

APPENDIX C

PEDESTRIAN AND BICYCLE ISSUES



To: John Slack, Stantec
From: Ciara Schlichting, AICP, Hannah Pritchard, PE and Tony Hull
Date: 5/30/2014
Re: Lowry Avenue NE Corridor – Key Pedestrian and Bicycle Issues

Toole Design Group (TDG) staff has been engaging the community, project partners and the project team in conversations about the Lowry Avenue Northeast Corridor through interactive workshop activities, a walking tour and dialogues at community meetings. Lowry Avenue is a unique transportation asset as it is the only continuous and direct east-west roadway that crosses both the Mississippi River and I-94 to connect North and Northeast Minneapolis. Balancing the competing needs of multiple users – cars, trucks, buses, pedestrians and bicyclists – is an important topic that thread through many stakeholder conversations.

The purpose of this memo is to share the key corridor wide non-motorized transportation issues facing pedestrians and bicyclist based on issues raised during community engagement events and our analysis of the corridor. Companion project documents prepared by the project team that summarize community engagement results, existing field conditions, and relevant plans include:

- **Strengths, Weaknesses, Opportunities and Threats Exercise Results.** To better understand stakeholders views about the corridor's existing conditions and future opportunities TDG facilitated a strengths, weaknesses, opportunities and threats (SWOT) exercise with the Technical Advisory Team, the Community Advisory Team, and nearly 60 participants at a community workshop.
- **Summary of Relevant Plans.** TDG reviewed several planning documents and a summary of the pedestrian and bicycle related plans are included in this document.
- **Lowry Corridor Analysis Maps.** Key plan information and existing conditions are displayed in a series of maps.
- **Inventory of Sidewalk Widths.** A spot inventory of sidewalk widths near the study intersections along the corridor was performed. Curb to edge of right-of-way was measured, along with the clear distance between obstructions. The inventory results are included in Attachment 1 to this memo.

Pedestrian Issues

Sidewalks provide pedestrians with space to travel within the public right-of-way that is separated from motor vehicles. The sidewalk typically includes all of the space from the back of the curb to the right-of-way line that may be both paved and unpaved or planted in some cases. To better understand how to design for this space a zone system has been developed to identify the types of activity that occur within the sidewalk and better plan to accommodate these uses within the available space.

The Sidewalk Zone System includes four zones: Frontage, Pedestrian, Amenity, and Curb – that vary in terms of width and character depending on the adjacent land use, available right-of-way, and intended function. The combined space of the Amenity and Curb Zones are sometimes referred to as the Buffer Zone, as these provide separation for pedestrians from the moving traffic in the roadway. The sidewalk zone system is shown on the following graphic and each zone is described in detail below.

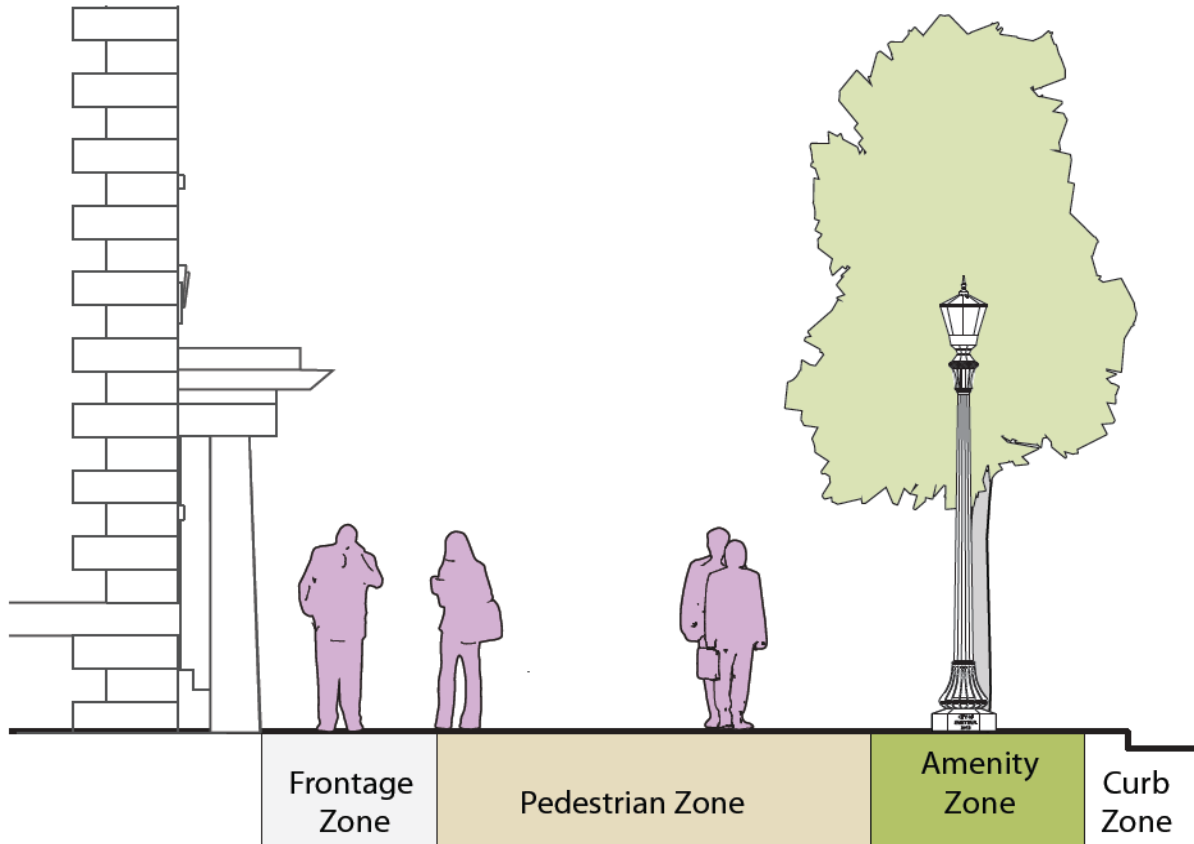


Figure 1. Sidewalk Zone System

[Buffer Zone]

Curb Zone - This is also called the transition zone (separating pedestrian zone from the vehicular travel way). The curb zone provides a physical barrier (curb) and also provides space for getting in and out of a parked car (where on-street parking exists).

Amenity Zone - This is where all the “stuff” goes (benches, newspaper boxes, utility poles, signs, street lights, trees, snow storage, etc.) This zone clearly defines a reasonable space for all of our “stuff”.

Pedestrian Zone - This is the operational element of the sidewalk and needs to be well defined and maintained at all times. This is also what is referred to as the Pedestrian Accessible Route (PAR), or the space that needs to meet ADA standards for egress along the travelled way.

Frontage Zone - A small buffer at the right of way line to account for the distance we naturally want to be away from walls, fences, doorways, etc. (i.e., 2 – 6 feet)

Effective application of the zone system allows us to provide space for utilities, signs, and amenities such as bus shelters or waiting areas, bicycle parking, public seating, public art, newspaper stands, trash and recycling receptacles, and greenscape elements. The sidewalk zone system provides an approach to support pedestrian activity and make sure that the competing uses are placed appropriately to balance the space needed for objects while maintaining a safe accessible route. The zone system should be applied to the available sidewalk space. Where adequate space is not available, careful consideration needs to be given to the design and programming of the space, with a priority on meeting pedestrian accessibility and safety needs.

Space constraints and inconsistent sidewalk zone.

The sidewalks along Lowry Avenue NE are significantly constrained along the corridor. Intended sidewalk widths were measured to be between five and eight feet. At some major intersections, and in areas where buildings have been set back behind the right-of-way, the usable pedestrian space is as much as 13 feet. However, in other areas, the five-foot sidewalk area is being encroached upon by residential yards and landscaping that has not been maintained. Once space used for the amenity zone is taken into account, the passable pedestrian area is frequently three feet or less.



Figure 2. Examples of inconsistent sidewalk zone

As a result of this constrained environment, sidewalk treatments along Lowry Avenue NE are inconsistent in application of the zone system and vary block by block. Some sidewalk segments west of Central Avenue NE include an Amenity Zone with two to four-foot wide grass buffers between the sidewalk and the travel lane while others lack a buffer to the travel lane.



Figure 3. Example of Sidewalks with a Curb Zone Buffer (Striped Parking Bays East of Central Avenue)

The portion of Lowry Avenue NE east of Central Avenue includes striped parking bays that provide some buffer between pedestrians and travel lanes (i.e., the parked cars in the Curb Zone provide a buffer).

Inconsistent development set-backs. On residential lots with fences, the fence is built right to the property line, providing no additional pedestrian space. However, on commercial land uses, buildings may be set back one or two to provide additional room. Figure 4 illustrates a residential fence that increases the narrow feel of the sidewalk area, as well as a new development that has opted to increase the sidewalk width in addition to setting the building back from the edge of the right-of-way.



Figure 4. Examples of development set backs

Sidewalk obstructions. Sidewalk obstructions are prevalent throughout the corridor and minimize the width of the pedestrian travel way. A minimum of 36 inches (3 feet) is required for Americans with Disabilities Act (ADA) compliance. Obstructions include sign posts, utility poles, vegetation, temporary signs, and garbage cans. Above ground utilities, furniture, and vegetation would otherwise be placed in the Amenity Zone if it were available. The space between the fire hydrant and the edge of the grass in Figure 5 was measured at two feet, 3 inches. A person in a wheelchair would be required to travel in the street to pass through this portion of the corridor.

Snow removal. The walking tour conducted in February confirmed that the travel way for pedestrians was not maintained by adjoining property owners in the winter.



Figure 5. Examples of Sidewalk Obstructions

Driveway apron grades. Driveway apron cross slopes compromise the accessibility of the sidewalk. The narrow sidewalk space frequently results in a curb-adjacent sidewalk without a defined curb or amenity zone. Where driveways occur there is not adequate space to provide for the transition from roadway to driveway without interrupting the sidewalk. In many cases this results in sections of sidewalk where cross-slope exceeds the 2% needed for Americans with Disabilities Act (ADA) compliance (see Figure 6). Additionally when driveways are poorly defined or maintained, potential conflicts increase between vehicles and pedestrians where it is not clear where the driveways and sidewalks begin or end.



Figure 6. Driveway Apron Grades Limit Accessibility



Figure 7. Railroad Viaduct Lacks Pedestrian Scale Lighting

viaduct provides a narrow pedestrian travel way that is not well lite and poses personal security concerns.

Truck movements. Lowry Avenue NE is a truck route, with significant truck movements going through the Lowry Avenue NE / University Avenue NE intersection. Trucks create more noise than passenger cars, which impacts pedestrian comfort along the corridor. In addition, there was visual evidence of large vehicles entering the pedestrian space when making a turn (Figure 8). This is an issue that has also been raised by project stakeholders.

Streetscape. The pedestrian zone lacks trees, furniture, pedestrian scale lighting, art, and wayfinding to enhance the public realm and pedestrian environment. Where furnishings are provided, they frequently interrupt the walkway and reduce the accessibility of the walking route. Non-fixed objects such as waste receptacles and newspaper boxes can be particularly challenging as they become moved from their intended storage space. The rail road



Figure 8. Bus Stop sign Knocked Over by Turning Truck

Transit stop design and service. Some bus stops lack benches, shelters, concrete pads and snow removal in the winter. In Figure 9, the retaining wall for the private business serves as a de facto transit waiting area. Bus frequency and lack of service during the evening and weekends limits the mobility of transit dependent populations. Where shelters or benches do exist, they frequently add to the obstructions in the walkway, further adding to the sidewalk clutter and confusion.



Figure 9. Bus Stop Lacks Shelter, Resting Area and Concrete Pad to the Curb

Accessibility. The age and condition of infrastructure throughout the corridor creates challenges for accessibility. Sidewalks are in many cases in poor condition and there are numerous cracks and gaps along the surface that reduce accessibility and contribute to difficult conditions for persons with disabilities. Many curb ramps are deteriorated, obstructed from use, and a number of driveways carry through the walkway creating cross-slope that is difficult to navigate and/or appear to be non-ADA compliant (an ADA compliance audit is not part of the scope of work).



Deteriorated curb face. Curb conditions vary block by block and some are in poor condition and provide a compromised grade separation from the road bed to the sidewalk. In many sections the deteriorated curb provides little to no vertical separation from the roadway, facilitating encroachment on the sidewalk for maneuvering and/or stopping or parked vehicles, delivery trucks and buses.

Figure 40. Example of Deteriorated Curb Face

Bicycling Issues

No marked or signed bicycle facilities. Lowry Ave NE provides a shared lane configuration for bicyclists without any markings or signs that remind users that bicycles are allowed to share lanes with motor vehicle traffic. Bicycle count data shows that Lowry Ave NE has a higher rate of sidewalk riding than other count locations (Figure 11), which indicates that bicyclists are not comfortable sharing the road with motorized vehicles.



Figure 5. Bicyclist Riding in the Parking Bay



Figure 12. Bicyclist Riding on the Sidewalk

Bicycle crash rates. The Minneapolis Crash Report identifies the Lowry Ave Corridor as having a higher than average crash rate for bicycles than other corridors in the city. Hennepin County identified the intersection of Lowry Ave/Central Ave NE as having one of the highest bicycle crash locations in the county.

Conflicting bicycle plans. Neighborhood plans propose that bikeways in the vicinity be located along the existing 22nd Avenue NE Bicycle Boulevard and the planned 27th Avenue NE bikeway. The existing 22nd Avenue NE Bicycle Boulevard lacks treatments for bicycle travel through intersections at University Avenue NE (TH 47) and Johnson Street NE. The planned 27th Avenue NE bikeway is in the early project scoping phase. The Hennepin County Bicycle Plan and Minneapolis Bicycle Master

Plan propose bicycle facilities on Lowry Avenue NE. Both Hennepin County and the Minneapolis are in the process of revisiting their bicycle plans.

Attachment 1: Inventory of Sidewalk Widths Results

Attachment 2: Google Earth KMZ file showing where the numbered points are located

Attachment 1: Inventory of Sidewalk Widths

Location Number	Side of the street	Location	Measurement (not including curb)	Comments
1a	South	120 ft east of Marshall	8'9"	
1b	North	120 ft east of Marshall	10'9"	
2	North	250 ft east of Marshall	7'7"	
3	North	at Marshall (east)	12'9"	
4	South	at Grand (west)	11'5"	
5a	South	at Second (east)	8'6"	
5b	North	at Second (east)	8'3"	
6	South	50 feet east of Second	10'5"	
7	South	80 feet east of Second	5'1"	
8	North	130 feet east of Second	5'10"	
9	North	300 feet east of Second	4'11"	
10	North	at Third (east)	2'3"	From edge to fire hydrant
11	North	200 feet east of Third	4'11"	3'2" to sign post
12	North	at University	7'7"	
13	South	180 feet west of University	7'9"	
14	South	150 feet west of University	9'7"	
15	South	at Third (east)	7'7"	
16	South	at Third (west)	4'10"	
17	South	50 feet west of Third	7'2"	
18	South	at Madison (east)	9'4"	
19	South	130 feet east of Madison	5'6"	
20	South	at Howard (east)	4'5"	yard creep
21	South	at Monroe (west)	5'1"	
22	North	50 feet west of Monroe	3'	edge of building to signal pole
23	North	at Howard (east)	7'7"	
24	North	at Madison (east)	5'1"	
25	North	30 feet east of Jefferson	4'7"	
26	North	30 feet east of Jefferson	2'7"	between pole and retaining wall
27	South	150 feet east of Jackson	5'1"	
28	South	170 feet east of Jackson	7'8"	measured to fence line
29	South	240 feet east of Jackson	6'7"	from parking block
30	South	at Central (west)	7'6"	arcana
31	South	at Central (east)	7'1"	
32	South	140 feet east of Central	4'8"	2'10" to pole
33	North	at Polk (west)	7'6"	2'6" on private property
34	North	170 feet east of Central	6'11"	
35	North	at Central (east)	5'0"	
36	North	at Central (west)	7'6"	

Location Number	Side of the street	Location	Measurement (not including curb)	Comments
37	North	130 feet west of Central	7'6"	3'10" to light post
38	North	at Jackson (east)	5'0"	
39	South	100 feet east of Johnson	7'10"	1'10" grass buffer
40	North	50 feet west of Johnson	4'5"	
41	North	at Lincoln (east)	4'10"	
42	South	50 feet west of Johnson	4'11"	