to 2 pm due to some complications with data collection.

These findings have important implications in terms of design for the streets. Most importantly, the amount of pedestrian traffic in the area meets one of the two Federal Highway Administration's standards warranting traffic lights. The requirement is that an average of 100 people an hour cross the street. 6th Street averages 123. The second requirement is that there are fewer than 60 gaps per hour in the automobile traffic stream of adequate length to allow pedestrians to cross during the same period when the pedestrian volume criterion is satisfied(Federal Highway Administration). In a traffic count report provided for us by Fine and Associates (White, 2012), during a peak traffic hour 213 cars were counted entering and leaving 6th St S. Based on this data it seems possible the second criterion for warranting a traffic light is likely being met.

Light Rail User Survey

All of the previously collected public input gathered through focus groups and public meetings targeted residents of the neighborhood. Outreach was generally conducted through neighborhood based-organizations or mediums that were largely used by neighborhood residents such as online forums. However, Cedar-Riverside attracts a high number of commuters due to large employers and institutions in the area. Thus a number of impacted stakeholders, commuters, were being left out of the input process. To fill this gap of information a small survey of 31 light rail users at the Cedar-Riverside station of the Hiawatha Line was conducted as it was assumed that some of them would be residents from other parts of the Twin Cities. A written survey with multiple choice questions on issues pertaining to walking and biking in the area was handed out to willing light rail riders near the station. See Appendix C for a copy of the survey form used. While the intent of the survey was to collect input from stakeholders who were not living in Cedar-Riverside, a majority of respondents (68%) were from the neighborhood

Despite this limitation, some important and useful findings resulted. First, when asked, "What are the biggest factors that discourage you from walking around Riverside Plaza?" the top two responses were 1) unsafe road crossings, and 2) aggressive motorist behavior for all respondents. Other possible responses were lack of sidewalks and trails, traffic, and poorly maintained sidewalks. Second, when asked, "What actions do you think need to be taken to increase pedestrian safety?" the top two responses were 1) crosswalk improvements, and 2) more street lighting. Finally, the majority of respondents (65%) said that they walk around the neighborhood five or more times per week. Not as much useful data was gathered about biking habits as most of the respondents used walking as their main mode of transportation in the neighborhood. Tables 5 and 6 summarize participant responses to the questions mentioned above.

Table 5: What are the biggest factors that discourage you from walking around Riverside Plaza?

	#1 (highest)	#2	#3	#4	#5 (lowest)	checked (but not ranked)
Lack of sidewalks	2	0	3	3	7	3
Traffic	2	5	6		1	2
Unsafe road crossings	3	6		6		9
Poorly maintained sidewalks	3	0	4	2	4	3
Aggressive motorist behavior	6	4	2	2	2	3

Table 6: What actions do you think need to be taken to increase pedestrian safety?

	#1 (highest)	#2	#3	#4	#5 (lowest)	Checked (but not ranked)
Crosswalk improvements	6	4	3	1	1	7
Speed bumps	3	2	3		7	2
Repair existing sidewalks	1	5	4	4		4
More street lighting	4	2	3	4	1	7
Increased signage	3	4	1	4	4	2

These results have several important implications. Based on participant responses the installation of traffic calming design features should be considered. Some possible features which are designed to slow motorists include curb extensions, traffic circles, speed humps, stop signs, and pedestrian islands. In addition to street design features the number of responses about lighting issues and the perception of safety in the area warrant further inquiry into the issue.

Parking Study

A commonly expressed concern by neighborhood residents was the availability of parking around Riverside Plaza (1611 Cedar Focus Group, 2012). Along 6th Street South and 15th Avenue South surrounding Riverside Plaza there is free and unlimited parking availability over a high proportion of the road segments. The only limits to parking include areas where parking is prohibited during certain hours for school bus pick-ups, 4 handicap parking spaces, areas near fire hydrants, and areas within 5 feet of

driveways and curb cuts. 4th Street on the other hand has metered parking during normal business hours. A breakdown of the approximate number of parking spaces in the area can be seen in Table 7. During the community walking tour held by CPED on October 15, 2011, some residents suggested that a 90 minute parking limit be put into place on the road segments to ease congestion and free up more spaces for residents (Department of Community Planning and Economic Development, October 2011).

Table 7: Parking Space Availability by Street & Type

	4th St	15th Ave	6th St	Total
24 hr free parking	0	35	71	106
Metered parking	26	0	0	26
Restricted parking	4	0	9	4
Handicap parking	0	4	0	4
Total	31	39	80	150

To address concerns about parking in the final plan with empirical data and analyze potential impacts of new parking restrictions, a parking turnover study was conducted. The goal of the study was to observe how long cars remained parked on the street segments during a regular business day. The study was conducted on Friday, February 24th a normal business day. Vehicles along each street were counted in two hour intervals between 8am and 4pm. In order to track not only if parking spots were full but also what the turnover rate was vehicle license plate numbers were tracked between each observation. Lengthier time intervals were used to see which cars were parked for two hours or more. The owners of these vehicles would be impacted by establishing new parking limitations along 15th and 6th.

The results show that there is a high degree of parking congestion throughout the day with little to no available parking spaces on 6th St. and 15th Avenue. Although there was as much as 17.5% available parking space at the 4 o'clock hour on 15th Ave, there was also no available parking space at 8 or 10 am. The results also show that a high proportion of vehicles parking on these two street segments park for 2 hours or more. Conversely, only 10% of all vehicles remained for two hours or more on 4th Street, most likely due to the presence of metered parking. Results can be seen below in Table 8.

Table 8: Cars Parked at Least 2 Hours

Street Segment	Total Cars	Cars Parked at Least 2 Hours	Percentage
4th St	20	2	10%
15th Ave	59	46	78%
6th St	139	86	62%

Tables 9, 10 and 11 illustrate the number and percentage of cars which remained parked on the street segments as the day progressed. Just over 1/3 of the cars that were parked on 6th Street at the beginning of the day remained there by 4 pm. On 15th Ave nearly half of the cars that were parked on that street at 8 am were still there by 4 pm. However, on 4th Street cars did not remain long at the metered spots as there were no cars that remained parked there for the entire day.

Table 9: Cars Remaining Parked on 6th St (2/24/12 from 8 am to 4 pm)			
Time	**Number of Parked Cars**	**Percentage Used of 69 Total Spaces**	**Percentage of Available Space**
2 hrs	60	86.9%	1.4%
4 hrs	47	68.1%	5.6%
6 hrs	31	44.9%	8.6%
8 hrs	24	34.8%	3.1%

Table 10: Cars Remaining Parked on 15th Ave (2/24/12 from 8 am to 4 pm)			
Time	**Number of Parked Cars**	**Percentage Used of 37 Total Spaces**	**Percentage of Available Space**
2 hrs	35	94.6%	0%
4 hrs	28	75.7%	0%
6 hrs	23	62.2%	10.3%
8 hrs	17	45.9%	17.5%

Table 11: Cars Remaining Parked on 4th St (2/24/12 from 8 am to 4 pm)			
Time	**Number of Parked Cars**	**Percentage Used of 26 Total Spaces**	**Percentage of Available Space**
2 hrs	0	0%	88.9%
4 hrs	0	0%	61.5%
6 hrs	0	0%	88.0%
8 hrs	0	0%	89.7%

These data clearly indicate that on 6th and 15th there is parking congestion. Furthermore, there were 41 vehicles which did not move throughout the entire work day. Who is parking on the streets for so long is a difficult question to answer. One observation which could provide insight is that at the first observation of the study (8am) it appeared by the presence of snow on the windshields that almost all of these vehicles had been parked overnight. This suggests that most of them are owned by local residents.

There are several implications of these findings for what the potential impacts of parking restrictions on 15th and 6th would have. Time limits on parking would certainly prevent commuters or students from

parking on the streets all day and may open up more parking for residents. However, it would also keep residents from leaving their cars on the streets all day without paying a critical parking area fee. That being said, if the results of this study could be assumed to apply to other days, instituting parking limits of 4 hours would only impact 54 people who kept their cars parked past this period. When considering that there are almost 1,500 housing units directly adjacent to these streets this would mean an impact on roughly 3.6% of households if one car per household is assumed.

Summary and Purpose of Studies

Findings from all studies were central to the formulation of design features for the community engagement process. Without previous input from the community, the street designs presented may not have been consistent with neighborhood priorities and would therefore draw out the engagement process. In addition, without supporting data from the pedestrian and bike counts there would be a lack of empirical evidence to back up use of particular design features or principles. Project partners should be able to utilize these findings in addition to the final products of a plan for each street to advocate for an outcome that is beneficial to the community and in line with their expressed vision of a safer pedestrian environment around Riverside Plaza.

Current Site Conditions

The main reason for this project and the City of Minneapolis' planned repaving of 4th Street and 15th Avenue is that, as shown in the previous section, there are currently significant issues with the condition of the roads. There is even altogether lack of certain important safety features on some of them. Each of the three streets has different issues ranging from lack of marked pedestrian crossings on 6th Street to complete lack of a sidewalk on the north side of the intersection at 15th Avenue and 4th Street. The state of the streets has led to unsafe conditions for bikers and pedestrians which are further exacerbated by the fact that there is a considerable volume of pedestrian and bicycle traffic in the area. The rest of this section will summarize important aspects of the current conditions of the streets themselves, surrounding uses and site traffic, and parking.

Street Characteristics

The specific street segments that are proposed for improvement include: 4th St S from Cedar Ave S to 15th Ave S, 15th Ave S from 4th St S to 6th Ave S, and 6th St S from 15th Ave S to Cedar Ave S. The right of way dimensions can be seen in Table 12 (Bernard, 2012).

Table 12: Street Segments under Review
(all measurements shown in feet)

Street	Block Length	Right of Way	Roadway Width	Blvd. Space	Sidewalk	Next to Lot
4th St S (between 15th & 16th)	410	80	50	0 (north) 3 (south)	0 (north) 6 (south)	15 (north) 6 (south)
4th St S (between 16th & Cedar)	237	80	50	0	15 per side	0
15th Ave S	1266*	80	40	6 per side	8 per side	6 per side
6th St S	1132	80	40	6 per side	8 per side	6 per side

*includes extra segment until 7th St S

All of the road segments have identical 80 foot wide right of ways. 15th and 6th have identical dimensions in terms of roadway width, boulevard space, sidewalk space, and space next to a lot. 4th Street on the other hand varies throughout the segment. It also has a roadway that is 10 feet wider than 15th and 6th, and has sections next to the roadway that vary between having no width to having 15 feet of width. This includes a segment at the West end of the street with no sidewalk at all. 4th Street also includes a 5 foot bicycle lane on each side. These dimensions are more than adequate to meet recommended widths for urban streets from the American Association of State Highway and Transportation Officials (Access Minneapolis: Transportation and Action Plan, 2008). Thus there is ample space in the right of way for design modifications to all three street segments.

However, what the right of way dimensions do not adequately communicate is how useable and safe the streets are for different modes of transportation. Level of Service (LOS) is a common concept used to describe performance of streets in terms of their accommodation of different modes of travel on roadways (Landis, 1997, p. 1). Below is a table that shows the LOS of 4th Street, 15th Avenue, and 6th Street for pedestrians and bicyclists. Calculation of each street's LOS looks at aspects such as the

presence of sidewalks or bike lanes, levels of car traffic, and other indicators to arrive at a performance "grade". This report utilized a level of service calculator designed by the League of Illinois Bicyclists (League of Illinois Bicyclists). The model and figures used for the calculations can be found in Appendix A. Results of the calculations are illustrated in Table 13 below.

Table 13: Street Level of Service Grades		
Street section	**Pedestrian LOS**	**Bicycle LOS**
4th Street	B	C
15th Avenue	B	C
6th Street	A	D

These calculations indicate fairly positive ratings for pedestrians and lower ratings for bicyclists. The lower bicycle ratings are due primarily to the poor pavement condition, and the high percentage of on-street parking. Factors such as a wide sidewalk, wide buffer zone between the sidewalk and the road, and a relatively low traffic volume led to the higher pedestrian rating. However, the LOS calculator used does not take into consideration factors like the condition of the sidewalk, existence of crosswalks and crossing signals, lighting, or potential hazards in the walkways. Furthermore, the issues facing pedestrians on 4thStreet, 15thAvenue, and 6th Street are related to these problems that LOS does not include in its calculations.

Through gathering of previous public input and conducting on-site observations several problem areas were located. Particularly it was noted that there are limited facilities for pedestrian and bicyclist use of the roadways themselves. Furthermore, the sidewalks themselves are either in poor condition, are lacking completely in some sections, or have their effective width reduced by the presence of lights, power poles, and other barriers. Some of these conditions which can be seen in figures 1, 2, and 3 include uneven pavement and potholes, uneven sidewalks, missing sections, no bike lanes, crumbling curbs, lack of curb cuts and ramps, and a lack of crosswalks and traffic control devices.

Figure 3: No access ramp at crosswalk on 15th Ave.

Figure 4: No crosswalk or traffic signs at 15th and 6th intersection

Figure 5: Potholes and uneven pavement on 4th

Site Traffic and Surrounding Uses

The streets under review all tend to have a high volume of pedestrian and bicycle traffic relative to other residential streets (Transit for Livable Communities, 2011). This high volume is likely due to several elements in the community such as large multi-unit housing complexes like Riverside Plaza with approximately 1,300 units, and the Cedars with 238 units. The area also is home to highly used community facilities such as the Brian Coyle Community Center, one light-rail station with another under construction, several large institutions (University of Minnesota, Augsburg College, Fairview Hospital),

and various city bus lines. There is also high population of Islamic residents who regularly attend prayer times at local mosques in high numbers. This causes considerable pedestrian traffic at regular intervals throughout each day. Additionally, there is planned housing development with over 250 units scheduled to be constructed on 15th Ave S next to Riverside Plaza which will add even more congestion to the area. Forty-six percent of the residents in Cedar-Riverside do not have their own vehicle, which means they rely on walking, biking, and public transport to get around (Cedar Riverside Small Area Plan, 2008, p. 44). Moreover, Cedar Riverside employs more people than it has resident workers, which leads to a high volume of commuting in and out of the neighborhood (Cedar Riverside Small Area Plan, 2008, p. 45). There are also many bicyclists who cross through the area en route to other parts of the city or to the University because of its central location. This high volume of pedestrian traffic, lack of adequate safety facilities, and the fact that the site is one of the few places in Cedar-Riverside with free on street parking leads to many conflicts with motorists.

Parking Conditions

The community has voiced concerns about the congested parking along these street segments and the results of the parking turnover study support these perceptions. The City of Minneapolis Community Planning and Economic Development division has proposed diagonal parking on 4th St and timed parking restrictions on 15th and 6th. There is available parking on all three road segments. The exceptions include areas in front of driveways, near traffic control devices, by fire hydrants and within 5 feet of curb cuts per city of Minneapolis parking laws. There are also areas on 4th and 6th that do not allow parking during various hours on school days. On 6th and 15th the parking is free and unlimited except for a section in front of Mixed Blood Theater for handicap parking. Additionally, there is about 100 feet on 15th opposite Mixed Blood Theater in which no parking is allowed. On 4th St. metered parking is available.

Community Engagement Process

As mentioned in the project overview section, the main goal of this project was to create plans for 4th Street, 15th Avenue, and 6th Street that incorporated community input. From the beginning it was understood that this would mean conducting a design-oriented public engagement process. Utilizing a participatory process would ensure that the final designs produced from this project would reflect the desires of community stakeholders and be a powerful tool for advocating for community needs with the City of Minneapolis' planned repaving of the streets. This section documents the design, findings, limitations, and implications of the Street Improvement Project's engagement process.

Design of the Engagement Process

The method ultimately used for collecting public input was a design open house. Other methods such as extensive on street surveys, working through an iterative design process with a community board, or conducting a design charrette were all considered. However, these methods either would replicate previous public engagement efforts or did not seem feasible due to time limitations of the CHANCE student team and the intensity of those methods. With considerable public input already in hand on the issues facing the site it was decided that the engagement process would need to dig more into aspects of creating an overarching vision for the streets rather than creating a list of problems to be addressed. Thus, the design open house approach was selected as the best option.

A design open house is a less structured public meeting where materials outlining design alternatives are presented to attendees who can then give their input on those alternatives. Materials are often presented in a poster session style with various exhibits up around a space for attendees to examine. Using this format of public meeting allowed for presentation and exchange of ideas that had to do with how the streets could look and function like as a whole. Furthermore, using this approach eliminated the structured dialogue of usual public meetings and enabled participants to talk with CHANCE students or each other about the ideas being presented, if they were good or not, and how they might be altered to work better.

The "Our Streets" meeting, as it was called, consisted of three exhibits; 1) design features, 2) street design examples, and 3) parking policy examples. The design features exhibit consisted of eight specific matched pairs of design features. Voters were asked to choose which one in each matched pair they thought would be best to promote pedestrian and bicyclist safety around Riverside Plaza. Exhibit two presented examples of overall designs or visions. Three examples were given for each street and two for each intersection. Design examples generally went from minimal changes in example one to using more complete streets design features in each subsequent scenario. Participants were asked to select the design feature from each matched pair or design example for each street that they thought would best serve the needs of the neighborhood. Finally, Exhibit three presented descriptions of three parking policy options. Voters were asked to pick one example that they felt best serve the interests of auto users and pedestrian/bicyclist safety on the streets around Riverside Plaza. Materials used at the meeting including maps of street plans, textual descriptions of the maps, design feature pairings, and a voting booklet which can be found in Appendices E, F, G, and H.

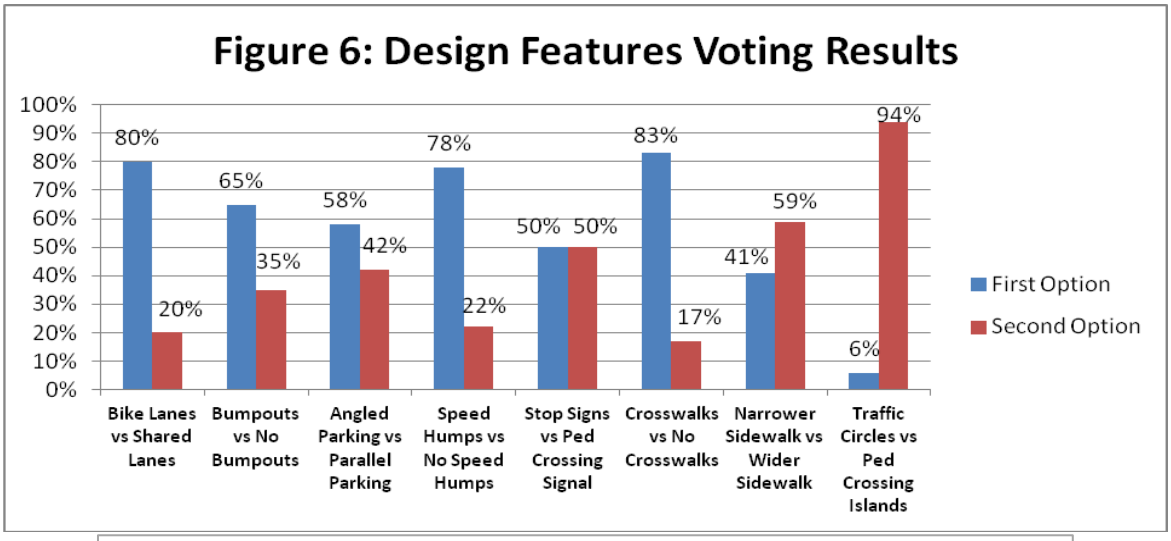
Engagement Process Results

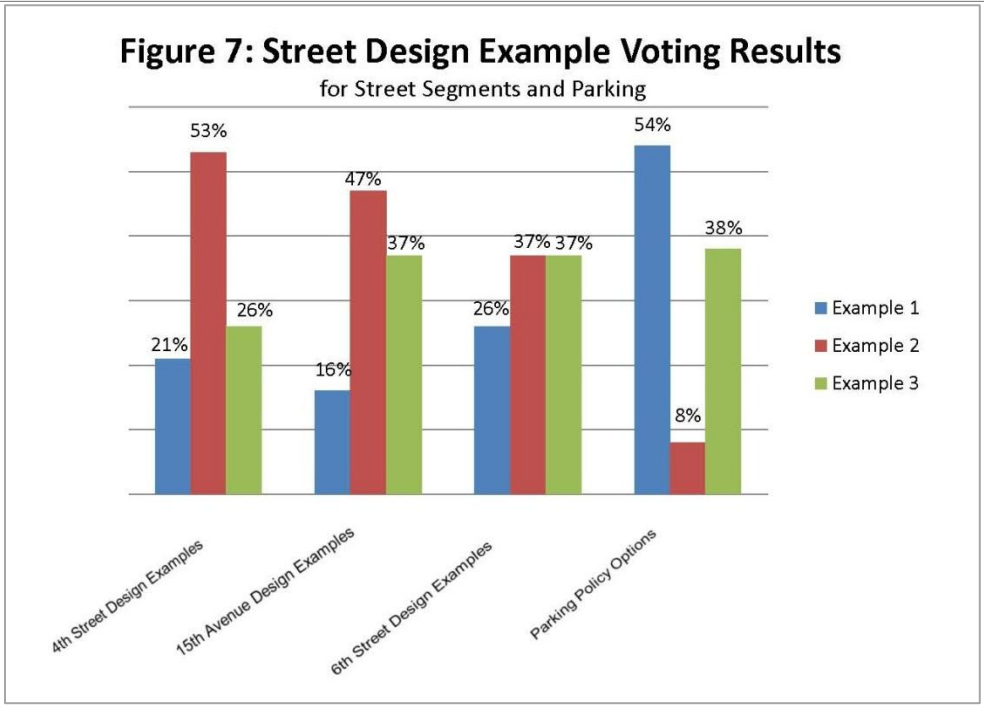
The "Our Streets" public meeting was held on Saturday, April 21 from 1 to 3 pm at the Brian Coyle Community Center in the Youth Room. A total of 30 people attended the meeting. Various community leaders were among those in attendance including City Councilor Cam Gordon, Joe Bernard from the

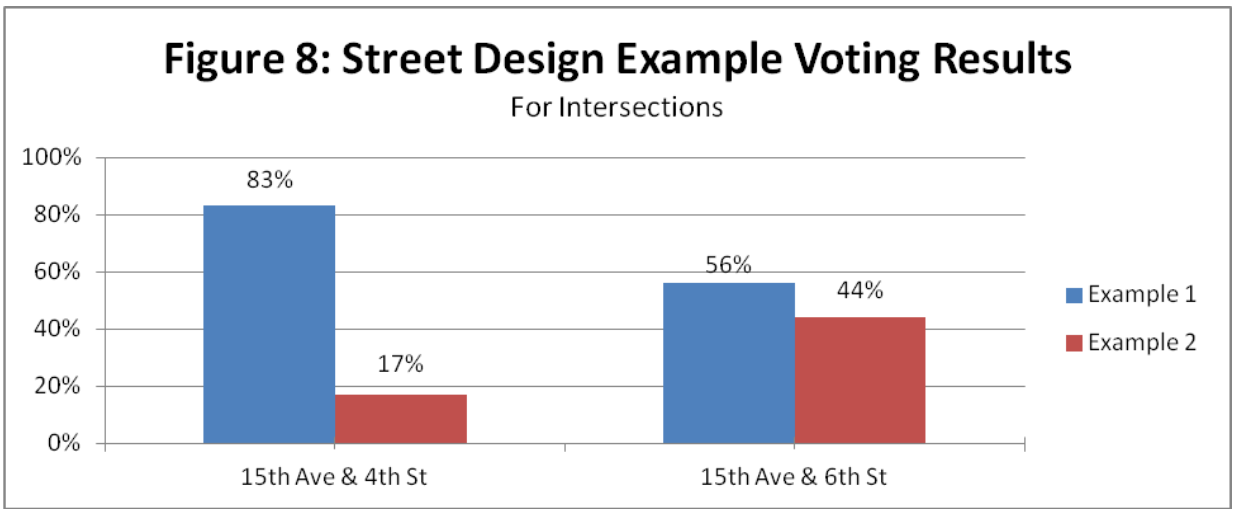
City of Minneapolis Community Planning and Economic Development Department, and Associate Dean of the Humphrey School of Public Affairs Greg Lindsey. A variety of members of the community attended as well including local residents, bicycle advocates, and concerned citizens.

Responses were received from 20 participants. While a higher turnout was hoped for, these responses provided valuable input as to the preferences of community stakeholders in regards to an overall vision of 4th Street, 15th Avenue, and 6th Street. Results of participant voting were recording into an Excel document and analyzed using a weighted scoring system (see Appendix D). The output this analysis provided determined the final street plans presented in the recommended street plans. The scoring process will be described further in the recommended street plans section

Raw results of participant voting are shown below in figures 6, 7, and 8.







Key Findings

The results in general show a preference for streets with improvements to safety features but that do not incorporate significant structural traffic slowing devices. Furthermore, while a slight preference was found for angled parking none of the design scenarios that incorporated it received a majority of the vote for the design examples. Among the examples of the street segments and intersections provided, there were no examples that stood out with a high percentage of the vote relative to the other examples. The one exception to this was design example one for the intersection of 15th and 4th which received 83% of votes. This design incorporated speed humps and pedestrian crossing signs as opposed to stop signs at the intersection. Other key findings included:

- Voters overwhelmingly chose Example 1 of the 15th and 4th intersection over Example 2. Example 1 involved the installation of speed humps and pedestrian crossing signs.
- 80% of voters chose bike lanes over shared lanes.
- 83% of voters chose crosswalks over no crosswalks.
- 94% of voters chose pedestrian crossing islands over traffic circles.
- Only 1 of the 13 votes in the parking policy section chose a two hour limit on parking.

Although the data presented above was valuable in determining design preferences of interested stakeholders it would be difficult to say that the results are representative of the entire neighborhood due to the relatively low turnout. Project partners may want to consider gathering additional input through the West Bank Community Coalitions Land Use Committee as the WBCC is the designated public participation organization for the Cedar-Riverside neighborhood. The materials created for the "Our Streets" meeting could be used to for this purpose.

Recommended Street Plans

The proposed street plans for 15th, 6th, and 4th incorporate moderate traffic calming and safety devices while maintaining existing parking around Riverside Plaza. The street plans shown here reflect a synthesis of previous public input and voting from the design open house meeting held on April 21st. This section will summarize how plans were selected based on stakeholder input, provide brief descriptions each street's plan, and discuss trade-offs of plan design features.

Selection of Street Plans

Selection of the final design was based on scores for design examples and features from voting at the open house. Preferred design features, which received 50% of participant vote or more, were given one point. Design examples were given more weight as voting on the examples was seen to reflect a preference for a more comprehensive vision of how the streets might actually look around Riverside Plaza. The example with the highest percentage of the vote was given 6 points, the next highest was given 4 points, and the lowest was given 2. The scores were then combined by adding points to each design example based on how many preferred design features it incorporated. Tables 14, 15, and 16 illustrate the scoring method for 6th Street (See Appendix D for all scores.

Table 14: 6th Street Example 2 Design Feature Scores

Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
Bumpouts	**65%**	**1**
Parallel Parking	42%	0
Speed Humps	**78%**	**1**
Crossing Signs	**50%**	**1**
Crosswalks	**83%**	**1**
8-Foot Sidewalks	**59%**	**1**
Crossing Islands	**94%**	**1**

Table 15: 6th Street Design Examples Scores

Design Example	Vote Percentage	Score
Example 1	16%	2
Example 2	**47%**	**6**
Example 3	37%	4

Table 16: 6th Street Total Input Scores

Example 1	5
Example 2	**12**
Example 3	11

In the event of a tie, which there were two, final selection was based on the preference expressed for the design examples again since this was seen to reflect a more comprehensive vision for the neighborhood. However, there was one tie between two scenarios for both their overall scores and the preference expressed by open house participants. Both example 2 and example 3 for 15th Avenue tied. In this case, the final design proposed depended upon which scenario would likely have the lowest construction cost. The selected designs for each street and intersection are shown below in Table 17.

Table 17: Final Selected Design Scenarios		
Street/Intersection	**Selected Example**	**Design Features Included**
4th Street	Example 2	Bike Lanes, Wider (8 Foot) Sidewalks
15th Avenue	Example 2	Stop Signs, Bike Lanes, Bumpouts
6th Street with $30,000 Constraint	N/A	Crosswalks, Ped Crossing Signals, Shared Bike/Traffic Lanes (Sharrows)
6th Street No Cost Constraint	Example 2	Bumpouts, Ped Crossing Islands, Crosswalks, Ped Crossing Signals, Shared Bike/Traffic Lanes (Sharrows)
Intersection of 15th & 6th	Example 1	Bumpouts, Stop Signs, Crosswalks
Intersection of 15th & 4th	Example 1	Bumpouts, Speed Humps, Ped Crossing Signs, Crosswalks
Parking Policy	Example 1	Current Parking Restrictions

Selected Street Designs Descriptions

Designs for each street and intersection are briefly described below. 6th Street had two proposed plans (one to fit a $30,000 construction cost constraint) based on desired deliverables of community partners. Following the descriptions are three maps which provide a visual representation of the street plans described below. The first map shows the recommended plan for 15th Avenue and 4th Street while the second two maps give the two plans for 6th street.

4th Street South Plan

The selected plan for 4th street utilizes design example 2 from the design open house. This plan adds wider sidewalks into the current street design and maintains parallel parking and separate bike lanes. The design had a tied total score but was the preferred overall scenario. Overall this is a minimal proposed change to the street compared to other proposed plans.

15th Avenue South Plan

The selected plan for 15th Avenue utilizes design example 2 for the street from the design open house. This plan adds bumpouts and separate bike lanes to the existing street design and maintains parallel parking, stop signs at the mid-block intersection, and crosswalks. This plan would widen the street to 50 feet. On the whole 15th Avenue did not have design and traffic issues of other streets.

6th Street South Plan Under $30,000 Constraint

This design has a construction cost under a $30,000 constraint reflecting the current amount of money set aside for improvements to 6th Street by Sherman & Associates. Some features, but not all, from design example 2 are incorporated into the plan. Crosswalks, pedestrian actuated crossing signs, and shared traffic/bike lanes are added to the current streetscape. Crosswalks and pedestrian actuated crossing signs are located at 6th Street's intersections with 16th Avenue and old 17th Avenue which are sites of frequent pedestrian crossings that currently have no signage or crosswalks.

6th Street South Plan no Constraint

This design for 6th Street incorporates all of the features from 6th Street design example 2. This includes all features of the previous 6th Street plan plus bumpouts and pedestrian crossing islands at pedestrian crossings. These features would eliminate some parking but, serve to further slowdown oncoming traffic and increase pedestrian safety.

Intersection of 15th & 4th Plan

The proposed design for the intersection of 15th Avenue S and 4th Street S, utilizes 15th & 4th design example 1. This scenario widens the current road, adds a sidewalk along the north/western side of the street, pedestrian crossing signs, bumpouts, crosswalks, and speed humps. These changes would alleviate current issues for pedestrians by reducing the need for crossing the street at this intersection and increasing safety for when crossings do occur by slowing down traffic.

Intersection at 15th & 6th Plan

The design for the Intersection of 15th Avenue and 6th Street utilizes 15th & 6th design example 1. The design adds stop signs for traffic on 15th, crosswalks at all crossing points, as well as bumpouts. These features are designed to increase pedestrian visibility and provide time for pedestrians to cross by requiring oncoming traffic to stop from all directions.

Parking Plan for All Streets

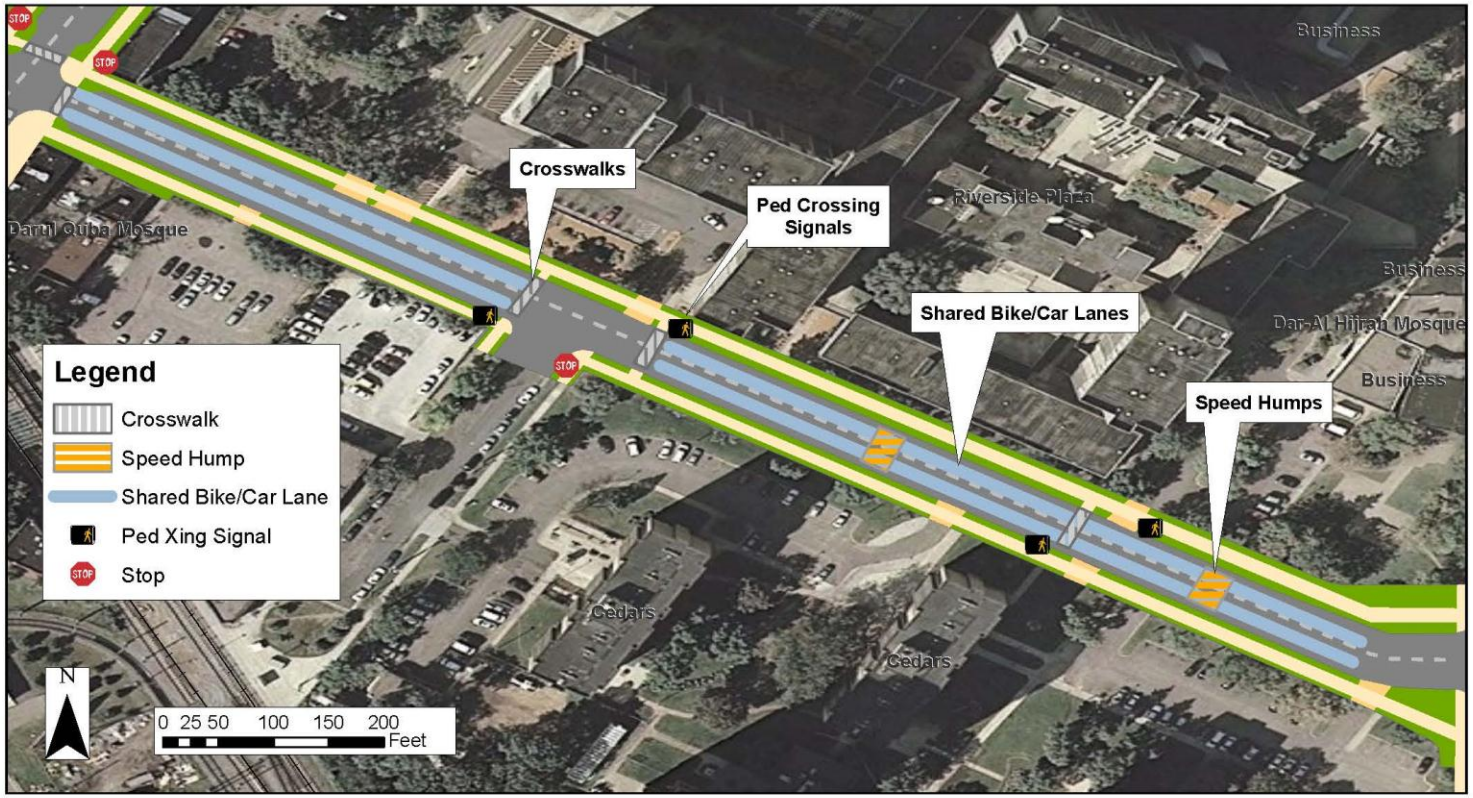
A narrow margin of participants at the "Our Streets" meeting voted for the no build option meaning all streets would be left with their current parking regulations. However, a significant minority (43%) voted for 4-hour parking limits on 15th and 6th Street. This measure would do much to alleviate problems of parking turnover and have minimal impacts in terms of the percentage of the local population affected. Thus while based on participant voting it is recommended that project partners advocate for no changes to current parking restrictions, the 4-hour parking restrictions should also be considered.

Map 2: 4th Street and 15th Avenue

Map 3: 6th Street with Constraints

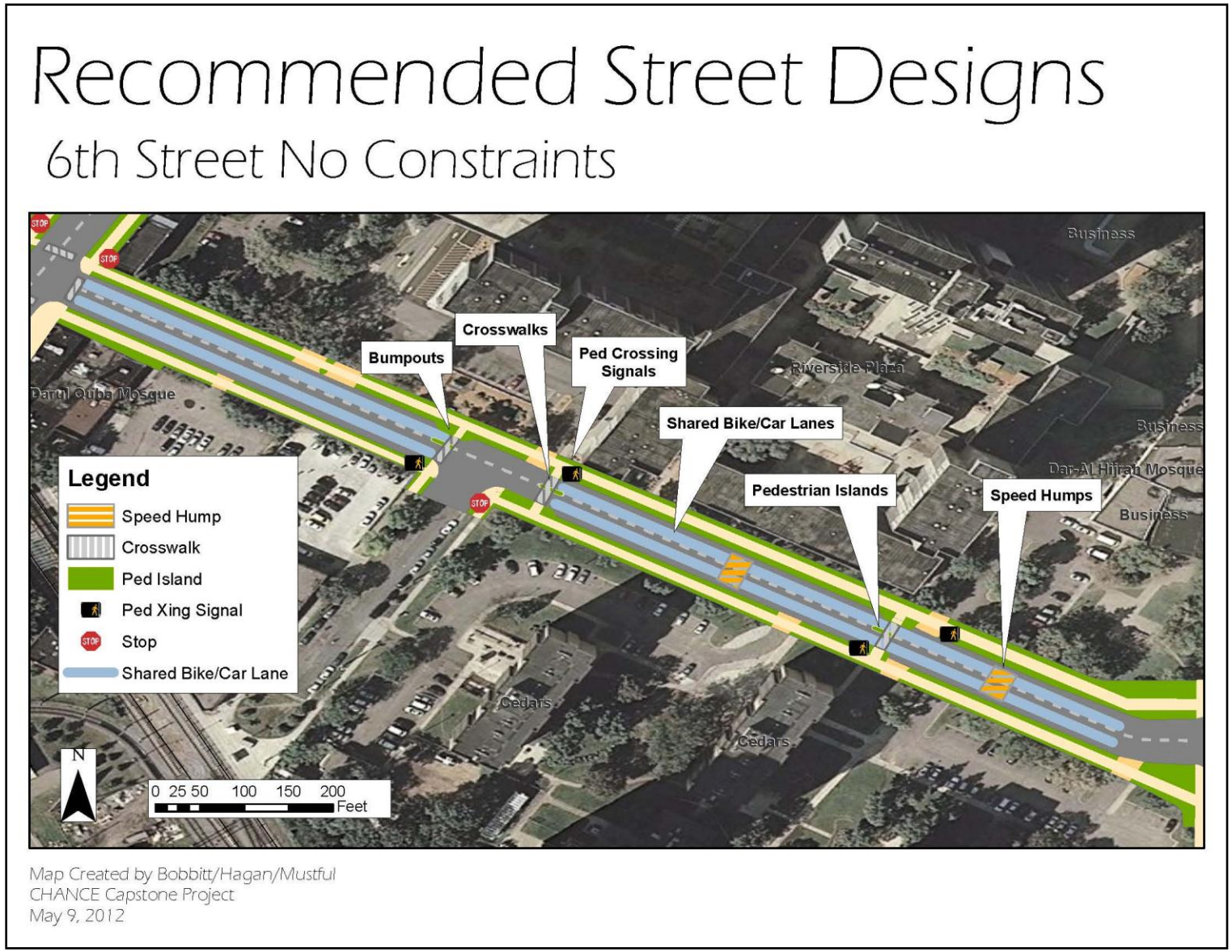
Recommended Street Designs

6th Street with Constraints



Map Created by Bobbitt/Hagan/Mustful
CHANCE Capstone Project
May 9, 2012

Map 4: 6th Street with No Constraints



Recommended Street Design Trade-offs and Alternatives

While the recommendations for street designs described above are based on research on effective methods for creating safer streets, empirical evidence of the conditions in the area, and the expressed preference of residents, they are not the only options to achieve project goals. Furthermore each of the plans have different trade-offs they are making in terms of balancing the needs of pedestrians, bicyclists and automobile users. There are a wide range of design options available to the neighborhood to improve pedestrian and bicyclist safety on the streets. If it is found that the final designs from this project do not fit with community needs, stakeholders could still choose another design that may be more appropriate. This section provides a brief discussion of the trade-offs of design features used in the recommended plans and suggests potential alternatives for project partners to consider. Design features have been categorized by their function into bicycle facilities, traffic calming devices, street signage, and parking options.

Bicycle Facilities

Separate bicycle lanes and shared bike/traffic lanes, also called sharrows, are two methods used to incorporate bicycle traffic safely into a street. Bike lanes designate a portion of the roadway by using striping, signing, and pavement marking for the preferential or exclusive use by bicyclists (Pedestrian and Bicycle Information Center, 2012). Sharrows on the other hand are bicycle symbols carefully placed to guide bicyclists to the best place to ride on the road, avoid car doors and remind drivers to share the road with cyclists (Washington Department of Transportation, 2012). Bike lanes were utilized for the designs of 15th Avenue and 4th Street while the 6th Street designs called for sharrows. The pros and cons of each design feature are listed below.

Table 18: Advantages and Disadvantages of Bike Facilities

Design Feature	Cost of Installation Estimate	Advantages	Disadvantages
Bike Lanes	N/A	-Separates car and bike traffic -Movement of motorists and cyclists more predictable	-Requires wider streets -Puts bikes into the "door zone" of parked cars
Sharrows	N/A	-Reminds motorists to share the road -Works well on narrow streets -Bikes slow down vehicle traffic which creates a safer pedestrian environment	-Drivers have low familiarity with sharrows

The main design alternative to bike lanes and sharrows is called a cycletrac which is a dedicated bike path located next to the sidewalk and protected from the street by a curb. This design feature totally separates cyclists from street traffic and narrows the street which generally makes car traffic slow down.

Traffic Calming Devices

Several traffic calming devices were used in the selected plans including speed humps, pedestrian crossing islands, and bumpouts. Traffic calming devices function by either physically forcing traffic to slow down as with speed bumps or by visually narrowing the road which causes motorists to slow down. This creates a safer environment for pedestrians and bicyclists. Speed Humps are paved humps that are about 3 to 4 inches in height at their center and extend the full width of the street (Federal Highway Administration, 2012). Bumpouts, also called curb extensions, are a widening of sidewalk access ramps at intersections which reduce the roadway width from curb to curb. Pedestrian crossing islands are raised islands placed in the center of the street at intersection or midblock locations to help protect crossing from motor vehicles (Federal Highway Administration, 2012).

Table 19: Advantages and Disadvantages of Traffic Calming Devices

Design Feature	Cost of Installation Estimate*	Advantages	Disadvantages
Speed Humps	$2,000	-Reduces traffic speeds -Relatively inexpensive	-Requires wider streets -Puts bikes into the "door zone" of parked cars
Pedestrian Crossing Islands	$10,000-$30,000	-Reduces oncoming traffic speeds -Protects pedestrians mid-crossing	- Reduces available space for parking -Can cause bicycle/motorist conflicts -Relatively expensive to create
Bumpouts	$2,000-$20,000	-Reduces street crossing distance -Increases visibility of pedestrians -Slows oncoming traffic	-Can be costly to create -Reduces available space for parking -Reduces the width of the street for motorists and bicyclists

*Cost estimates come from the Federal Highway Administration

There are many different designs for traffic calming devices in planning literature. The one main alternative explored through this project was the use of traffic circles. Traffic circles are large, circular, raised islands located at the intersection of an arterial street with one or more crossing roadways and may take the place of a traffic signal (Federal Highway Administration, 2012). The main advantage of traffic circles is that the reduce traffic speeds which increases pedestrian safety while also improving overall traffic flow through the intersection. However traffic circles are expensive to create and require more space than a regular intersection design taking away space for parking.

Street Signage

Three types of street signage were used in the recommended plans to improve safety including stop signs, pedestrian crossing signals, pedestrian crossing signs, and crosswalks. Stop signs are the common sign used to notify drivers that they must stop before proceeding. Stop signs were proposed for use at the intersection of 15th and 6th. Pedestrian crossing signals are a flashing sign indicating to drivers that

pedestrians are crossing the street and have the right of way. Flashing is actuated by pedestrians by pressing a button on the sign before they cross. Pedestrian crossing signs have no flashing light to indicate pedestrian presence but simply remind drivers to be aware for and yield to pedestrians. Crosswalks are markings in the street to indicate locations for pedestrians to cross and signify to drivers to yield to them. These types of features generally improve safety by reminding motorists to yield to pedestrian traffic or by forcing them to stop completely and yield.

Table 20: Advantages and Disadvantages of Street Signage

Design Feature	Cost of Installation Estimate	Advantages	Disadvantages
Stop Signs	N/A	-Inexpensive to install -Requires vehicles to stop and yield to pedestrians	-Slows automobile travel through streets -Could create congestion on neighborhood streets -Requires vehicles to stop even if no pedestrians are present
Pedestrian Crossing Signals & Signs	N/A	-Very visible to motorists -Prevents unneeded stopping of motorists -Provides a safe crossing time for pedestrians when they are there	- Reduces available space for parking -Can cause bicycle/motorist conflicts -Relatively expensive to install
Crosswalks	$100 for striped crosswalk $300 for ladder crosswalk	-Warns motorists of potential pedestrians crossing the street -Requires motorists to yield to pedestrians -Creates predictable crossing points	-Requires pedestrians to cross only at designated areas of the street -Could go unnoticed by drivers if not accompanied by appropriate signage such as stop signs

Alternatives for street signage in terms of other kinds of signs are somewhat limited. However one option to consider in this vein would be posting reduced speed limits particularly on 6th Street and 15th Avenue as these see more residential traffic. Posting and enforcing lower traffic speeds would have two distinct advantages. First, slower traffic would create a safer pedestrian environment and likely prevent accidents. Second if there were accidents, reduced automobile speed would improve survival rates and reduce severity of injuries.

Parking Options

Parallel parking was the design option selected for each of the recommended street plans based on overall participant voting. This is also what currently exists on all of the streets around Riverside Plaza.

Table 21: Advantages and Disadvantages of Parallel Parking

Design Feature	Cost of Installation Estimate	Advantages	Disadvantages
Parallel Parking	N/A	-Works well for narrow streets -Preserves space for separate bicycle & traffic lanes -More space for traffic lanes or sidewalks.	-Fewer parking spaces available -Higher chances of "dooring" passing bicyclists -Cyclists difficult to see when pulling out of parking spots

However, when asked to vote on a preference simply between parallel parking and back-in angled parking as an alternative the latter received a majority of the vote. Back-in angled parking is angled on-street parking in which the driver must back the vehicle into the parking spot leaving the front of the car facing the middle of the street.

The proposed design plans generally utilize a complete streets approach to improving pedestrian and bicyclist safety. As stated earlier there are many alternatives to this approach or even the design features used. An alternative approach to complete streets is called shared space. The concept behind shared space is to create an environment that forces all users; pedestrians, bicyclists, and motorists, to negotiate passage through the space via eye contact and person to person contact (Toth 2009). In shared space designs all traffic control devices such as signals and stops signs, all markings such as crosswalks, and all signing have been removed (Toth 2009). Shared space is an emerging approach to urban design that has been experimented with throughout Europe. It has been shown to reduce vehicle speeds and crashes (Toth 2009). While the design was not ultimately proposed due to perceptions of political feasibility, Minneapolis staff did identify the study area as a prime candidate for application of shared space designs. Appendix J has a more in depth description of shared space concepts.

Conclusions and Recommendations

The findings presented in this report strongly support improving street conditions for pedestrians and bicyclists on the streets around Riverside Plaza. The area has been shown to have high rates of pedestrian traffic for residential streets, particularly along 6th Street and 15th Avenue. Currently a lack of adequate design features and poor conditions of facilities are creating a generally unsafe environment for all users and particularly for pedestrians and bicyclists. Furthermore, there is a significant amount of public concern about issues of safety particularly along 6th Street. Even the addition of some minimal improvements like stop signs and crosswalks would do much to improve safety in the area.

Furthermore, while the City of Minneapolis is planning on improving the streets to some extent their plans do not meet the level of improvement shown to be preferred by community stakeholders. Table 22 below summarizes the differences between the design features proposed in the plan produced by the City's Department of Public and the community-produced plan of this report.

Table 22: Comparison of Design Features from Community and City Street Plans

Street Segment	Department of Public Works Plan design features	Community Approved Plan design features
4th Street	Bike lanes, Parallel Parking	**Bike Lanes, Parallel Parking**
15th Avenue	Bike Lanes, 6ft Sidewalk, Widen Roadway to 50ft	**Bike Lanes, 8ft Sidewalk, Widen Roadway to 50ft**
6th Street	Repave from 15th Avenue to 16th Avenue	**Crosswalks, Ped Crossing Signals, Bumpouts, Ped Crossing Islands, Bike Sharrows**
Intersection of 4th and 15th	Widen corner, Add sidewalk, bumpouts	**Widen Corner, Add Sidewalk, Bumpouts, Ped Crossing Signs, Speed Humps**
Intersection of 6th and 15th	Bumpouts	**Bumpouts, Crosswalks, Stop Signs**

Below is a summary of recommendations on how to finalize the planning process and improve safety conditions on 4th Street, 15th Avenue, and 6th Street based off information from the body of this report.

Recommendation 1: ***Evaluate plans in an open public meeting facilitated by the West Bank Community Coalition.*** The WBCC is the designated public participation organization for the Cedar-Riverside Neighborhood and taking the plans through this process would legitimize the neighborhood's support. This action would make this report and the plans in them effective advocating tools for community interests. Also, if the plans are not found to fit community needs the current designs could be reworked through an iterative editing process

Recommendation 2: ***If the plans are accepted by the WBCC and the community, it is recommended that the WBCC meet with the City of Minneapolis in order to further discuss the proposed plans.*** If the plans are approved by the WBCC, they will serve as a useful tool to advocate for neighborhood needs.

Recommendation 3: ***Based on the findings of the pedestrian and bicycle traffic counts, it is recommended that the City of Minneapolis conduct a traffic study on 6th street to determine if the second federal warrant for a traffic light is met.*** Through the study it was found that the first criterion was met. If the second criterion is met the City should consider installing a traffic light at 6th Street and 16th Avenue due to the high pedestrian and automobile traffic there.

Bibliography

Access Minneapolis: Transportation and Action Plan. Department of Public Works, City of Minneapolis, Minneapolis: City of Minneapolis, 2008, 5-3.

Ahsan, Nahila, Brandon Baumbach, Jen Borger, and Eriks Dunens. "Cedar-Riverside Neighborhood Priority Planning: A Collection of Community Perspectives." Prepared for the West Bank Community Coalition (WBCC) and the Cedar Riverside Neighborhood Revitalization Program (CRNRP). Humphrey School of Public Affairs capstone project 2012.

Bernard, Joe. *Senior Planner City of Minneapolis* (February 2012).

Cedar Riverside Small Area Plan. Community Planning and Economic Development, City of Minneapolis, Minneapolis: City of Minneapolis, 2008, 44.

Clark, Emma. "Shared Space: The Alternative Approach to Calming Traffic." *Traffic Engineering and Control*, September 2006.

Department of Community Planning and Economic Development. "Community Walkabout." City of Minneapolis, October 2011.

Department of Public Works, City of Minneapolis. *Non-Motorized Traffic Counts: Operations and Estimation Methodology.* Public Works, City of Minneapolis, Minneapolis: Department of Public Works, 2012.

Federal Highway Administration. "Manual on Uniform Traffic Control Devices." *Federal Highway Administration.* n.d. http://mutcd.fhwa.dot.gov/htm/2009/part4/part4c.htm#section4C01 (accessed January 20, 2012).

Federal Highway Administration. "Proven Safety Countermeasures: Medians and Pedestrian Crossing Islands in Urban and Suburban Areas." n.d.

Federal Highway Administration. *Selecting Pedestrian Safety Improvements.* 2012. http://safety.fhwa.dot.gov/saferjourney/library/matrix.htm (accessed May 4, 2012).

Landis, Bruce. "Real-Time Human Perceptions: Toward a Bicycle Level of Service." *Transportation Research Record* 1578, no. 1 (1997).

League of Illinois Bicyclists. "BLOS/PLOS Calculator Form." *Sustainable Cities Institute.* n.d. http://www.sustainablecitiesinstitute.org/view/page.basic/frameset/feature.calculator/Calculator_Bicycle_Level_of_Service (accessed February 10, 2012).

Pedestrian and Bicycle Information Center. *Bike Lanes.* 2012. http://www.bicyclinginfo.org/engineering/facilities-bikelanes.cfm (accessed May 4, 2012).

Toth, Gary. "Where the Sidewalk Doesn't End: What Shared Space has to Share ." *Placemaking Blog*, August 17, 2009.

Transit for Livable Communities. *2007-2010 Fall Two Hour Pedestrian Counts by Location ID.* March 7, 2011

Washington Department of Transportation. *seattle.gov.* 2012. http://www.seattle.gov/transportation/sharrows.htm (accessed May 4, 2012).

White, Jim. *Traffic Count Report* (March 14, 2012).

Appendix A: Level of Service Measurements

The bicycle level of service model as derived by the League of Illinois Bicyclists which is used to calculate BLOS grades is as follows:

Bicycle LOS = 0.507 ln(Vol15/L) + 0.199 SPt(1+10.38HV)2+ 7.066(1/PR5)2–0.005 We2+ 0.760

Vol15= volume of directional traffic in 15 minute time period

L = total number of through lanes

SPt= effective speed limit = 1.1199 ln(SPp-20) + 0.8103, SPpis posted speed

HV = percentage of heavy vehicles

PR5= FHWA's 5-point surface condition rating (5=best)

We= average effective width of outside through lane = Wt+ Wl-Σ Wr

Wt= total width of outside lane and shoulder/parking pavement

Wl= width of paving from outside lane stripe to pavement edge

Σ Wr= width reduction due to encroachments in outside lane

The Pedestrian Level of Service Model as derived by the League of Illinois Bicyclists which is used to calculate PLOS grades is as follows:

Pedestrian LOS = -1.227 ln(Wol + Wl + fP x %OSP + fb x Wb + fSW x WS) + 0.009 (Vol15/L) + 0.0004 SPD2+ 6.046

Wol= width of outside lane

Wl= width from outside lane stripe to pavement edge (shoulder, parking, bike lanes)

fP= on-street parking effect coefficient

%OSP = percent of segment with on-street parking

fb= buffer area barrier coefficient

Wb= buffer width (between edge of pavement and sidewalk)

fSW= sidewalk presence coefficient

WS= width of sidewalk

Vol15= volume of directional traffic in 15 minute time period

L = total number of through lanes

SPD = average running speed of traffic

BLOS and PLOS for 4th Street Segment	
Lanes per direction	1
Outside lane width	12 ft
Paved shoulder/bike lane/marked parking width	13 ft
Bidirectional ADT traffic volume	1500 (veh/day)
Posted speed limit	30 mph
Heavy vehicle percentage	2%
FHWA's pavement condition rating	2.5
% of segment with occupied parking	90%
% of segment with sidewalks	66%
Sidewalk width	15 ft
Sidewalk buffer/parkway width	0 ft
Buffer/parkway avg tree spacing	40 ft

	Score	Level-of-service	Compatibility Level
BLOS:	3.31	C (2.51-3.50)	Moderately High
PLOS:	1.85	B (1.51-2.50)	Very High

BLOS and PLOS for 15th Ave South	
Lanes per direction	1
Outside lane width	12 ft
Paved shoulder/bike lane/marked parking width	8 ft
Bidirectional ADT traffic volume	2000 (veh/day)
Posted speed limit	30 mph
Heavy vehicle percentage	2%
FHWA's pavement condition rating	2.5
% of segment with occupied parking	75%
% of segment with sidewalks	80%
Sidewalk width	8 ft
Sidewalk buffer/parkway width	6 ft
Buffer/parkway avg tree spacing	40 ft

	Score	Level-of-service	Compatibility Level
BLOS:	3.24	C (2.51-3.50)	Moderately High
PLOS:	1.56	B (1.51-2.50)	Very High

BLOS and PLOS for 6th Street S	
Lanes per direction	1
Outside lane width	12 ft
Paved shoulder/bike lane/marked parking width	8 ft
Bidirectional ADT traffic volume	4000 (veh/day)
Posted speed limit	30 mph
Heavy vehicle percentage	2%
FHWA's pavement condition rating	2.5
% of segment with occupied parking	90%
% of segment with sidewalks	100%
Sidewalk width	8 ft
Sidewalk buffer/parkway width	6 ft
Buffer/parkway avg tree spacing	40 ft

	Score	Level-of-service	Compatibility Level
BLOS:	3.95	D (3.51-4.50)	Moderately Low
PLOS:	1.4	A (below 1.50)	Extremely High

Appendix B: Pedestrian & Bike Count Form

CHANCE 15th Avenue S, 6th Street S, & 4th Street S Street Design Project
BICYCLIST/PEDESTRIAN COUNT FORM SPRING 2012

Name: _____ Location: _____ Site # _____

Date: _____ Time Start: _____ Finish: _____

Cedar-Humphrey Action for Collaborative Neighborhood Engagement

Time (period)	Bicyclists		Child	Sidewalk Riding	Pedestrians		Child	Asst	Unauthorized Crossing
	Male	*Female*			*Male*	*Female*			
4:00 - 4:15 (1)									
4:15 - 4:30 (2)									
4:30- 4:45 (3)									
4:45- 5:00 (4)									
5:00 - 5:15 (5)									
5:15 - 5:30 (6)									
5:30- 5:45 (7)									
5:45- 6:00 (8)									

See Instructions on Back of count sheet Before Starting. Comments/observations: Describe any factors that may have affected your count (rain, vehicle crash at site, road construction, snow or ice on travel way etc.)

Counter Instructions

Plan to arrive at your count location at least **10 minutes in advance** to get organized (park, lock bike, survey the situation). The count map identifies the screen line location and suggested observation location. Counters may wish to choose a different point of observation due to the weather and light conditions, but try to avoid this unless absolutely necessary. It is acceptable to use a different point of observation **provided the screen line is the same**. Be sure to make a note if the point of observation is changed.

Arriving a the count location

- Begin count at exactly 4:00 PM and note the time on the count sheet.
- Make a note of weather conditions including temperature, if known
- Additionally note any conditions on the sidewalk or roadway that may impact travel including:
  - Pot holes and general disrepair
  - Snow or ice in the travel way
  - Barriers or obstructions (i.e. temp construction, illegally parked car)

Please return completed count sheet to:

Brian Coyle Community Center

420 15th Ave. S

Minneapolis, MN 55454

Conducting the count

Use the count sheet to record every pedestrian and bicyclist **each time they cross the screen line**

Record a mark for each individual bicyclist-male/female or pedestrian-male/female in the appropriate column.

What if gender is not clear? **-** There is always the possibility that a person's gender will be unclear from simple observation, if unsure use male as a default and make a note of the number of uncertain gender occurrences in the notes at the bottom of the page.

Record **an additional mark** for other attributes (columns shaded in gray) as follows:

- **Child** – Record additional mark for any individual appearing to be under 16 (use best judgment).
- **Sidewalk Riding** – At locations where applicable additional mark for cyclists riding on the sidewalk on either side of the street.
- **Asst** – Record additional mark for individuals using any sort of assistive device including but not limited to; walkers, canes, wheelchairs (automatic or manual) crutches, Segways, skateboards, in-line skates (all variations), strollers, and/or being carried by another pedestrian (such as a small child).
- **Unauthorized Crossing** – Record additional mark for every pedestrian that crosses the street **not in a designated crosswalk** within your designated observation area.

Counting Bicycles

Emphasis is on each person on a bicycle not the number of actual bikes. Count each person crossing the screen line on a bicycle, this includes small children in seats, children in a trailer, individuals riding in addition to the cyclist.

Counting Pedestrians

The counter should record every person each time the screen line is crossed as either a male or female pedestrian and record an additional mark for child or Asst or both when applicable. Jay walking data will be observed within an observation area. Record every person each time they cross the street **not in a designated crosswalk.**

Space for additional Comments/Notes:

THANK YOU!

Appendix C: Light Rail User Survey

CHANCE Street Design Project
Pedestrian and Bicyclist Survey

The University of Minnesota CHANCE group is gathering feedback on local pedestrian and bicycle issues and concerns in the Cedar-Riverside neighborhood. Your input will help the city design safer and more accommodating streets and facilities. All of your answers will be kept confidential and your participation is totally voluntary.

1. In which area do you currently reside?
   - ☐ Cedar-Riverside Neighborhood
   - ☐ Another Minneapolis Neighborhood
   - ☐ Outside of Minneapolis

2. What is your age?
   - ☐ 10-19 ☐ 20-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60 and older

3. How often do you walk on the streets around Riverside Plaza?
   - ☐ 5 + times per week
   - ☐ 3 – 4 times per week
   - ☐ At least once per week
   - ☐ A few times per month
   - ☐ Almost never

4. For what purpose do you walk through the neighborhood? (mark all that apply)
   - ☐ Fitness or recreation
   - ☐ Travel to and from home/work
   - ☐ Travel to other destinations (entertainment, church, etc…)
   - ☐ Social visits
   - ☐ Other_____

5. What are the biggest factors that discourage you from walking around Riverside Plaza? (Please Rank 1-5)
   - ___ Lack of sidewalks and trails
   - ___ Traffic
   - ___ Unsafe road crossings
   - ___ Poorly maintained sidewalks
   - ___ Aggressive motorist behavior

6. What actions do you think need to be taken to increase pedestrian safety? (Please rank 1-5)
   - ___ Crosswalk improvements
   - ___ Speed bumps
   - ___ Repair existing sidewalks
   - ___ More street lighting
   - ___ Increased signage (stop signs, etc.)

(Continued on the Next Page)

7. How often do you bike on the streets around Riverside Plaza?
   - ☐ 5 + times per week
   - ☐ 3 – 4 times per week
   - ☐ At least once per week
   - ☐ A few times per month
   - ☐ Almost never

8. For what purpose do you bike through the neighborhood? (mark all that apply)
   - ☐ Fitness or recreation
   - ☐ Travel to and from home/work
   - ☐ Travel to other destinations (entertainment, church, etc…)
   - ☐ Social visits
   - ☐ Other_____

9. What are the biggest factors that discourage you from biking in Cedar-Riverside? (Please Rank 1-5)
   - ___ Lack of bike lanes
   - ___ Traffic
   - ___ Bicycle unfriendly roadways
   - ___ Unsafe intersections
   - ___ Aggressive motorist behavior

10. What actions do you think need to be taken to increase bicyclist safety?

(Please rank 1-5)
   - ___ More bike lanes
   - ___ Speed bumps
   - ___ Repair streets (remove potholes)
   - ___ More street lighting
   - ___ Increased signage (stop signs, etc.)

11. Please rank the importance of the following transportation improvements (1-6).
   - ___ Wider roads
   - ___ Wider sidewalks
   - ___ Traffic calming devices (bumpouts, speed bumps, etc.)
   - ___ More trees and other vegatation between sidewalk and road
   - ___ Mid-block crossings
   - ___ More bike lanes

12. Once the new LRT Station is completed, how often do you expect to use it?
   - ☐ 5 + times per week
   - ☐ 3 – 4 times per week
   - ☐ At least once per week
   - ☐ A few times per month
   - ☐ Almost never

Appendix D: "Our Streets" Meeting Vote Scoring Matrices

4th Street Scoring Analysis		
Example 1: Matched Pair Scores		
Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
No Bumpouts	35%	0
Angled Parking	58%	1
No Speed Humps	22%	0
Stop Signs	N/A	0
No Crosswalks	17%	0
6-Foot Sidewalks	41%	0
Crossing Islands	N/A	0
Example 2: Matched Pair Scores		
Design Features	Vote Percentage	Score
Separate Bike Lanes	80%	1
No Bumpouts	35%	0
Parallel	42%	0
No Speed Humps	22%	0
Stop Signs	N/A	0
No Crosswalks	17%	0
8-Foot Sidewalks	59%	1
Crossing Islands	N/A	0
Example 3: Matched Pair Scores		
Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
Bumpouts	35%	0
Parallel Parking	42%	0
No Speed Humps	22%	0
Crossing Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	94%	1
Input Scores for 4th Street Design Examples		
Design Example	Vote Percentage	Score
Example 1	21%	2
Example 2	53%	6
Example 3	26%	4
Total Input Scores		
Example 1	3	
Example 2	8	
Example 3	7	

6th Street Scoring Analysis		
Example 1: Matched Pair Scores		
Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
No Bumpouts	35%	0
Parallel Parking	42%	0
No Speed Humps	22%	0
Stop Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	N/A	0
Example 2: Matched Pair Scores		
Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
Bumpouts	65%	1
Parallel Parking	42%	0
Speed Humps	78%	1
Crossing Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	94%	1
Example 3: Matched Pair Scores		
Design Features	Vote Percentage	Score
Separate Bike Lanes	80%	1
Bumpouts	65%	1
Parallel Parking	42%	0
Speed Humps	78%	1
Crossing Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	94%	1
Input Scores for 6th Street Design Examples		
Design Example	Vote Percentage	Score
Example 1	16%	2
Example 2	47%	6
Example 3	37%	4
Total Input Scores		
Example 1	4	
Example 2	11	
Example 3	10	

15th Avenue Scoring Analysis		
Example 1: Matched Pair Scores		
Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
No Bumpouts	35%	0
Parallel Parking	42%	0
No Speed Humps	22%	0
Stop Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	N/A	0
Example 2: Matched Pair Scores		
Design Features	Vote Percentage	Score
Separate Bike Lanes	80%	1
Bumpouts	65%	1
Parallel Parking	42%	0
No Speed Humps	22%	0
Stop Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	N/A	0
Example 3: Matched Pair Scores		
Design Features	Vote Percentage	Score
Shared Bike Lanes	20%	0
Bumpouts	65%	1
Angled Parking	58%	1
No Speed Humps	22%	0
Stop Signs	50%	1
Crosswalks	83%	1
6-Foot Sidewalks	41%	0
Crossing Islands	N/A	0
Input Scores for 15th Ave Design Examples		
Design Example	Vote Percentage	Score
Example 1	26%	1
Example 2	37%	3
Example 3	37%	3
Total Input Scores		
Example 1	3	
Example 2	7	
Example 3	7	

Appendix E: Descriptions of "Our Streets" Exhibits

4th Street S: Example 1

Back-In Angled Parking and Shared Bike/Car Lane

Dimensions

- 11 foot bicycle and traffic lanes
- 8 foot parking lanes on south side, 20 foot parking on north side
- 6 foot boulevard space
- 6 foot sidewalks
- 3 foot space between sidewalk and property

Features

- Back-In Angled parking on north side increasing parking from approximately 31 to 45 spaces
- Parallel parking on south side
- Shared bike and traffic lanes

Considerations

- "Back-in" angled parking would be needed to enhance bicyclist safety
- Shared bike and traffic lanes can be less safe for bicyclists because they must share the same space as motor vehicles

4th Street S: Example 2

Bike Lanes and Wider Sidewalks

Dimensions

- 11 foot traffic lanes
- 6 foot bicycle lanes
- 8 foot parking lanes
- 4 foot boulevard space
- 8 foot sidewalks
- 3 foot space between sidewalk and property

Features

- Addition of two striped bike lanes
- Parallel parking on both sides of the street
- Wider 8 foot-wide sidewalks
- Narrower 4 foot wide boulevard space
- Bump-outs at the intersection of 4th and Cedar
- Approximately 31 total parking spaces

Considerations

- This example does not increase parking capacity
- Striped bike lanes makes movements of bicyclists more predictable
- Wider sidewalks make more space for traveling on sidewalk, but less space for the boulevard
- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out

4th Street S: Example 3

Median, Crosswalk, Pedestrian Signs

Dimensions

- 6 foot wide median
- 11 foot bicycle and traffic lanes
- 8 foot parking lanes
- 4 foot boulevard space
- 8 foot sidewalks
- 3 foot space between sidewalk and property

Features

- Addition of a median down center of the street
- Shared bike and traffic lanes
- Parallel parking on both sides of street
- Addition of bump-outs at 4th and Cedar and 4th and 16th
- Addition of crosswalk with yield sign at 4th and 16th
- Allows for approximately 28 parking spaces

Considerations

- Most expensive example so could be impossible to implement
- Yield signs do not guarantee that motorist will stop for pedestrians
- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out
- Median allows pedestrians to cross to middle of the street before finishing crossing
- This example does not increase parking capacity

15th Avenue S: Example 1

Shared Bike/Car Lane and Crosswalks

Dimensions

- 12 foot bicycle and traffic lanes
- 8 foot parking lanes
- 6 foot boulevard space
- 8 foot sidewalks
- 6 foot space between sidewalk and property

Features

- Shared bicycle and traffic lanes
- Parallel parking on both sides
- Stop signs and crosswalks at 15th and 5th
- Approximately 49 parking spaces

Considerations

- Example is very similar to current design
- Addition of striped crosswalks on both sides of the crossing at 5th St
- Shared bike and traffic lanes can be less safe for bicyclists because the bicyclists must share the same space as motor vehicles

15th Avenue S: Example 2

Bike Lanes and Bump-outs

Dimensions

- 11 foot traffic lanes
- 6 foot striped bicycle lanes
- 8 foot inline parking lanes
- 6 foot boulevard space
- 6 foot sidewalk
- 3 foot space between sidewalk and property

Features

- Wider 50 foot roadway
- Addition of two striped bike lanes
- Parallel parking on both sides of the street
- Stop signs and crosswalks at 15th and 5th
- Addition of bump-outs at 15th and 5th
- Approximately 47 parking spaces

Considerations

- Striped bicycle lanes makes movements of bicyclists more predictable
- Extra roadway width takes away from sidewalk and other walking space
- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out

15th Avenue S: Example 3

Back-In Angled Parking

Dimensions

- 11 foot shared bike and traffic lanes

- 8 foot inline parking lanes on east side, 20 foot angled parking on west side
- 6 foot boulevard space
- 6 foot sidewalk
- 3 foot space between sidewalk and property

Features

- Wider 50 foot roadway
- Shared bike and traffic lanes
- Addition of angled parking on west side of street increases parking from approximately 47 spaces to 74.
- Stop signs and crosswalks at 15th and 5th
- Addition of bump-outs at 15th and 5th

Considerations

- Shared bike and traffic lanes can be less safe for bicyclists because the bicyclists must share the same space as motor vehicles
- Extra roadway width takes away from sidewalk and other walking space
- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out
- "Back-in" angled parking would be needed to enhance bicyclist safety

6th Street S: Example 1

Stop Signs, Ped Signs, Crosswalks

Dimensions

- 11 foot bicycle and traffic lanes
- 9 foot parking lanes
- 6 foot boulevard space
- 8 foot sidewalks
- 6 foot space between sidewalk and property

Features

- Shared bike and traffic lanes
- Parallel parking
- Stop signs and crosswalks at 16th Ave
- Yield to pedestrian signs and crosswalks at old 17th Ave
- Approximately 80 parking spaces

Considerations

- Shared bike and traffic lanes can be less safe for bicyclists because the bicyclists must share the same space as motor vehicles
- Stop and yield signs do not guarantee that motorist will stop for pedestrians
- Addition of stop signs may back-up traffic on the street

6th Street S: Example 2

Ped Islands, Speed Humps, Ped Crossing Signals

Dimensions

- 11 foot bicycle and traffic lanes
- 9 foot parking lanes
- 6 foot boulevard space
- 8 foot sidewalks
- 6 foot space between sidewalk and property

Features

- Shared bike and traffic lanes
- Crosswalks
- Addition of pedestrian island at 16th Ave and old 17th Ave
- Addition of bump-outs
- Addition of pedestrian actuated crossing signal
- Approximately 70 parking spaces

Considerations

- This example is more expensive than example one and may be impossible to implement
- Pedestrian islands allow pedestrians a safe place to at the mid-point of the roadway before crossing the remaining distance
- Shared bicycle and traffic lanes can be unsafe for bicyclists because the bicyclists must share the road with vehicle traffic
- Bump-outs can reduce pedestrian crossing times and increase visibility of pedestrians by motorists
- Pedestrian crossing signals warn motorists that pedestrians are waiting to cross the street
- There is the possibility that on occasion motorists would ignore the pedestrian crossing signal

6th Street S: Example 3

Bike Lanes and Limited Parking

Dimensions

- 10 foot traffic lanes
- 6 foot striped bike lanes
- 8 foot parking lane on south side
- 6 foot boulevard space
- 8 foot sidewalks
- 6 foot space between sidewalk and property

Features

- Addition of 2 striped bike lanes
- Removal of parking on north side of street

- Crosswalks
- Addition of pedestrian island at 16th Ave and old 17th Ave
- Addition of bump-outs on south-side only
- Addition of pedestrian actuated crossing signal
- Approximately 35 parking spaces

Considerations

- This example is more expensive than example one and may be impossible to implement
- Pedestrian islands allow pedestrians a safe place to at the mid-point of the roadway before crossing the remaining distance
- Striped bicycle lanes makes movements of bicyclists more predictable
- Bump-outs can reduce pedestrian crossing times and increase visibility of pedestrians by motorists
- Pedestrian crossing signals warn motorists that pedestrians are waiting to cross the street
- There is the possibility that on occasion motorists would ignore the pedestrian crossing signal
- Removal of approximately 35-40 parking spaces

Parking Time Limits: Example 1

Current Parking Plan

Characteristics

- Example one would leave parking exactly as it currently is in the neighborhood.
  - 4th Street: Metered parking until 6 pm daily except for school bus pick up and drop off spots
  - 15th Avenue: Unlimited parking
  - 6th Street: Unlimited parking except for school bus pick up and drop off spots

Considerations

- Approximately 110 free parking spaces without time limitations
- 27 metered parking spaces
- 13 limited spaces for school bus pick-up and drop-off
- A recent study found that on a workday 37% of the parked vehicles on the street remained in their space all day from at least 8 am until 4 pm.

Parking Time Limits: Example 2

2-Hour Parking Plan

Characteristics

- Time limitation on parking of 2 hours during the day on weekdays on 15th Ave and 6th St
  - 4th Street: Metered parking until 6 pm daily except for school bus pick up and drop off spots
  - 15th Avenue: 2 hour limited parking on 15th until 6 pm on weekdays
  - 6th Street: 2 hour limited parking until 6 pm on weekdays except for school bus pick up and drop off spots

Considerations

- Approximately 110 free parking spaces without time limitations
- 27 metered parking spaces
- 13 limited spaces for school bus pick-up and drop-off
- A recent study found that on a workday 37% of the parked vehicles on the street remained in their space all day from at least 8 am until 4 pm
- This example prevents people from leaving their cars parked on the streets all day long
- Residents who customarily park their cars on the streets for longer than two hours would need to find somewhere else to park their cars

Parking Time Limits: Example 3

4-Hour Parking Plan

Characteristics

- Time limitation on parking of 4 hours during the day on weekdays on 15th Ave and 6th St
  - 4th Street: Metered parking until 6 pm daily except for school bus pick up and drop off spots
  - 15th Avenue: 2 hour limited parking until 6 pm on weekdays
  - 6th Street: 2 hour limited parking until 6 pm on weekdays except for school bus pick up and drop off spots

Considerations

- Approximately 110 free parking spaces without time limitations
- 27 metered parking spaces
- 13 limited spaces for school bus pick-up and drop-off
- A recent study found that on a workday 37% of the parked vehicles on the street remained in their space all day from at least 8 am until 4 pm
- This example prevents people from leaving their cars parked on the streets all day long
- Provides a longer period to stay parked on street
- Residents who customarily park their cars on the streets for longer than two hours would need to find somewhere else to park their cars

15th Ave S and 6th St: Example 1

Stop Signs and Crosswalks

Features

- Installation of a stop sign for motorists approaching the intersection from the north
- Includes painted crosswalks
- Addition of bump-outs throughout the intersection

Considerations

- Motorists are forced to stop at this intersection and may cause congestion
- It is possible that on occasion a motorist ignores the stop sign
- Addition of stop will reduce parking space by 1

- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out

15th Ave S and 6th St: Example 2

Traffic Circle and Pedestrian Crossing Signs

Features

- Creation of a traffic circle
- Includes painted crosswalks
- Addition of bump-outs throughout the intersection
- Addition of yield to pedestrian signs

Considerations

- Traffic circle makes this example more expensive than others and may be impossible to implement
- Traffic circles eliminate the need for traffic signals for motorists
- Traffic circles will reduce available parking space by approximately 4 spaces

15th Ave S and 4th St: Example 1

Pedestrian Crossing Signs and Speed Humps

Features

- Installation of a bump-out
- Addition of two crosswalks
- Addition of pedestrian crossing signs
- Addition of speed humps

Considerations

- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out
- Yield to pedestrian signs warn motorists of potential pedestrians in the intersection
- Yield to pedestrian signs and crosswalks do not guarantee that motorists will stop for pedestrians
- Speed humps slow traffic nearing curve

15th Ave S and 4th St: Example 2

Stop Signs

Features

- Installation of a bump-out
- Addition of two crosswalks
- Addition of stop signs

Considerations

- Bumpouts reduce pedestrian crossing times and increase visibility, but reduce parking space by about 1 space per bump-out
- Stop signs require motorists to stop at the intersection
- Stop signs and crosswalks do not guarantee that motorists will stop for pedestrians
- Will reduce parking space by approximately 2 spaces

Appendix F: Design Features Matched Pairs

Which do you think is best for Cedar-Riverside?

Striped Bicycle Lane

Pros:

- More space for bicyclists
- Movement of motorists and bicyclists more predictable

Cons:

- Not enough space for angled parking and bicycle lanes.
- Less space for sidewalks.
- Bicyclists may move out of the bike lane because of obstructions, which can confuse drivers.

Sharrow (Shared Bike and Traffic Lane)

Pros:

- Reminds motorists to share the road with bicyclists
- More space for traffic lanes, angled parking, or sidewalks.

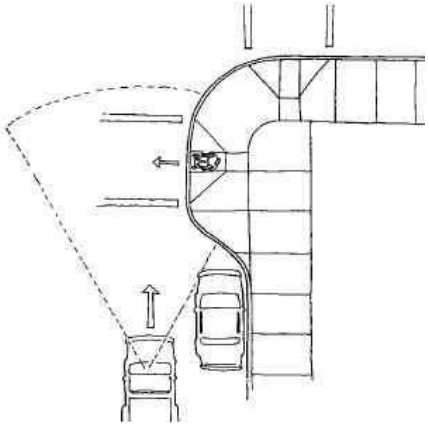
Cons:

- Less space for vehicles and bicyclists to share

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Bumpouts



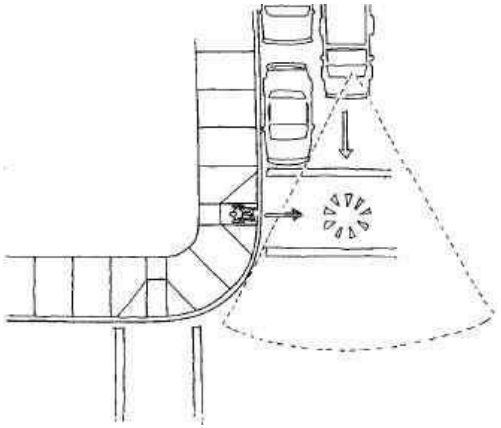
Pros:

- Reduces street crossing distance
- Increases visibility of pedestrians

Cons:

- More costly to create
- Reduces available space for parking
- Reduces the width of the street for motorists and bicyclists

No Bumpouts



Pros:

- More space for parking
- Less costly than creating bump-outs

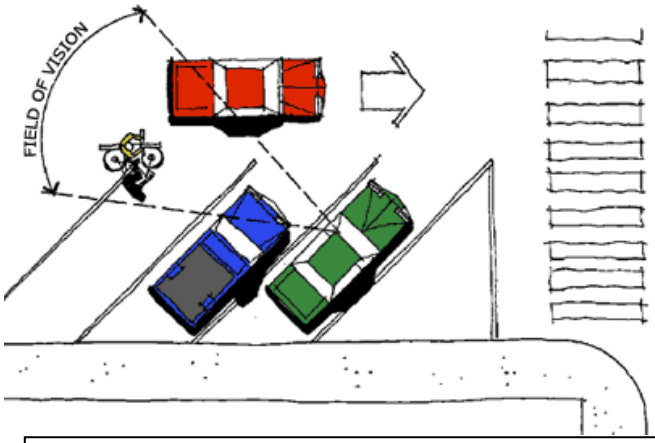
Cons:

- Longer crossing distance
- Does not increase visibility of pedestrians

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Angled Parking



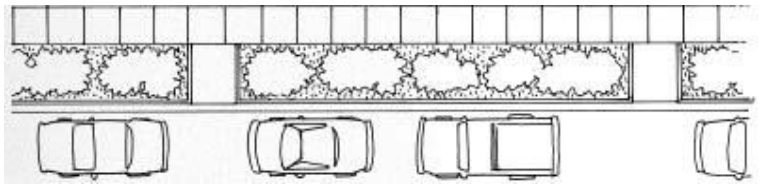
Pros:

- More parking spaces created

Cons:

- Can be difficult to see bicyclists and other vehicles when backing up
- Less space for sidewalks
- No space for striped bicycle lanes

Parallel Parking



Pros:

- Space for striped bicycle lanes
- More space for traffic lanes or sidewalks.

Cons:

- Fewer parking spaces available

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Speed Humps

Pros:

- Effectively reduce speeds
- Inexpensive

Cons:

- Increases noise from deceleration and acceleration of vehicles
- Can slow emergency vehicles
- Can jar vehicles and passengers

No Speed Humps

Pros:

- Keeps road surface smooth
- Less maintenance costs
- No threat of damaging vehicle

Cons:

- Does not slow down motorists

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Stop Signs

Pros:

- Inexpensive
- Requires vehicles to stop and yield to pedestrians

Cons:

- Could create traffic congestion
- Could be ignored by motorists

Pedestrian Crossing Signals

Pros:

- Very visible to motorists
- Prevents unneeded stopping of motorists

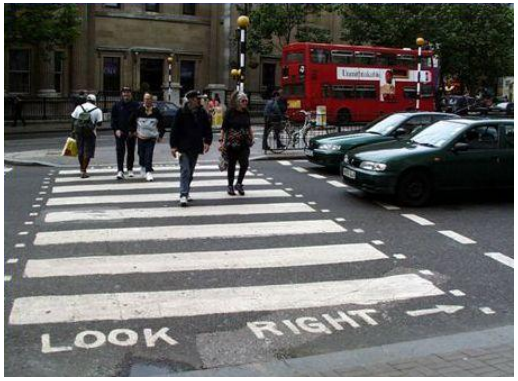
Cons:

- Forces pedestrians to wait for signal to turn
- Does not require motorists to stop

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Crosswalks



Pros:

- Warns motorists of potential pedestrians crossing the street
- Requires motorists to yield to pedestrians

Cons:

- Requires pedestrians to cross only at designated areas of the street
- Could be ignored by motorists

No Crosswalks

Pros:

- Pedestrians can cross anywhere if they choose

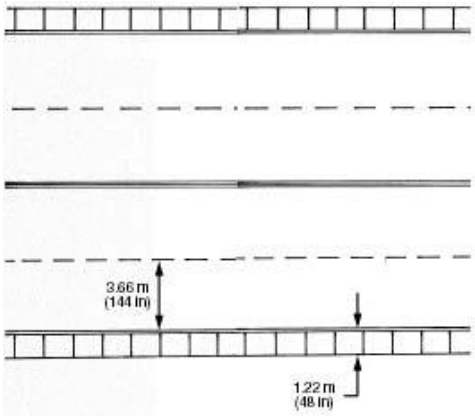
Cons:

- Forces pedestrians to cross at their own risk
- It is illegal to cross outside of a crosswalk

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Narrower sidewalks and wider roadway



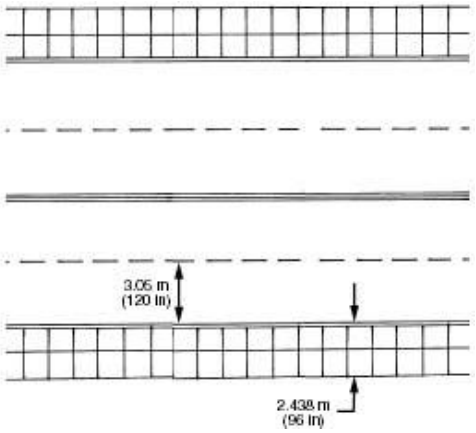
Pros:

- More space for bike lanes, angled parking, medians, boulevards, etc.

Cons:

- Harder to pass others on sidewalk
- Can be difficult for wheelchair users to use

Wider sidewalks and narrower roadway



Pros:

- More space for higher volumes of pedestrians
- Easier for wheelchair users to use

Cons:

- Less space for bike lanes, angled parking, medians, boulevards, etc.

Please vote for your preference in your booklet.

Which do you think is best for Cedar-Riverside?

Traffic Circles

Pedestrian Islands

Pros:

- Reduces vehicle speeds
- Visually attractive

Cons:

- Expensive
- Less space for parking
- Can cause bicycle/motorist conflicts

Pros:

- Reduces vehicle speeds
- Allows pedestrians to cross to the middle of the street before finishing crossing

Cons:

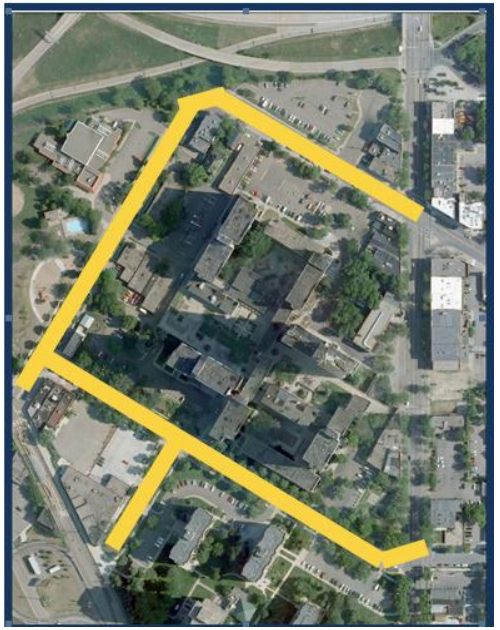
- Expensive
- Less space for parking
- Can cause bicycle/motorist conflicts

Please vote for your preference in your booklet.

Appendix G: "Our Streets" Voting Booklet

Your Input Booklet for the

Our Streets Design Open House



Sponsored by

City Council Member Cam Gordon's Office
West Bank Community Coalition
Riverside Plaza Tenants Association
The University of Minnesota
Cedar-Humphrey Action for Neighborhood Collaborative Engagement

Welcome to the Street Design Open House!

The Purpose of this open house is to…

- Gain community input on street safety design features that will be used to create a street design plan.

- Provide a forum for discussion of street safety issues.

Instructions…

- Start at Exhibit 1: Design Features and then make your way around the room to visit each exhibit.

-Examine the material at each exhibit thoroughly.

- Indicate which option you think would best promote safety in the exhibit's corresponding page in your booklet.

-After you are finished filling out your booklet, return it at the information desk located at the entrance.

A Few Important Things to Know…

-The City of Minneapolis is planning to repave the streets considered in this open house (4th St S, 15th Ave S, & 6th St S) in 2014. The plan created from your input is intended to be used by City Council Member Cam Gordon's office to advocate for a locally preferred plan.

-All of the design features and examples created for this open house came from previous community input

-All of the drawings and ideas presented at this open house are conceptual in nature. This means that how the streets are actually rebuilt may not look *exactly* as they are represented in the drawings.

Thank You for Your Participation & Input

Project Background

The "Our Streets" design project and this open house are the result of an ongoing collaboration between City Council Member Cam Gordon's Office, The West Bank Community Coalition, and the Cedar-Humphrey Action for Neighborhood Collaborative Engagement. The goal of the project is to produce a plan for 4th Avenue S, 6th Avenue S, and 15th Street S that creates a safe environment for pedestrians and cyclists by utilizing your input!

The City of Minneapolis plans to resurface each of the streets mentioned above in 2014 and will produce a plan for these streets. Right now you as a member of the community have an opportunity to shape a plan to advocate for through the City's process. With an existing plan that has neighborhood support, Cedar-Riverside as a community will be much more likely to have streets built that fit your desires and needs.

Exhibit 1: Design Features

This station will show you pairs of design features which are being considered based on previous public input and their ability to improve safety conditions for pedestrians and bicyclists.

Instructions for Exhibit 1…

-***Read*** the descriptions and pros/cons for each matched pair of design features.

-***Circle*** which one of the two features you think would best promote safety on the streets around Riverside Plaza for each matched pair of design features. There should be eight items circled when you are done.

Which do you think would work best?		
Separate Bike & Traffic Lanes	Or	Shared Traffic/Bike Lanes (Sharrows)
Bumpouts	Or	No Bumpouts
Back-in Angled Parking	Or	Parallel Parking
Speed Humps	Or	No Speed Humps
Stop Signs	Or	Pedestrian Crossing Signals
Crosswalks	Or	No Crosswalks
Narrower Sidewalks	Or	Wider Sidewalks
Traffic Circles	Or	Pedestrian Crossing Islands

Exhibit 2: Street Design Examples

Several design examples have been created using previous community input for each street and their intersections to illustrate possible uses of the design features from Exhibit 1.

Instructions for Exhibit 2…

-***Examine*** the maps, drawings, and text provided carefully. Feel free to ask questions.

-***Circle*** one example for each street and intersection based on which you think would work best for the neighborhood.

-***Write*** any additional comments you have on page 6.

Please Note…

ALL EXAMPLES ARE CONCEPTS, NOT FINAL PLANS.

4th Street S

Example 1 Example 2 Example 3

15th Avenue S

Example 1 Example 2 Example 3

6th Street S

Example 1 Example 2 Example 3

Intersection of 15th & 6th

Example 1 Example 2

Intersection of 15th & 4th

Example 1 Example 2

Exhibit 3: Parking Policy Examples

In previous public meetings and focus groups the issue of parking has come up several times. These parking policy examples were put together based on that previous input.

Instructions for Exhibit 3…

- ***Read*** the information for each option carefully.

- ***Circle*** the example you think would best serve the interests of auto users **and** pedestrian/bicyclist safety on the streets around Riverside Plaza

Example 1 Example 2 Example 3

Thank You for your input! If you have any additional comments write them on the next page. Please Return Your Booklet to the Information Desk when you're done.

Appendix H: "Our Streets" Meeting Results

Our Streets Meeting Design Examples Voting Results		
4th Street		
Example 1	Example 2	Example 3
21%	53%	26%
15th Avenue		
Example 1	Example 2	Example 3
16%	47%	37%
6th Street		
Example 1	Example 2	Example 3
26%	37%	37%
Parking Options		
Example 1	Example 2	Example 3
54%	8%	38%
15th Ave and 6th Street Intersection		
Example 1	Example 2	
56%	44%	
15th Ave and 4th Street Intersection		
Example 1	Example 2	
83%	17%	

Our Streets Meeting Design Feature Matched Pairs Voting Results		
Bike Lanes	vs	**Shared Lanes**
16	votes	4
80%	percent	20%
Bumpouts	vs	**No Bumpouts**
13	votes	7
65%	percent	35%
Angled Parking	vs	**Parallel Parking**
11	votes	8
58%	percent	42%
Speed Humps	vs	**No Speed Humps**
14	votes	4
78%	percent	22%
Stop Signs	vs	**Ped Crossing Signal**
9	votes	9
50%	percent	50%
Crosswalk	vs	**No Crosswalk**
15	votes	3
83%	percent	17%
Narrow Sidewalk	vs	**Wide Sidewalk**
7	votes	10
41%	percent	59%
Traffic Circles	vs	**Ped Crossing Island**
1	votes	15
6%	percent	94%

Appendix I

Useful Resources

The following is a list of resources that could be used by the community to continue the work of this project. It is not meant to be an exhaustive list, but broad enough to incorporate all aspects pertinent to achieving the goal of enhancing pedestrian and bicycle conditions in the neighborhood. It is divided into the following sections:

- Local Design Guidelines
- National Design Guidelines
- Pedestrian and Bicycle Safety Strategies
- Parking Strategies
- Public Participation Methods
- Funding for Public Transport Infrastructure Projects
- Other Useful Resources

Local Design Guidelines

Title	*Organization/Author*	*Date*	*Weblink*
ACCESS Minneapolis	The City of Minneapolis Public Works Department	2008 and forward	http://www.minneapolismn.gov/publicworks/transplan/index.htm

Summary: City of Minneapolis' transportation action plan that addresses a full range of transportation options and issues, including pedestrians, bicycles, transit, automobiles, and freight. Includes the Design Guidelines for Streets and Sidewalks, Pedestrian Master Plan, and Bicycle Master Plan.

Title	*Organization/Author*	*Date*	*Weblink*
Cedar Riverside Small Area Plan	The City of Minneapolis Public Works Department	2008 and forward	http://www.minneapolismn.gov/publicworks/transplan/index.htm

Summary: Cedar Riverside Small Area Plan is a policy document produced by the City of Minneapolis to guide land use and development in the Cedar Riverside neighborhood.

Title	*Organization/Author*	*Date*	*Weblink*
Street and Sidewalk Design Guidelines	The City of Minneapolis Public Works Department	2008 and forward	http://www.minneapolismn.gov/publicworks/transplan/comp/public-works_trans-plan_designguidelines

Summary: The Design Guidelines for Streets and Sidewalks were developed to assist staff and stakeholders in the decision making process for planning and designing complete streets that support and encourage walking, bicycling and transit use while promoting safe operations for all users.

Federal Design Guidelines

Title	*Organization/Author*	*Date*	*Weblink*
Guidelines for Sidewalk and Trail Development	Federal Highway Administration	2008 and forward	http://www.fhwa.dot.gov/environment/sidewalk2/contents.htm

Summary: Provides planners, designers, and transportation engineers with a better understanding of how sidewalks and trails should be developed to promote pedestrian access for all users, including people with disabilities.

Pedestrian and Bicycle Safety Strategies

Title	*Organization*	*Date*	*Weblink*
Streets.MN	Streets.MN	2012	http://www.streets.mn/

Summary: Streets.MN is dedicated to expanding the conversation about land use and transportation issues in the Twin Cities and Greater Minnesota.

Title	*Organization*	*Date*	*Weblink*
Pedestrian and Bicycle Information Center	Pedestrian and Bicycle Information Center	2012	http://www.pedbikeinfo.org/

Summary: The Center exists to improve the quality of life in communities through the increase of safe walking and bicycling as a viable means of transportation and physical activity. It offers information and training to diverse audiences about health and safety, engineering, advocacy, education, enforcement, access, and mobility as it relates to pedestrians and bicyclists.

Title	*Organization*	*Date*	*Weblink*
Case Study Compendium	Pedestrian and Bicycle Information Center	July, 2010	http://katana.hsrc.unc.edu/cms/downloads/pbic_case_study_compendium.pdf

Summary: A collection of case studies, or success stories, that cover pedestrian and bicycle projects and programs from across the US and abroad, including engineering, education, enforcement, encouragement, planning, health promotion, and comprehensive safety initiatives. They are intended to provide ideas and spur thinking about potential activities communities can undertake to further support bicycling and walking.

Title	*Organization*	*Date*	*Weblink*
Traffic Calming.org	Fehr & Peers	2012	http://trafficcalming.org/

Summary: Features various traffic calming devices along with their definitions, advantages and disadvantages, measures of effectiveness, and cost estimates.

Title	*Organization*	*Date*	*Weblink*
Pedestrian and Bicycle Safety Page	Federal Highway Administration	2012	http://safety.fhwa.dot.gov/ped_bike/

Summary: Includes pedestrian safety strategic plan, research resources and tools, education and outreach resources, and links to other related websites.

Title	*Organization*	*Date*	*Weblink*
National Strategies for Advancing Bicycle Safety	National Highway Traffic Safety Administration	June 2001	http://www.nhtsa.gov/people/injury/pedbimot/bike/bicycle_safety/

Summary: The National Strategies for Advancing Bicycle Safety is a call to action for policy makers, educators, advocates, transportation experts, health and injury professionals, and others with an interest in safe bicycling. The strategies encompassed in the document are those that, over the next three to five years, are capable of enhancing bicycle safety for riders of all ages.

Title	*Organization*	*Date*	*Published by*
Planning for Pedestrians and Cyclists- Update (2007 – 2009)	Current Topics in Transport	March 2009 No. 15.4	Transport Research Laboratory Information Centre

Summary: Includes over 65 abstracts of reports, conference papers, books and journal articles which focus on transport policies and initiatives to improve the safety and attractiveness of the pedestrian and cyclist environment.

Parking Strategies

Title	*Journal/Author*	*Date*	*Published by*
Parking in Urban Areas- Update (2005 - 2008)	Current Topics in Transport	September 2008 No. 126.2	Transport Research Laboratory Information Centre

Summary: Includes over 65 abstract reports, conference papers, books and journal articles which focus on parking in urban areas.

Title	*Journal/Author*	*Date*	*Published by*
Better Parking, Better Streets	Sustainable Transport/ Michael Kodransky	2010 Issue 22	Institute for Transportation and Development Policy

Summary: Documents best practices in European parking management and summarizes some of the European cities that are reaping the benefits of parking policy reform.

Title	*Journal/Author*	*Date*	*Published by*
Parking Management and Commuter Rail: The Case of Northeastern Illinois	Erik Ferguson	2000 Vol. 3, No. 2	Journal of Public Transportation

Summary: Examines the relationship between parking management and commuter rail transit using the Chicago metropolitan area in northeastern Illinois as a case example.

Public Participation Methods

Title	*Journal/Author*	*Date*	*Published by*
Visualization Tools and Methods in Community Planning: From Freehand Sketches to Virtual Reality	Journal of Planning Literature/ Kheir Al-Kodmany	2002 Vol. 17 Issue 2	Sage Publications

Summary: Reviews traditional and computerized visualization tools in community planning. Includes benefits and drawbacks of computerized and non-computerized tools.

Title	*Journal/Author*	*Date*	*Published by*
Creating a Common Vision: Design by Democracy	Chapter 5 of Visions for a New American Dream/Anton Nelessen	1994	Planners Press

Summary: Outlines strategies for building consensus at the neighborhood level on design projects.

Title	*Journal/Author*	*Date*	*Published by*
Where Do We Want to Go?: Involving Citizens in Making a Plan	Chapter 5 of Community Planning: An Introduction to the Comprehensive Plan/ Eric Kelly and Barbara Becker	2000	Island Press

Summary: Provides information on public engagement strategies for comprehensive planning efforts.

Title	*Journal/Author*	*Date*	*Published by*
Bottom-Up Neighborhood Revitalization: A Language Approach to Participatory Decision Support	Urban Studies/ Ernesto Arias	1996 Vol. 33 Issue 10	Routledge

Summary: Describes the conceptual aspects behind the development of interactive three-dimensional planning simulations and games to be used as decision-making tools.

Title	*Journal/Author*	*Date*	*Weblink*
A Mapmaker's Dream: Public Involvement, Applications & Utilization of GIS	John Donovan and Mark Bosworth	Dec. 11, 2011	http://ncgia.ucsb.edu/varenius/ppgis/papers/bosworth.html

Summary: This paper was presented at the proceedings of a professional conference on utilizing spatial information systems in public participation. It summarizes and evaluates methods used by Metro, Portland Oregon's regional planning body, to incorporate visual and spatial information into their public engagement efforts.

Title	*Journal/Author*	*Date*	*Published by*
Civic Engagement and Recent Immigrant Communities: A Guide for Local Officials and Other Community Leaders	National League of Cities Center for Research and Innovation	2010	National League of Cities

Summary: A discussion guide which presents local officials with the first steps and directions for developing or re-establishing efforts toward integrating immigrants into the civic life of the city.

Funding for Public Transport Infrastructure Projects

Title	*Organization/Author*	*Date*	*Weblink*
Grants and Programs	US Department of Transportation	2012	http://www.dot.gov/livability/grants-programs.html#bike

Summary: Provides a list of programs and grants within the Department of Transportation that support projects that enhance or relate to livability.

Title	*Organization/Author*	*Date*	*Weblink*
Transportation Enhancement Activities	US Department of Transportation Federal Highway Administration	2012	http://www.fhwa.dot.gov/environment/transportation_enhancements/

Summary: Transportation Enhancement activities offer funding opportunities to help expand transportation choices and enhance the transportation experience through 12 eligible TE activities related to surface transportation, including pedestrian and bicycle infrastructure and safety programs.

Title	*Journal/Author*	*Date*	*Published by*
Active Seattle: Achieving Walkability in Diverse Neighborhoods	Rebecca Deehr and Amy Shumann	2009 Supplement 2 Vol. 37	American Journal of Preventative Medicine

Summary: Analyzes efforts, results, and lessons learned from Active Seattle, a project which advocates increased walkability in diverse neighborhoods. One positive result was increased funding in pedestrian infrastructure that makes neighborhoods more walkable.

Title	*Journal/Author*	*Date*	*Published by*
The Regional Response to Federal Funding for Bicycle and Pedestrian Projects	Susan Handy and Barbara McCann	2011 Vol. 77 Issue 1	Journal of American Planning Association

Summary: Analyzes spending by Metropolitan Planning Organizations on Pedestrian and Bike infrastructure projects through the use of federal funds.

Title	*Journal/Author*	*Date*	*Published by*
Factors Associated with Federal Transportation Funding for Local Pedestrian and Bicycle Programming and Facilities	Angie Cradock, Phillip Troped, Billy Fields, Steven Melly, Shannon Simms, Franc Gimmler, and Marianne Fowler	2009 Supplement 1 Vol. 30	Journal of Public Health Policy

Summary: Analyzes bike and pedestrian-related investments authorized by federal transportation legislation.

Other Useful Resources

Title	*Organization/Author*	*Date*	*Weblink*
Project for Public Spaces	Project for Public Spaces	2012	http://www.pps.org/

Summary: Project for Public Spaces (PPS) is a nonprofit planning, design and educational organization dedicated to helping people create and sustain public spaces that build stronger communities.

Title	*Organization/Author*	*Date*	*Weblink*
Bikewalk.org	The National Center for Bicycling & Walking	2012	http://www.bikewalk.org/

Summary: Provides communities with a broad range of services to help become more livable. The organization has existed since 1977 and claims to help make neighborhoods, towns, cities, and regions more bicycle-friendly and walkable places.

Title	*Organization/Author*	*Date*	*Weblink*
Complete the Streets	National Complete Streets Coalition	2012	http://www.completestreets.org/

Summary: Complete Streets is a movement asking planners and engineers to build road networks safer, more livable, and welcoming to everyone. Their goal is for planners and engineers to have all roadway users in mind when designing streets.

Appendix J: Summary of Shared Space Concept

The ultimate goal of this project is to help create safer streets around Riverside Plaza for the benefit of the community. Throughout this process we have heard many ideas and evaluated a variety of changes to the physical environment to accomplish that goal. In presenting those possible changes we have tried to ensure that we present something that is not only beneficial, but feasible. That means that it has to be cost effective and politically acceptable. Because the concept of shared space was not viewed to be politically acceptable, we did not present it as a voting option at our public meeting.

Shared space was proposed by Simon Blenski of the City of Minneapolis Public Works Department (Blenski, 2012). Shared space is defined as a street space where all traffic control devices such as signals and stops signs, all markings such as crosswalks, and all signing have been removed (Toth 2009). The idea behind shared space is to create an environment that forces all users; pedestrians, bicyclists, and motorists, to negotiate passage through the space via eye contact and person to person contact (Toth 2009).

Shared space is an emerging approach to urban design that has been experimented with throughout Europe. It has been shown to reduce vehicle speeds and crashes (Toth 2009). With the removal of traffic tools uncertainty is created in terms of who has the right of way and consequently drivers and pedestrians become more attentive and engaged (Clark 2006). Shared space offers a way to address safety issues, and combat congestion. Plus, since it involves taking things away rather than adding new features, it can be less costly than other traffic calming devices (Clark 2006).

Figure 11: An example of shared space in Europe

After learning more about the streets around Riverside Plaza and the concept of shared space, Simon's idea began resonating with us. In doing our pedestrian and bicyclist counting we noted how pedestrians tended to move around freely in the area. They would often mill around the area, coming in and out of parking lots, stopping to talk to friends in the street, crossing open spaces, and crossing the streets whenever they saw a gap in traffic. At its peak, we noted 156 pedestrians crossing the streets in a single hour. Motorists would speed their vehicles down the street unless something impeded them such as a vehicle attempting to park, a school bus picking up kids, or a pedestrian crossing the street. Informal shared space already existed.

In addition to the above mentioned characteristics, there are other factors that make this area attractive for attempting a shared space strategy. First, with one light rail station in place, and the installation of another rail station nearby, this area is one of the most connected in the city to public transit options. Therefore, the percentage of trips in which vehicles are needed by residents is less than most areas. Second, there already exists two large, high-volume living complexes in the area (The Cedars and Riverside Plaza) and a third complex with approximately 250 housing units will be being constructed within the year. This creates congestion in the area and demands alternatives that will lessen the practicality of owning a vehicle. Finally, because 6th and 4th Street are blocked to the West by Interstate 35W, there is no need to vehicles to pass through the area at anything other than a slow rate of speed. After all, vehicles should only be passing through to enter parking garages, parking lots, or seek other parking availability.

Considering all of the characteristics of the behavior of pedestrians in the area, along with the factors of the physical environment, we feel that it would not be unreasonable for the city of Minneapolis to experiment with the concept of shared space in the Cedar Riverside area, particularly on

6th St S along Riverside Plaza, and 16th St S next to the light rail station. There is in fact a real need for scientific research that shows the value of streets as shared spaces in order to give credibility to its perceived benefits (Toth 2009). The city of Minneapolis could be a forerunner in this country of shared space efforts and produce an experiment in the area around Riverside Plaza to lend more credence to the concept. In the process it could also create a safer, more attractive, and livable space for Minneapolis residents.