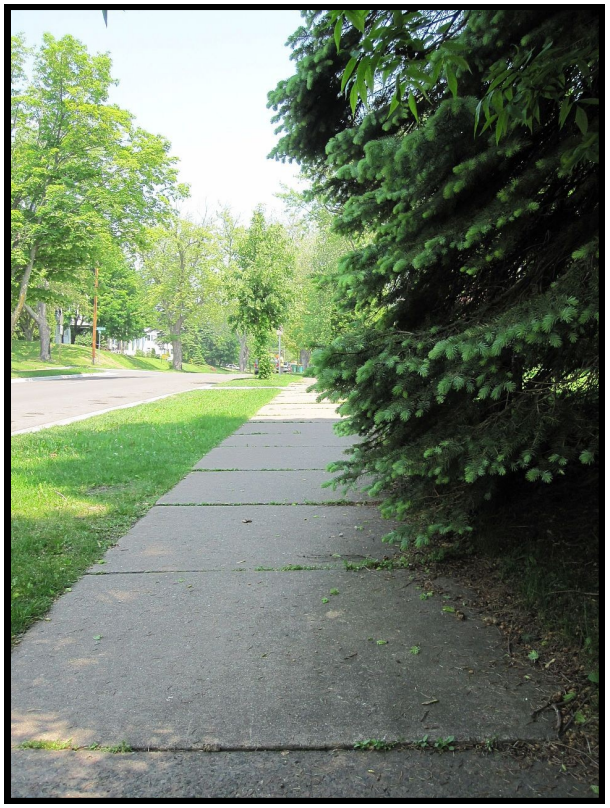
Duluth Sidewalk Study



Duluth-Superior Metropolitan Interstate Council

August 2012

Duluth Sidewalk Study

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Prepared by the Duluth-Superior Metropolitan Interstate Council

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www.dsmic.org

Duluth and Superior urban area communities cooperating

in planning and development through a joint venture of the

Arrowhead Regional Development Commission

and the

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Introduction

Why are sidewalks important? The most basic answer to this question is that sidewalks provide a safer space for pedestrian travel than using the street. Almost all trips have a walking component in them whether is to and from your transit stop or from your parking place to your final destination.

Sidewalks provide a safe walkway for all citizens including children, people using wheelchairs, the elderly, or people pushing a cart or stroller. Sidewalks are also a place for a relaxing area to walk, to get daily exercise for better health, and to interact with neighbors. Sidewalks provide a safe method of transportation for shorter trips that allow less reliance on automobiles. It is estimated that up to 40% of the population does not drive. These groups include children, disabled populations, the elderly and those who choose not to drive.

A number of studies have pointed to the fact that investing in walking infrastructure has many benefits spread widely across the community. According to the Victoria Transport Policy Institute, an improved walking environment has proven to have many individual and community health benefits, such as opportunities for increased social interaction, an increase in the average number of friends and associates where people live, reduced crime (with more “eyes on the street”), increased sense of pride, and increased volunteerism. Also, an increasing portion of the population, including many children, lack regular physical activity. Although there are many ways to be physically active, walking is one of the most practical ways to increase physical activity among a broad population. Walking tends to be particularly important for elderly, disabled and lower-income people who have few opportunities to participate in sports or formal exercise programs. Health experts believe that more balanced transportation systems can contribute to improved public health by accommodating and

encouraging active transportation.

Many cities recognize that the ability for pedestrians to move safely and conveniently throughout an urban area is important to its economic vitality. A study done jointly by the University of Arizona and Indiana University found that office, retail and apartment properties had a higher property value if they were located in areas that were rated as more walkable. According to the Seattle Department of Transportation "walkable neighborhoods typically have active streets that promote commercial exchange, while providing safe and efficient ways for residents to travel on foot." In other words investing in infrastructure (sidewalks) that promotes walking can have a positive impact on the economic health of your community.

In today's financial climate, resources for sidewalk maintenance and development are limited. We need good information to utilize those scarce resources efficiently. This information includes an accurate inventory of where sidewalks are located, what condition they are in and which sidewalks are the most heavily used. This study provides necessary sidewalk information such as the location and condition of sidewalks, where are the most important sidewalks located and guidelines to where sidewalks should be located.

Sidewalk Inventory

The objective of the sidewalk inventory was to create a GIS database of all sidewalks in the City of Duluth. Attribute information collected as part of this inventory included sidewalk type, width, condition and relation to roadway. Additional information collected included boulevard type, width and location of pedestrian ramps and sidewalk obstructions. This GIS database was designed to be updated on a yearly basis.

The methodology for creating the inventory began by examining aerial imagery for Duluth and heads-up digitizing (tracing) the sidewalk segments onto the imagery creating a layer of sidewalk segments that would be used in the field to attach attribute information to. Sidewalk segment lengths varied from 1/2 block along the avenues in the more urban areas to some long segments in the more rural parts of the city.

The data collected for this inventory was obtained during extensive field surveys with a hand held GPS unit with drop down menus containing the attributes in the various categories (see Figure 1). Each field worker would survey the sidewalk, curb ramp, boulevard and any obstructions and enter one of the programmed choices from the menu. All of this information was then loaded into our GIS for storage and analysis.

Sidewalk and curb ramp condition rating systems were key elements of this inventory and were developed by examining MnDOT's rating systems for assessing sidewalks and curb ramps for compliance to the Americans with Disabilities Act (ADA) standards. We utilized a four point rating system for both sidewalks (see page 6) and curb ramps (see page 8). Page7 further describes the terms used in describing our condition rating system.

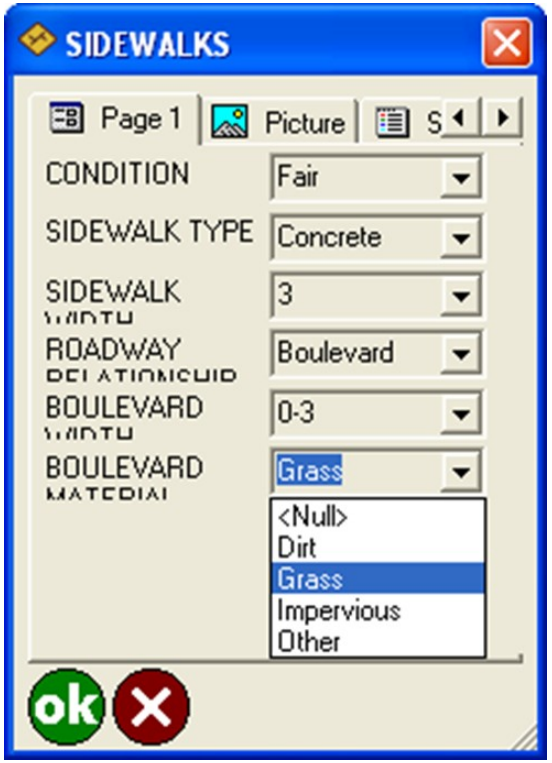

Figure 1

Sidewalk Condition Rating

1 -- Excellent Condition

- Uniform, flat cross slope
- No dips/heaves
- Minimal small cracks
- No obstacles in the vicinity
- No spalling or displacement

2 -- Good Condition

- Uniform, flat cross slope
- Multiple cracks with minimal dips/heaves
- Minor spalling
- Minor displacement

3 -- Fair Condition

- Some large cracks
- A moderate level of spalling
- Slight non-uniform cross slope
- Small dips/heaves, not very level
- 1 or 2 obstacles

4 -- Poor Condition

- Steep or multiple cross slopes
- Many multi-directional cracks
- Concrete chunks missing
- Excessive spalling
- Large dips/heaves
- Several obstacles

1 — Excellent Condition

2 — Good Condition

3 — Fair Condition

4 — Poor Condition

Sidewalk Surface Deficiencies

Displacement or heaving: when the edges of sidewalk squares are vertically offset. This can be caused by frost, tree roots and other factors. The City of Duluth defines a surface deficiency when displacement is greater than ¾".

Displaced Sidewalk

Cracks occur in sidewalk squares and can be a tripping hazard. Minor cracks may not be a problem but when they begin letting water in and grass grow up through them, they can grow into a tripping hazard.

Sidewalk Cracking

Spalling occurs when extreme temperatures, salt and other de-icing chemicals weaken the surface of concrete, masonry, or brick, causing it to chip, pit, and scar. Spalling can be recognized by distinct deformity on the surface, with chips, craters and broken pieces.

Spalling Concrete

Obstructions such as bushes, grass, flowers, fences or low-hanging tree limbs can interfere with accessibility for people walking or using wheeled transportation. Anything that penetrates into the sidewalk space or is within a height limit of 8 feet is considered an obstruction. According to ADA requirements sidewalks must be constructed to allow the minimum width requirement of 36 inches between the edge of an obstruction and the edge of the sidewalk. In some cases, if a sidewalk cannot be constructed to comply with this guideline, the obstruction may need to be removed or relocated.

Obstruction Example

The field work for collecting data for the sidewalk inventory was completed in October 2011 and updates for that construction season were added. The sidewalk inventory will be updated on a yearly basis after the construction season has been completed. New sidewalk segments will be added to the inventory and rehabilitated segments will have their condition rating upgraded. This information will come from the City of Duluth Engineering Department, St. Louis County Public Works and MnDOT.

Flood June 20, 2012

A number of segments of sidewalk that were previously assessed were damaged in the flooding on June 20, 2012. MIC staff will work with City of Duluth staff to update the inventory with damage information.

Curb Ramp Condition Rating

1: Excellent – No cracks, no obstacles, less than ¼" lip at curb line.

2: Good- No cracks, no obstacles, lip at curb line between ¼" and ½".

3: Fair – Cracks create unlevel ramp surface, weeds may be present in cracks.

4: Poor – Ramp has multiple cracks creating rough terrain, concrete chunks missing or surface is spalling, obstacles create difficult navigation, curb lip is more than ½".

Pedestrian Priority Model

The Duluth Pedestrian Priority Model (PPM) was developed to identify areas within the city most likely to have pedestrian traffic. The city of San Diego's PPM served as a guide for the development of Duluth's PPM. The model was created to identify the most heavily used sidewalks and assist in prioritizing projects to affect the largest number of pedestrians. Along with the sidewalk inventory, the model will also help to identify gaps where pedestrian facilities should exist.

Similar to San Diego's PPM the Duluth PPM has three basic components:

- Pedestrian Attractors
- Pedestrian Generators
- Pedestrian Detractors

Each component can be interpreted by itself or as part of the Pedestrian Composite Model. The output of each component is a grid with cell sizes 75 x 75 feet. This resolution allows for detailed interpretation of pedestrian prioritization at all scales. The cells receive a numeric value based on the inputs for each model component. For the composite model a cell's value is calculated by simply adding the three basic component values together.

Pedestrian Attractors

The pedestrian attractor component of the PPM focuses on geographic features that are likely to attract pedestrian activity. Geographic features included in this component of the model include:

- Transit stops
- Schools

- Universities and Colleges
- Parks and Recreation Facilities
- Neighborhood Civic Facilities (Libraries, Post Office, Religious Facilities)
- Neighborhood and Community Retail (Grocers, Shopping Centers, etc.)

Each attractor received a point value and a weighted value based on the buffered distance to that attractor was also assigned. The attractor point value was multiplied by the buffered distance value to calculate a cell's value for that specific geographic feature. If multiple geographic features overlapped, then the values would be summed to calculate a cell's overall attraction. For example, all cells within 1/8 mile from a high school would have a value of 4.5. If a portion of cells 1/4 mile from a major transit stop overlapped cells within 1/8 mile of that high school, the overall cell's value would be 8.5. For a complete breakdown of geographic feature values and weighted values based on distance, see Table 1.

Recognizing certain features are more appealing for pedestrian activity than others, points were assigned in relation to their desirability. For example, a transit center with over 1,000 boardings and alightings per day received a higher point value than a neighborhood civic facility such as a church. The model results of the pedestrian attractor component are shown in Figure 2.

Table 1: Pedestrian Attractors Inputs

	Points	Multiplier	Final Score
Transit Centers (> 1,000 boardings & alightings per day)	5	1	5
Major Transit Stops (206 - 620 boardings & alightings per day)	4		4
Transit Stops (50 - 174 boardings & alightings per day)	3		3
Elementary Schools (Including Private)	3		3
Middle Schools	3		3
Universities & Colleges	4		4
Neighborhood Civic Facilities	1		1
Neighborhood & Community Retail	2		2
Parks & Recreation	1		1
High Schools	3		3
Lakewalk	2		2

Weighting Values Based on Distance to Attractor	Points
1/8 Mile	1.5
1/4 Mile	1
1/2 Mile	0.5

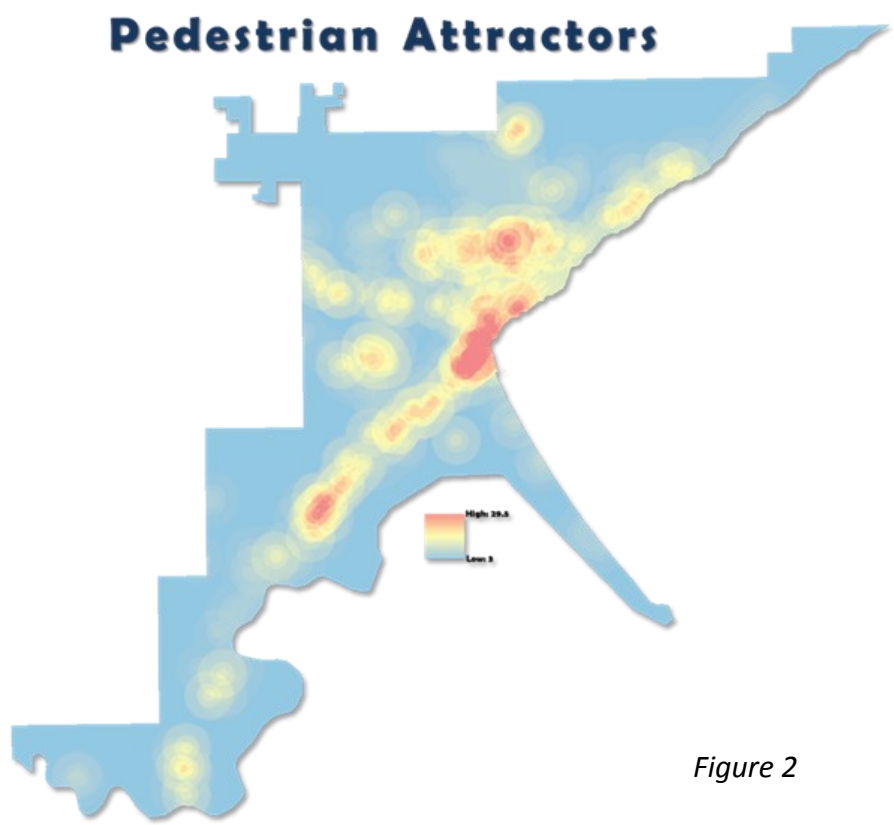

Figure 2

Pedestrian Generators

The pedestrian generator component of the PPM utilizes demographic data from the American Community Survey and U.S. Cen-

sus. Demographic inputs into the generator component include:

- People Who Walk to Work (People per acre)
- Population Density (People per acre)
- Employment Density (Employees per acre)
- Age Density (Seniors >65 per acre)
- Age Density (Children <17 per acre)
- Household Income
- Existing Land Use
- Proposed Mixed Use

The concept behind the pedestrian generator component is that areas where more people live and work are more likely to have higher levels of pedestrian activity. It also accounts for concentrations of vulnerable age and income populations. The final inputs of land use make the connection between land uses and where people live and work.

People who walk to work and household income were calculated from data received through the American Community Survey 5-year estimates. Population density, age density (seniors >65), and age density (children <17) are based on the 2010 U.S. Census data. Employment density is based on Longitudinal Employer-Household Dynamics (LEHD).

Similar to the pedestrian attractor component, each input was assigned a point value and multiplier (see Table 2). For each individual input, classes were created where there were natural breaks in the data with each class receiving a point value. The exception was with household income. The highest point value break was given to those areas with a household of four with an average income below $22,350, which was the 2011 poverty threshold. The Minnesota median household income was used as the

Table 2: Pedestrian Generators Inputs

Census Mobility: People who walk to work per acre	Points	Multiplier	Final Score
0 - 0.21	0	2	0
0.21 - 0.72	1		2
0.72 - 1.21	2		4

Population Density (People Per Acre)	Points	Multiplier	Final Score
0 - 6.3	1	2	2
6.3 - 20.64	2		4
20.64 - 81.27	3		6

Employment Density (Employees Per Acre)	Points	Multiplier	Final Score
1.0 - 5.0	1	2	2
5.0 - 15.0	2		4
> 15.0	3		6

Age Density: Senior Citizens per acre	Points	Multiplier	Final Score
0 - 0.99	0	2	0
0.99 - 11.07	1		2
11.07 - 43.25	2		4

Household Income	Points	Multiplier	Final Score
>$57,243	1	1	1
$22,350 - $57,243 (MN Median)	2		2
< $22,350 (2011 HHS Poverty)	3		3

Age Density: Children (<17) Per Acre	Points	Multiplier	Final Score
0 - 1.35	0	1	0
1.35 - 4.19	1		1
4.19 - 14.30	2		2

Existing Mixed Land Use Adjacencies	Points	Multiplier	Final Score
Housing near employment	1	1	1
Housing near commercial	2		2
Housing near employment & commercial	3		3

Proposed Mixed Use	Points	Multiplier	Final Score
Future Land Use from Comp Plan	2	1	2

other break point. For the land use adjacency generators, near proximity was defined as ¼ mile. Housing included high-density, medium-density, and multi-family housing while commercial included shopping centers and commercial strip land uses. Near employment included those areas with >15 employees per acre, which was also calculated as a separate generator.

Once all of the individual inputs were calculated for the entire city, the points for each input were summed together to determine a cell's pedestrian generator value. The model results of the pedestrian generator component are shown on figure 3.

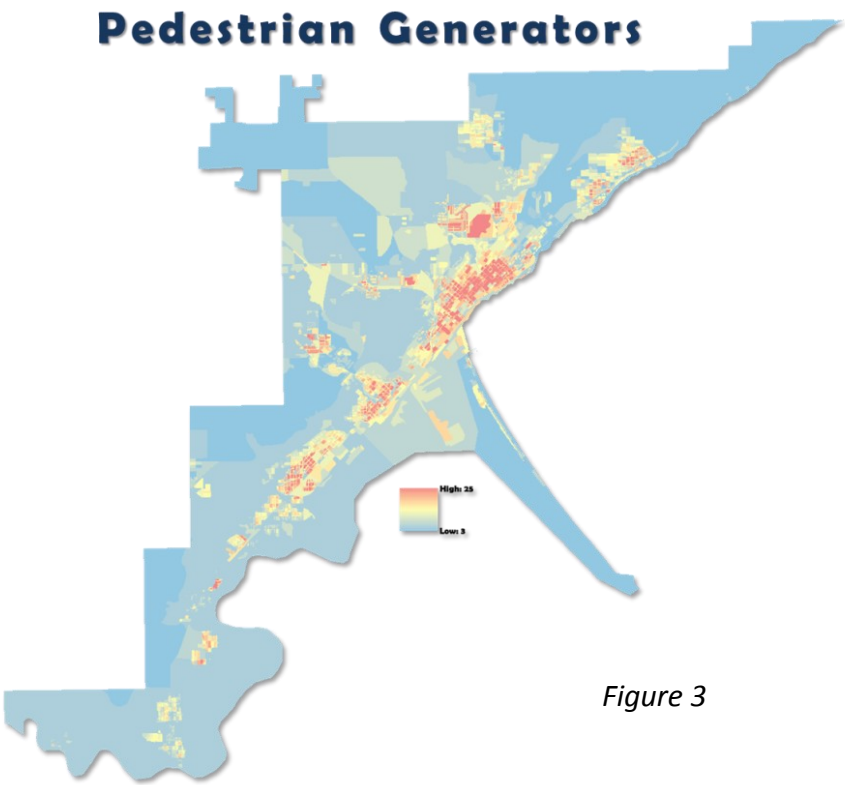

Figure 3

Pedestrian Detractors

Pedestrian detractors are features that discourage or detract people from walking in an area or could potentially serve as a barrier for pedestrians to cross. Inputs in the detractor component include:

- Pedestrian / Vehicle Collisions
- ADT (Average Daily Trips) of a roadway
- Speed Limit
- Railroads
- Freeways
- Slope

Refer to table 3 to see how detractors were valued in this component. Pedestrian crashes for the last decade were obtained from the Minnesota Crash Mapping Analysis Tool (MnCMAT). A buffer of 1/16 mile was placed around each individual crash and overlapping crashes were averaged over the decade. The most recent year available for the average daily traffic

(ADT) of a segment of roadway was used as the input. Railroads and freeways were placed into a single category as being a detractor simply by their location.

While a detractor is negative for the walkability of an area, it increases the importance for pedestrian treatments if there is potential for higher pedestrian traffic according to the attractor and generator components. Areas where the generator and attractor components scored high, but barriers such as a freeway or missing sidewalk exist, should receive highest priority for treatments. See figure 4 for the model results of the pedestrian detractor component.

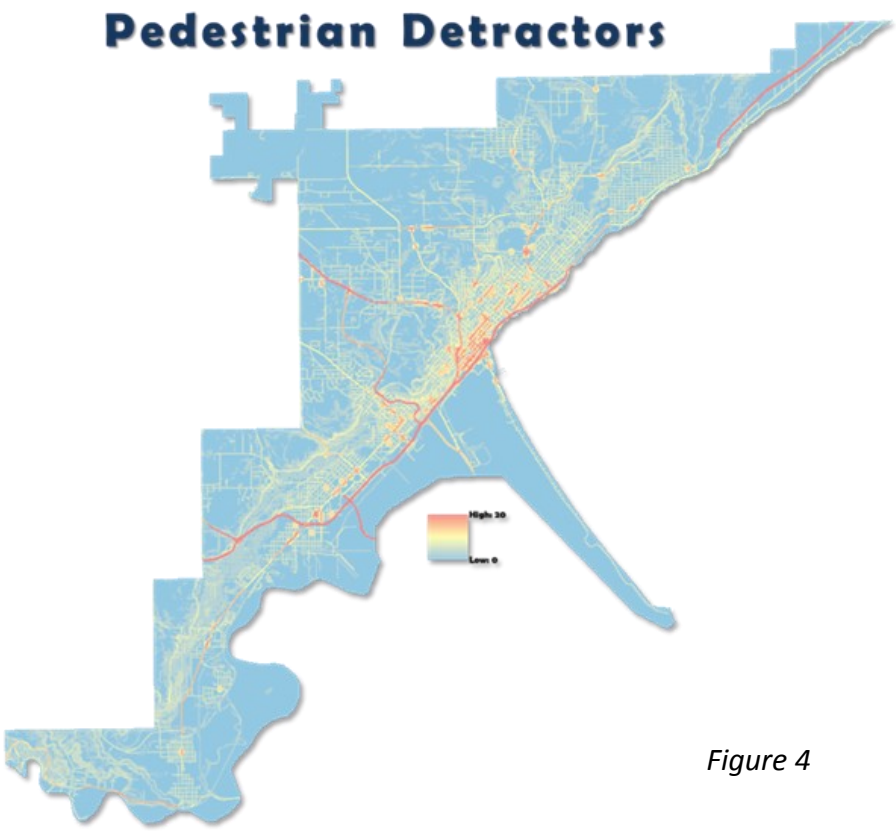

Figure 4

Table 3: Pedestrian Detractors Inputs

Collisions Per Year (1/16 mile buffer applied to each collision	Points	Multiplier	Final Score
0	0	3	0
0 - 0.5	1		3
0.5 - 0.99	2		6
> 1	3		9

Average Daily Trips	Points	Multiplier	Final Score
0 - 5,000	0	2	0
5,000 - 15,000	1		2
15,000 - 25,000	2		4
> 25,000	3		6

Speed	Points	Multiplier	Final Score
< 25	0	2	0
25 - 35	1		2
35 - 45	2		4
> 45	3		6

Railroads	Points	Multiplier	Final Score
	1	1	1

Freeways	Points	Multiplier	Final Score
	1	1	1

Slope	Points	Multiplier	Final Score
> 25 %	0	1	0
10% - 25%	1		1
< 10%	2		2

Pedestrian Composite Model

The composite model combines the attractors, generators, and detractors components to determine the areas with the highest combination of points. Cell values for each component were overlaid on one another and a sum of all three components was assigned to that cell for the final composite model. The composite value identifies areas with the highest overall pedestrian priority. It should also serve as a guide to where pedestrian facilities are needed most based on the highest concentration of factors. See figure 5 for the final results of the Pedestrian Composite Model.

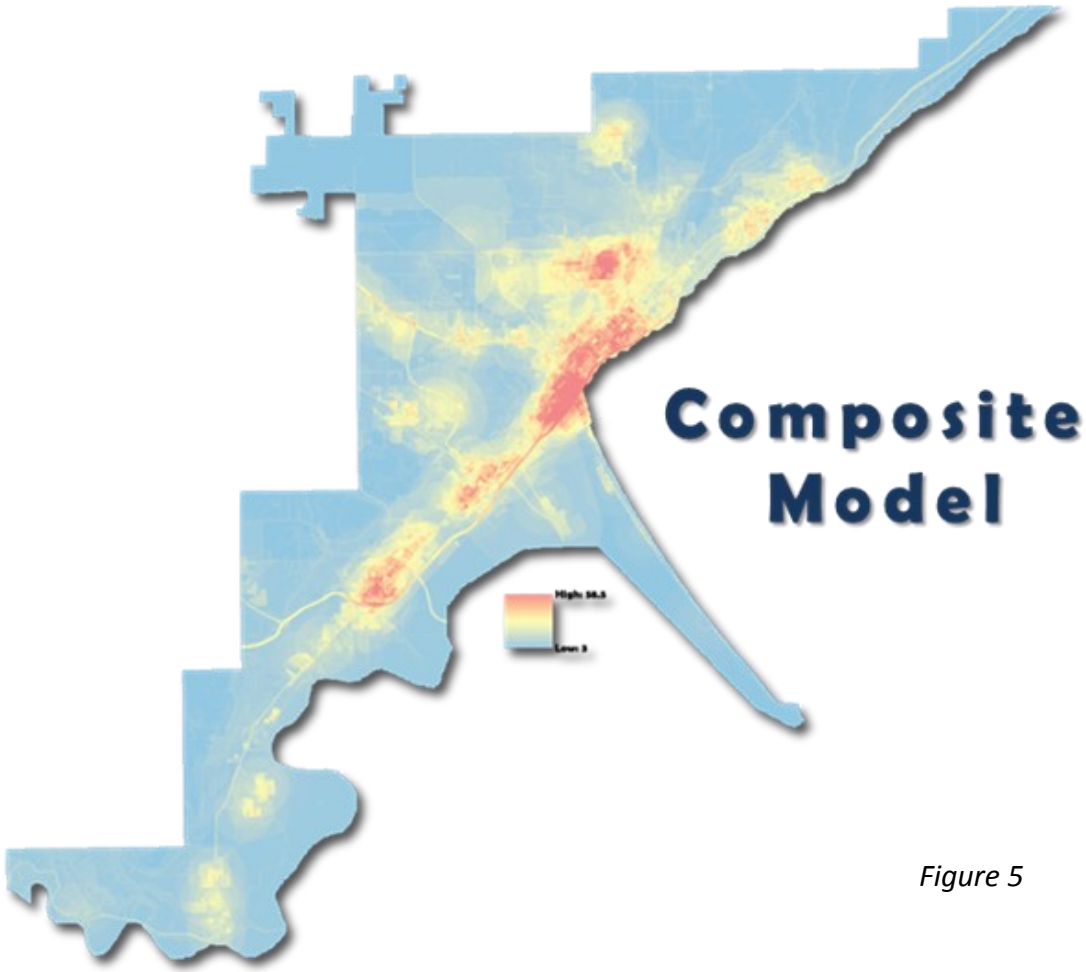

Figure 5

Sidewalk Guidelines

With all of the information that was collected for this sidewalk study, the question of where should sidewalks be located needed some answers. The information presented below attempts to bring clarity to where sidewalks should be located relative to the area roadway network. This information includes what the experts say, what factors influence sidewalk location, what other communities are doing, existing policies and guidelines and influencing factors. This information will be helpful as street reconstruction projects move toward the design stage and questions of if a sidewalk should be included and where it will be located can be answered.

What the Experts Say

Best sidewalk practices are described below by the U.S. Department of Transportation (USDOT) Federal Highway Administration (FHWA), National Center for Safe Routes to School , Institute of Transportation Engineers (ITE), and American Planning Association (APA). Guidance documents were developed to assist communities with decisions on how to best improve their sidewalk networks.

U.S. DOT/FHWA

U.S. Department of Transportation Designing Sidewalks and Trails for Access Chapter 4-Sidewalk Design Guidelines and Existing Practices

Recommendations:

- Sidewalks form the backbone of the pedestrian transportation network.
- Sidewalks "reduce the incidence of pedestrian collisions, injuries, and deaths in residential areas and along two-lane roadways."
- When sidewalks are not available, pedestrians are forced to share the street with motorists, access to public transportation is restricted, and children might not have safe play areas.
- Sidewalk installation and the linking of pedestrian routes to transpor-

tation stops and major corridors should always be a priority.
The decision to install sidewalks should not be optional. "Sidewalks should be built and maintained in all urban areas, along non-Interstate public highway rights-of-way, in commercial areas where the public is invited, and between all commercial transportation stops and public areas" (Institute of Transportation Engineers, Technical Council Committee).
http://www.fhwa.dot.gov/environment/sidewalks/chap4a.htm

National Center for Safe Routes to School

Safe Routes to School Guide-Sidewalks

Paved sidewalks are “pedestrian lanes” that provide people with space to travel within the public right-of-way separated from motor vehicles and on-road bicycles. Streets that do not have sidewalks, particularly those on routes where children walk or bike to school, should be identified and assessed to determine if retrofitting these streets with sidewalks is appropriate. Where feasible, sidewalks should be provided on both sides of the street.

- According to a study by the University of North Carolina Highway Safety Research Center conducted for the Federal Highway Administration, the likelihood of a site with a paved sidewalk being a crash site is 88.2% lower than a site without a sidewalk after accounting for traffic volume and speed limits.
- Many parents are not willing to allow their children to walk to school if there is no place for them to walk.

The area between the street and the worn path or sidewalk is a ‘buffer zone’ which provides space between pedestrians and motor vehicles. Unfortunately, when sidewalks are built along major arterial streets, many tend to not include a ‘buffer zone’, thus placing pedestrians uncomfortably close to high-speed traffic.
http://guide.saferoutesinfo.org/engineering/sidewalks.cfm

Institute of Transportation Engineers

Design and Safety of Pedestrian Facilities

- It is recommended that local state agencies adopt guidelines for the location and installation of pedestrian facilities consistent with the Americans with Disabilities Act (ADA) rules.
- All roadways should have some type of walking facility out of the vehicular traveled way included in the initial construction.
- The purpose of the walkways is to provide direct connections between residences and activity areas.

Accessible Rights-of-Way: A Design Guide

This design guide was developed by the U.S. Architectural and Transportation Barriers Compliance Board (the Access Board) in collaboration with the U.S. Department of Transportation (DOT)/Federal Highway Administration (FHWA) to assist public works and transportation agencies covered by title II of the Americans with Disabilities Act (ADA) in designing and constructing public sidewalks and street crossings.

- Shared-use paths may also serve a pedestrian circulation/ transportation function, particularly in suburban and rural rights-of-way. Where such a route is located in a public right-of-way and provides a direct pedestrian connection between neighborhoods, residential areas, schools, employment centers, and other origins and destinations, it must be accessible.
- In urban areas, sidewalks predominate; in outlying areas and in the pedestrian transportation corridors that link them to other destinations, shared-use paths may be more common. Because each route provides a unique connection between diverse origins and destinations, such pedestrian routes, when they occupy the public right-of-way, must be designed and constructed to be accessible.
- Given the importance of pedestrianism as a transportation mode and the fact that the pedestrian routes are used even when affected by rain, snow, or ice, providing more than the minimum of access features is strongly encouraged.

Table 5: Institute of Transportation Engineers Guidelines for Installing Sidewalks

Land-Use/Roadway Functional Classification/ and Dwelling Unit	New Urban and Suburban Streets	Existing Urban and Suburban Streets
Commercial and Industrial (All Streets)	Both Sides.	Both sides. Every effort should be made to add sidewalks where they do not exist and complete missing links.
Residential (Major Arterials)	Both sides.	Both sides.
Residential (Collectors)	Both sides.	Multifamily—both sides. Single family dwelling—prefer both sides; require at least one side.
Residential (Local Streets) More than 4 units per acre	Both sides.	Prefer both sides; require at least one side.
1 to 4 units per acre	Prefer both sides; require at least one side.	At least 4 foot shoulder on both sides required.
Less than 1 unit per acre	One side preferred; shoulder on both sides required.	One side preferred, at least 4 foot shoulder on both sides required.

Notes:

Any local street within two blocks of a school site that would be on a walking route to school—sidewalk and curb and gutter required.

Sidewalks may be omitted on one side of a new street where that side clearly cannot be developed and where there are no existing or anticipated uses that would generate pedestrian trips on that side.

Where there are service roads, the sidewalk adjacent to the main road may be eliminated and replaced by a sidewalk adjacent to the service road on the side away from the main road.

For rural roads not likely to serve development, a shoulder at least 4 feet in width, preferably 8 feet on primary highways, should be provided. Surface material should provide a stable, mud-free walking surface.

- The utilitarian transportation function of sidewalks also suggests a high priority for accessibility. Ideally, the sidewalk network that makes up a public pedestrian circulation system should permit passage to every address and pedestrian feature on or along every pedestrian route. http://www.access-board.gov/prow ac/guide/PROWGuide.htm#3_2

American Planning Association

***Sidewalks in the Suburbs* Information Report no. 95**

- Traffic safety demands good sidewalks on each side of every residential street. Vehicular traffic and pedestrians should be segregated. It is unsafe, unreasonable and often disagreeable to pedestrians to be forced to walk on the paved roadway. Parents do not want children playing in the roadway — yet if they have roller skates, scooters or other wheeled toys, they will use the roadway unless a smooth sidewalk is available. http://www.planning.org/pas/at60/report95.htm

Factors that influence sidewalk location

It is the general policy of a number of national organizations that, with the exception of interstate highways, all roadways should have some type of facility that separates non-motorized transportation from motorized transportation, and that sidewalks should be constructed along any street or highway not provided with shoulders, even though pedestrian traffic may be light. Admittedly, this policy cannot be applied everywhere. There are, however, a number of factors regarding location or roadway characteristics that can help communities prioritize what facilities should have sidewalks. A number of these factors are included in the ITE Sidewalk Guidelines table on page 18.

Functional Classification:

Functional classification is the process in which streets and highways are grouped into "classes" or systems according to the way people use them.

Functional Classification

The process in which streets and highways are grouped into "classes", or systems, according to the way people use them. Functional classification defines the role that any particular segment of the entire roadway network plays in serving vehicular movements of people and goods. Higher classes provide mobility while lower classes provide access.

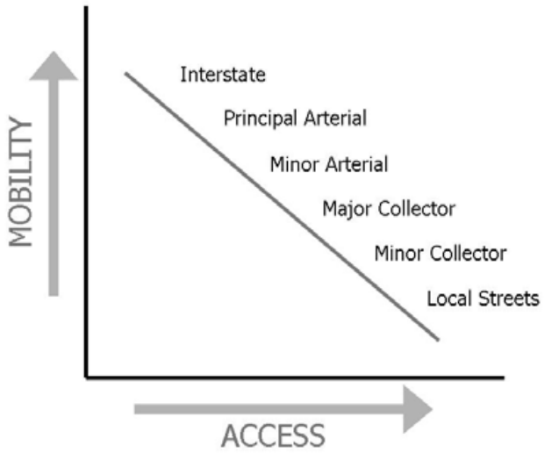

Figure 6

Roads do not work independent of each other, but make up a network for the purpose of moving people and goods from one point to another. Functional classification defines the role that any particular road segment will play in serving those movements within the network. Figure 6 displays the hierarchy of the different road classifications and the associated mobility versus access balance.

Amount of Traffic or Average Annual Daily Traffic (AADT):

AADT is an estimated yearly average of daily traffic. Adjustments are made to account for seasonal variation, but the number represents the total number of passing vehicles you would expect to find at a particular segment of roadway on any given day. "Local" city streets have low AADTs, generally below 2,000 vehicles, while higher-order roadways such as interstates often facilitate AADTs of more than 20,000. Roadways with higher levels of traffic require sidewalks to separate pedestrians from vehicles.

Traffic Speeds:

There is a strong correlation between vehicle speeds and the number and severity of crashes in urban and suburban areas; and sidewalks should therefore be a priority on roadways with higher vehicle speeds – with a buffer space between the sidewalk and the roadway.

Transit Routes:

The presence or absence of sidewalks is important for roadways designated as transit routes. Routes not served by sidewalk represent an impedance (if not a barrier) to those who want to access transit service. Riders of limited physical mobility (e.g. elderly passengers), have difficulty traversing un-level terrains in order to get to a transit stop. Sidewalks provide the important connections from transit stops to rider's destinations.

Sidewalk installation and the linking of pedestrian routes to transportation stops and major corridors should always be a priority. To better assist

How Traffic Levels are Estimated

Average Annual Daily Traffic (AADT) is an estimate of the total number of vehicles using a specific segment of roadway (in both directions) on any given day of the year. This estimate represents the total number of cars per year divided by 365 and is developed using factors to adjust for season, day of the week, and vehicle type.

safe access to transit, roadways with transit routes should have sidewalks on both sides of the street. Arterials used by transit routes are prime candidates for retrofitting to include sidewalks.

School Walking Zones:

Each school in Duluth has a walking zone specific to that school. Grade schools have a one mile walking zone around each school, junior high and high schools have a two mile walking zone. Sidewalks should be a priority in these zones in order to encourage children to walk to school and to provide them a safe area to walk.

Land Use:

The presence and degree of pedestrian activity in an area depends on the land uses that are present. Typically, the greater the number and variety of land uses in an area, the more pedestrian traffic there will be. The greater the density of certain land use types, especially commercial and residential, will also generate higher levels of pedestrian activity. In general, wherever roadside and land development conditions affect regular pedestrian movement along a highway, a sidewalk or path area should be furnished.

City of Duluth Zoning Code:

City of Duluth, MN-Unified Development Chapter section 50-23.2 states:
Unless the city engineer waives the requirement based on concerns of public safety or site/topography constraints:

1. Each proposed public or private street within the R-1, R-2, R-P, MU-N, MU-C, MU-I or MU-W districts shall include a sidewalk at least 5 ft. wide on both sides of the street;
2. Each proposed public or private street within the MU-B, I-G or I-W districts shall include a sidewalk at least 5 ft. wide on one side of the street;

http://www.duluthmn.gov/planning/zoning_regulations/documents/Article4_000.pdf

What other communities are doing

Sidewalk Policies Examined

- Rochester, MN
- Moorhead, MN
- West Fargo, ND
- Eau Claire, WI
- Kenosha, WI

Rochester, MN

Sidewalk and Trail Policy

Trail Thoroughfares and Sidewalks: Trail thoroughfares and sidewalks are a vital element of the City's transportation system -- providing access throughout the City for pedestrians and bicyclists, reducing traffic congestion, facilitating access to the transit system, and reducing emissions from automobiles. Unless otherwise exempted by these regulations, all new development shall provide sidewalk and trail thoroughfare improvements that are consistent with the City's adopted Thoroughfare and Sidewalk, Bike Path and Pedestrian Facilities Plan.

In addition to trails designated in the City's adopted Plans, the City shall require dedication of trails needed to maintain connectivity between and through subdivisions under each of the following circumstances, except where unique topographical conditions make the trails unfeasible: across any block exceeding 800 feet in length; between lots on a cul-de-sac or dead end street that abut a collector or arterial road.

Sidewalks shall be required along all public streets and shall be designed and constructed in accordance with the City's adopted Long-Range Transportation Plan and Public Works design standards.

Rochester, MN Sidewalk and Trail Policy

https://www.rochestermn.gov/departments/planning_zoning/chapter64/64220PUBLIC_ROADWAYANDTRAIL_THOROUGHFARE_DESIGNSTANDARDS.asp

Moorhead, MN

Sidewalk Policy- Moorhead City Code

It is the policy of the city of Moorhead that sidewalks be constructed along both sides of all new streets and within new cul-de-sacs. The city also may require sidewalks in older subdivisions, or other places where sidewalks do not now exist, even if those sidewalks originally were not

Moorhead, MN Sidewalk Policy- Moorhead City Code

http://www.sterlingcodifiers.com/codebook/index.php?book_id=530

required. Construction of sidewalks not covered by this policy may be required by resolution of the city council.

West Fargo, ND

Sidewalk Policy - SIDEWALKS AND DRIVEWAYS

It is the policy of the City of West Fargo that sidewalks be constructed along both sides of all streets and within cul-de-sacs. Construction of sidewalks in areas of the City not covered by this policy and where sidewalks do not presently exist may be required by the City once eighty percent (80%) of the land frontage on the street has been developed.

West Fargo, ND Sidewalk Policy - SIDEWALKS AND DRIVEWAYS

http://westfargopolice.com/LinkClick.aspx?fileticket=HMT6yD4_7E8%3d&tabid=59&mid=519

Eau Claire, WI

Sidewalk Policy- Streets and Sidewalks

Installation of sidewalks--General. Sidewalks shall be constructed as follows:

- Within new subdivisions: sidewalk construction may not be deferred within new subdivisions.
- Along streets lying within one-half mile of a public or private elementary or secondary school;
- Along any street or portion of street which is classified by the city council as a collector street or arterial street under the functional street classification system of the city;
- Where the installation of a sidewalk will connect previously constructed and existing sidewalks within the immediate area;
- When property owners who own over one-half of the frontage along a street file a petition with the city requesting that sidewalks be installed along such frontage; and

Eau Claire, WI Sidewalk Policy- Streets and Sidewalks

http://www.eauclairewi.gov/images/stories/city_attorney/pdf/ordinances/title_13.pdf

- At such other locations where the city council determines that one or more of the following conditions exist:
    - Vehicular and pedestrian conflicts present a potential danger to the health and safety of persons; or
    - The number of small children, senior citizens or other persons having special needs reside on a street and require a sidewalk to assure their safety; or
    - Parks, playgrounds or other locations exist which are attractive to large numbers of children and are not served by sidewalks.

Kenosha, WI Sidewalk Policy from CODE OF GENERAL ORDINANCES

http://www.kenosha.org/departments/court/ordinances/chapter9.pdf

Kenosha, WI

Sidewalk Policy from CODE OF GENERAL ORDINANCES

Along urban section roadways (roads with curb and gutter), public sidewalks are required by every owner of property which is presently improved by a building. The owner shall construct public sidewalks at their own expense in the public right-of-way abutting the property. The City Council may modify requirements in cases where public safety is not compromised. Sidewalks are also required at owner's expense when a property is improved by a building.

On rural section roadways (roads with roadside ditches), the property owner is responsible to construct public sidewalks when the roadway is improved to an urban section roadway. The sidewalk shall be constructed at the time of the new curb, gutter and pavement.

Complete Streets Policies

State of Minnesota: In 2008, the Minnesota Legislature passed a law requiring:

"The commissioner of transportation, in cooperation with the Metropolitan Council and representatives of counties, statutory and home rule charter cities, and towns, shall study the benefits, feasibility, and cost of adopting a complete streets policy applicable to plans to construct, reconstruct, and relocate streets and roads that includes the following elements:

- safe access for all users, including pedestrians, bicyclists, motorists, and transit riders
- bicycle and pedestrian ways in urbanized areas except where bicyclists and pedestrians are prohibited by law, where costs would be excessively disproportionate, and where there is no need for bicycle and pedestrian ways
- paved shoulders on rural roads;
- safe pedestrian travel, including people with disabilities, on sidewalks and street crossings
- utilization of the latest and best design standards; and
- consistency of complete streets plan with community context.

The Commissioner shall report findings, conclusions, and recommendations to the Senate Transportation Budget and Policy Division and the house of representatives Transportation Finance Division and Transportation and Transit Policy Subcommittee by December 5, 2009"

City of Duluth: The City of Duluth has created a Complete Streets Policy that promotes the idea of creating streets for all users including pedestrians, disabled populations, bikers and transit users. The central idea behind the Complete Streets policies being adopted by cities and states across the country is that the context of the street's location and all users

Complete Streets Definition

Complete streets are streets that are designed and operated to enable safe, attractive, and comfortable access and travel for all users, including pedestrians, bicyclists, motorists and public transport users of all ages and abilities.

of the street should be considered in the design.

ITE Context Sensitive Design Guidelines

The Institute of Transportation Engineers (ITE) is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. They have developed some recommended practices to roadway design and included the information in the document "Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities".

What is Context Sensitive Solutions (CSS)? CSS is a different way to approach the planning and design of transportation projects. It is a process of balancing the competing needs of many stakeholders starting in the earliest stages of project development. It is also flexibility in the application of design controls, guidelines and standards to design a facility that is safe for all users regardless of the mode of travel they choose.

CSS share a common set of principles:

• "Balance safety, mobility, community and environmental goals in all projects;

• Involve the public and stakeholders early and continuously throughout the planning and project development process;

• Use an interdisciplinary team tailored to project needs;

• Address all modes of travel;

• Apply flexibility inherent in design standards; and

• Incorporate aesthetics as an integral part of good design."

Context Sensitive Solutions Definition

Context Sensitive Solutions (CSS) is the art of creating public works projects that meet the needs of the users, the neighboring communities, and the environment. It integrates projects into the context or setting in a sensitive manner through careful planning, consideration of different perspectives, and tailoring designs to particular project circumstances.

Center for Transportation Studies at the University of Minnesota