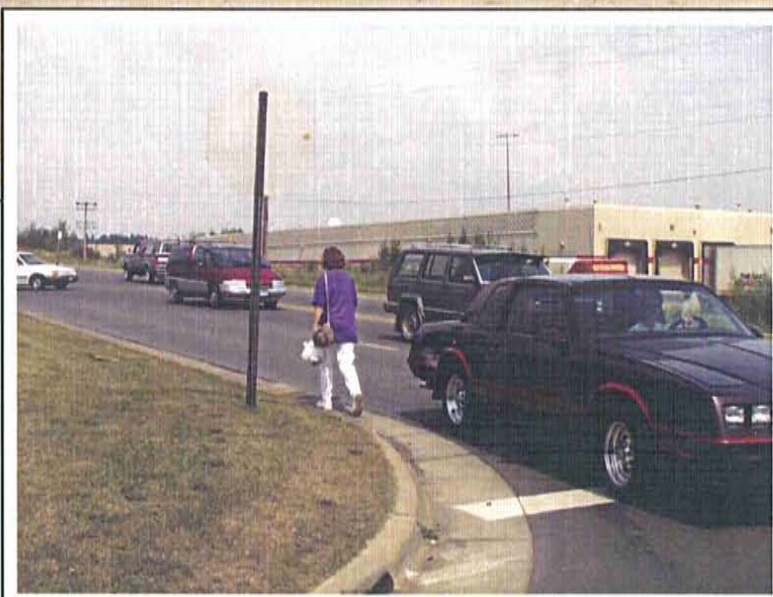


# Metropolitan Pedestrian Plan

Duluth-Superior Metropolitan  
Interstate Committee  
February 1999



Identifying policies, programs,  
and projects that will improve  
the pedestrian environment in  
the Duluth-Superior area.



# Metropolitan Pedestrian Plan

**For the Duluth-Superior Metropolitan Area**

**February 1999**

**Prepared by the:  
Duluth-Superior Metropolitan Interstate Committee**



**Duluth Superior urban area communities cooperating in planning and development  
through a joint venture of the: Arrowhead Regional Development Commission and  
the Northwest Regional Planning Commission**



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Copies of the study are available from the:  
Duluth-Superior Metropolitan Interstate Committee  
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*“Guiding the future of transportation  
and planning for the  
Twin Ports area.”*

# I ntroduction

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The purpose of this plan is to identify policies, programs and projects that will improve the pedestrian environment in the Duluth-Superior area. An improved pedestrian environment is defined as a walkable community where walking is a viable mode of transportation. Walking is the most basic form of transportation; virtually everyone is a pedestrian at some point, even if they only walk from their front door to the car door or the bus stop. As with bicycling, walking has the potential to play a more important role in our future. With many trips less than a mile long, a comfortable walking distance for many people, we need to actively welcome and accommodate pedestrians.



Pedestrian issues are important for a number of reasons. Walking is an essential element in multimodal transportation systems; it contributes to the quality of community life, and contributes to personal well being.

The pedestrian's role in the transportation system is fundamental. Automobile and transit trips usually have a pedestrian

segment included in them. Other trips are done completely on foot. In some areas, non-motorized transportation modes account for a sizable share of commuters. According to the 1990 Census, there are 100 medium sized cities and towns where 15% or more of all commuters walk or bike to work. If conditions for walking are right, more people will bike, utilize transit and replace short automobile trips with walking. The benefits are many including less congested roadways and improved air quality.

Traffic conditions on urban and suburban streets, rural roads, and highways greatly affect the livability, comfort, and safety of a community. As communities develop, traffic conditions can change in ways that threaten both quality of life and economic vitality. Studies have shown that communities and neighborhoods that are walkable are friendlier and safer places to live. When streets and roads are safe and comfortable, communities enjoy an enhanced quality of life.



Walking is not only a means of transportation; it is also a recreational activity. Walking improves health, is non-polluting, promotes social interaction and is an inexpensive form of recreation. Ninety percent of all Americans walk for recreation.

Regular walking reduces the risk of heart disease, relieves stress and improves mental health. Walking also allows people to experience their surroundings in a unique way.

One of the most important issues to pedestrians is safety. Walking is an unregulated activity in which pedestrians are much less restricted than automobile users. Controlling interactions between pedestrians and automobiles is challenging. Creating safe areas where pedestrians and automobiles interact is only half of the safety equation. Getting the pedestrian to use these areas and follow pedestrian safety rules is also very important.



Traffic safety has traditionally focused on the automobile user. Hundreds of millions of dollars in federal safety funds are spent every year to make our roads safer. However, comparatively small amounts of safety funds are spent on pedestrian safety. Of the total federal safety funds going to Wisconsin and Minnesota, 99.9% is spent on automobile safety. Many of these safety improvements allow automobile drivers to move at higher speeds, which makes the roads even less safe for pedestrians. On

average, automobiles in Minnesota and Wisconsin kill almost 120 pedestrians each year. An additional 2400 pedestrians are injured per year by automobiles. It is for these reasons that an increased focus on pedestrian safety is necessary.

In planning for local transportation, it should always be assumed that every street and road would be used, at least occasionally, by pedestrians. Therefore, whenever a new road is built or an existing road reconstructed, consideration should be given to how pedestrians can best be accommodated. It is always cheaper to build pedestrian facilities when building a new roadway than to retrofit existing roadways. It is also important to ensure that pedestrian facilities include accommodations for disabled persons.





# Pedestrian Work Group

A Pedestrian Work Group was assembled to assist MIC Staff in the development of the Pedestrian Plan. The Work Group represented neighborhood groups, law enforcement, public works departments, Departments of Transportation from Minnesota and Wisconsin, senior citizens, city planning, school districts and local pedestrian groups. This group was invaluable in formulating goals, generating ideas, describing problem areas and identifying solutions for the plan.

## Vision Statement

The first task completed by the Work Group was to develop a vision statement. Vision statements are important because they provide focus and meaning to a plan. A vision statement allows a metropolitan area to take control of its own destiny, rather than simply accepting current trends and entrenching the status quo. A community with a vision of becoming more walkable can decide to reject projects, policies and programs that will deter people from walking and to prioritize actions that will increase pedestrian safety and encourage walking.

## Pedestrian Work Group:

- **Donna Andrews** - *Superior Police Department*
- **Kristie Billiar** - *Minnesota Department of Transportation State Pedestrian Coordinator*
- **Gary Blaisdell** - *City of Superior Engineering*
- **Craig Brouse** - *City of Duluth Engineering*
- **Jeff Brown** - *Duluth Bike Pedestrian Transit Coalition*
- **Kyle Deming** - *City of Duluth Planning*
- **Martin Forbes** - *Wisconsin Department of Transportation*
- **Bonnie Fuller-Kask** - *Chester Park Elementary School Safety Taskforce*
- **Bryn Jacobson** - *Metropolitan Interstate Committee Transportation Advisory Committee Pedestrian/Bicycle Representative*
- **Laura Johnson** - *Duluth Public Schools*
- **Kathy Larsen** - *City of Duluth Seniors Program Coordinator*
- **Myrna Matheson** - *East Hillside/Endion Coalition*
- **Sharon Montgomery** - *Duluth Police Department*
- **Dave Pickett** - *Minnesota Department of Transportation*
- **Ron Thorn** - *Duluth Police Department*

## Pedestrian Work Group Vision Statement:

**“To create and maintain a year round pedestrian-friendly community that recognizes walking as an essential mode of transportation accessible to all persons.**

**We recognize the importance of educating the public about pedestrian rights, responsibilities, and the value of a multi-modal transportation system.”**



## ***Goals and Objectives***

The Pedestrian Work Group spent a considerable amount of time developing goals and objectives. These are goals the group wanted the Pedestrian Plan to accomplish and how to go about accomplishing them. The goals focused on the importance of including pedestrian issues in comprehensive planning, educating the public about pedestrian issues, and maintaining and improving the pedestrian environment. The goals were divided into three categories; policy, facility and education.

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### **Policy Goals**

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#### **Goal: Interconnect road and sidewalk programs including, planning, design, engineering, maintenance, etc.**

- Objective: Examine efficiencies of integrating road and sidewalk programs.
- Objective: Develop a policy model for each jurisdiction to integrate sidewalk and road programs.
- Objective: Develop a model ordinance or city code that requires interrelated road and sidewalk programs.



#### **Goal: Promote pedestrian friendly environments that encourage the use of all modes of transportation.**

- Objective: Require all developments to include pedestrian facilities.
- Objective: Incorporate pedestrian interests in the design review of development proposals by involving alternative mode interests in the review process.
- Objective: Develop a design review model for local jurisdictions. Examine what exists in Seattle, Portland and Madison.

#### **Goal: Encourage jurisdictions to include pedestrian issues in their planning processes.**

- Objective: Meet with city councils/jurisdictions on pedestrian education/issues.
- Objective: Opportunity for City of Duluth to incorporate pedestrian comments.
- Objective: Include pedestrian issues as agenda items in City of Duluth planning district meetings in Comprehensive Plan process.

#### **Goal: Promote neighborhood preservation policies.**

- Objective: Examine how land use and transportation are connected and the positive effects increased pedestrian activity has on communities.
- Objective: Promote pedestrian connectivity between neighborhoods, recreational facilities,

shopping/commercial areas, schools, medical facilities, and transit stops.

- Objective: Promoting an aesthetically pleasing pedestrian environment.
- Objective: Promote traditional neighborhood development.

**Goal: Establish a local Bike/Pedestrian coordinator or advisory committee to assist with bike/pedestrian issues.**

- Objective: Communicate with jurisdictions as to how this coordinator or committee could be integrated within existing organizational structures and how this could be a cooperative effort.

**Goal: Encourage public participation in transportation planning.**

- Objective: Rework MIC's public participation policy.
- Objective: Determine how to overcome barriers for people to participate in public meetings. Identified barriers include work schedules, daycare, transportation and apathy.



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**Education Goals**

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**Goal: Educate the public beyond the mandated K-10 pedestrian safety education.**

- Objective: Promote early childhood and family pedestrian safety education.
- Objective: Educate drivers and driver education students about speed and its effect on pedestrian accidents.

**Goal: Increase awareness of the pedestrian and non-motorized (wheelchair, bike, roller blades, etc.)**

- Objective: Publish meeting times, dates, and locations of Duluth Bike, Pedestrian, and Transit Coalition Meetings.
- Objective: Increase public awareness through public safety announcements.
- Objective: Promote programs such as the Wisconsin Pedestrian Program that rewards drivers for yielding to pedestrians.
- Objective: Implement the Lakewalk Safety Task Force public awareness recommendations.
- Objective: Promote a "share the road" program.
- Objective: Define responsibilities and opportunities for education on pedestrian and safety issues.

**Goal: Promote pedestrian safety through the enforcement of related traffic laws and pedestrian ordinances.**

## Facility Goals

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**Goal: Examine the specific pedestrian needs of groups like youth, students, disabled, and senior citizens in the development and maintenance of pedestrian facilities.**

- Objective: Review timing of streetlights and crosswalks. Update timing requirements to accommodate primary users of the intersection.
- Objective: Curb cuts need to be examined. Examine progress and process of current programs mandated by ADA legislation.
- Objective: Promote installation of warning signs and flashing yellow lights. Examine new technologies in pedestrian signalization.



**Goal: Retrofit existing areas with pedestrian friendly facilities.**

- Objective: Identify pedestrian areas in need of crosswalk painting.

- Objective: Produce a list of areas in need of pedestrian facility retrofit.
- Objective: Identify potential funding sources.

**Goal: Coordinate pedestrian facility development with local transit operations.**

- Objective: Connect all bus stops and shelters with pedestrian facilities





# Current Conditions

An important component of any pedestrian plan is a description of the community pedestrian environment. Included in this chapter is:

- a description of pedestrian barriers,
- facility deficiencies,
- how people in this area get to work,
- local pedestrian related ordinances,
- statewide pedestrian information,
- local pedestrian accident analysis, and
- a brief description of local sidewalk improvement programs/processes.

## Barriers

In most areas, the existence of physical barriers makes pedestrian mobility difficult or in some cases impossible. Many types of barriers can be overcome with the addition of pedestrian facilities, however geographic barriers are more difficult to deal with. The Pedestrian Work Group identified the following list of pedestrian barriers:

- St. Louis River/Superior Bay – this river system divides Duluth and Superior and has only one pedestrian crossing at the Bong Bridge.
- Interstate 35 – in many places there are no crossings.
- Trunk Highways 53 & 194 – this highway carries a large amount of traffic and is intimidating to cross (especially from 26<sup>th</sup> Avenue East to 60<sup>th</sup> Avenue East).
- London Road – a wide road with few traffic controls and high amounts of traffic provides infrequent gaps for pedestrian crossing.
- Grand Avenue - a wide road with few traffic controls and high amounts of

traffic provides infrequent gaps for pedestrian crossing.

- Belknap Street - a high traffic street with infrequent gaps in traffic for pedestrian crossing.
- Discontinuous or misnamed roads make it hard to navigate some between some neighborhoods.
- Discontinuous sidewalks discourage walking because of a lack of a direct route.
- The Minnesota Slip Bridge between the Duluth Entertainment and Convention Center (DECC) and Canal Park is not operable or accessible to pedestrians before 10 a.m. in the summer.
- Timely snow removal and lack of curb cuts make it difficult for disabled population.
- Wide streets with short pedestrian signal timing are difficult for senior citizens to cross.
- Parking lots lacking designated walkways are dangerous to walk through.
- Vegetation overgrowth on pedestrian facilities obstructs easy access.
- Rail lines – crossing in designated areas forces some pedestrians to walk out of their way.
- The topography of Duluth in particular makes it difficult for seniors and others to walk up and down the steep hills.





## Deficiencies

The Pedestrian Work Group also identified deficiencies in the pedestrian facility network in the Duluth-Superior area. This list does not include all pedestrian facility deficiencies but highlights some of the more important issues.

- Miller Hill Mall area lacks suitable sidewalks.
- Crossings near senior citizen apartment areas lack stoplights, need longer timing of crosswalk signals, and have access problems for seniors.
- Lack of sidewalks along arterials near some schools and universities.
- Lack of sidewalks near some elementary schools cause all students to be bussed regardless of where they live.
- Most schools in this area have bus circulation problems at the school site. There is a need to separate parking, bus stops and pedestrian facilities.
- Many crossings throughout the area lack marked crosswalks.
- The Bong Bridge pedestrian walk is not maintained in winter, closing the only pedestrian connection between Duluth and Superior.
- There is a lack of neighborhood commercial areas and other mixed-use land use to accommodate pedestrians.
- Pedestrian access within current development patterns is insufficient.
- There is a lack of enforcement of pedestrian laws.
- Lack of sidewalks where dirt paths show extensive pedestrian activity.

## Journey to Work

The following information is from the 1990 Census Transportation Planning Package

(CTPP). This information gives a rough view of how workers in the Duluth-Superior metropolitan area get to work.

People will walk or bike to work under the right conditions. Currently, only 7 percent of commuters walk or bike to work in the Duluth-Superior area. Granted that topography and climate can limit walking and biking, many improvements can still be made. Map 1 shows the percent of commuters who walk to work in this area.

**Table 1: Means of Transportation to Work**

Drove Alone	72%	37,923
Carpool	13%	6,758
Bus	5%	2,357
Taxi	0%	76
Motorcycle	0%	55
Bicycle	1%	266
Walk	6%	3,366
Work at Home	3%	1,334
Other	0%	218
TOTAL	100%	52,353

As Table 1 indicates, the majority of workers in the Duluth-Superior area drive alone to work. A number of factors may contribute to this. Among them are cheap gas, free or inexpensive parking, convenience, and lack of traffic congestion.

**Table 2: Travel Time to Work by Mode of Transportation (in minutes)**

Drove Alone	14.6
Carpool	19.9
Bus	26.4
Bicycle or Walk	10.6
Taxi, Motorcycle, other	12.0
AVERAGE	15.2

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Travel times by mode of transportation show that workers who walk or bike to work have the shortest trip duration, most likely indicating they live in close proximity to their place of work. Workers who take the bus to work have the longest trip duration, however an average trip length of slightly more than 26 minutes is very reasonable for transit riders. An average trip length of 15 minutes for workers who drive alone indicates that most commuters are driving a short distance to work.

**Table 3: Average Earnings of Workers by Mode of Transportation**

Drove Alone	\$21,213
Carpool	\$19,635
Bus	\$12,008
Bicycle or Walk	\$11,898
Taxi, Motorcycle, Other	\$15,650
Work at Home	\$13,660
AVERAGE	\$19,682

Table 3 indicates that the workers with the highest average incomes drive to work. Those that walk or bike to work have the lowest incomes.

## ***Pedestrian Accidents***

### ***Superior***

Accident data from 1994-1998 were analyzed and mapped to examine problem areas in Superior. Bicycle accident information was also included in the analysis to get a better idea where non-motorized traffic was in conflict with automobiles. Map 1 shows that most pedestrian and bicycle accidents occur on the major thoroughfares. Of the large amount of pedestrian accidents along Belknap Street, the majority were caused by drivers failing to yield to pedestrians.

Another high traffic street with a large amount of pedestrian accidents is Tower Avenue. The majority of the pedestrian accidents in the north Tower Avenue were centered around the night club area and most of these accidents took place between midnight and 3 a.m. Other areas on Tower Avenue with a high amount of pedestrian accidents are in the area of 12<sup>th</sup> and 13<sup>th</sup> Streets and south of 28<sup>th</sup> Street.

Of the 87 pedestrian accidents documented approximately 40 percent were considered to be the pedestrians fault. The primary reasons listed were pedestrians darting out in the street and failure of pedestrians to yield right of way to vehicles. Many of these accidents took place at dusk or after dark.

The time of year with the most accidents was July to September when 34 percent of the pedestrian accidents took place. When factoring in the bicycle accidents with pedestrian accidents, the summer months of June to August are the worst for accidents. School children out for the summer may contribute to the higher amount of pedestrian/vehicle and bicycle/vehicle accidents.

### ***Duluth***

Accident data from 1994-1998 were analyzed and mapped to examine problem areas in Duluth. There were 254 motor vehicle/pedestrian accidents in this five year time period.

By examining the mapped accidents, it was obvious that many of the accidents were located in the areas of the city with the most pedestrian activity. Downtown Duluth combined with the Central Hillside had 105 pedestrian accidents over the five year period. Of these, approximately 20 percent were in the afternoon peak traffic time from 3:30 p.m. to 5:30 p.m.

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In the East Hillside area from 8<sup>th</sup> Avenue East to 21<sup>st</sup> Avenue East below Skyline Drive and 9<sup>th</sup> Street, there were 40 accidents. Over 40 percent of the accidents in this area were during the afternoon peak traffic time of 3:30 p.m. to 5:30 p.m. Very few accidents occurred in the morning peak traffic time.

The following tables are a summary of the road segments and intersections with the most pedestrian accidents.

**Table 4: Areas of High Pedestrian Accidents - Duluth**

Road Segment	# of Accidents
Superior St. – 4 <sup>th</sup> Ave. E. to 4 <sup>th</sup> Ave. W.	19
Lake Ave. – Superior St. to 4 <sup>th</sup> St.	12
1 <sup>st</sup> Ave. E. – 1 <sup>st</sup> Street to 13 <sup>th</sup> St.	12
1 <sup>st</sup> St. – 6 <sup>th</sup> Ave. W. to 9 <sup>th</sup> Ave. E.	11
6 <sup>th</sup> Ave. E. – 4 <sup>th</sup> St. to 7 <sup>th</sup> St.	10
Grand Ave. – 35 <sup>th</sup> Ave. W. to 56 <sup>th</sup> Ave. W.	10
Superior St. – 12 <sup>th</sup> Ave. E. to 19 <sup>th</sup> Ave. E.	9
1 <sup>st</sup> Ave W. – 1 <sup>st</sup> St. to 4 <sup>th</sup> St.	8
W. 3 <sup>rd</sup> St. – 21 <sup>st</sup> Ave W. to 28 <sup>th</sup> Ave. W.	7

The roadway segment with the highest number of pedestrian accidents is also the area with the most pedestrian traffic. The two areas outside of downtown with high pedestrian accidents are Grand Avenue from 35<sup>th</sup> Avenue West to 56<sup>th</sup> Avenue West and Superior Street from 12<sup>th</sup> Avenue East to 19<sup>th</sup> Avenue East. The Grand Avenue segment is a busy four-lane arterial with a high amount of traffic. This roadway is

difficult to cross for pedestrians and the number of accidents reflects this. East Superior Street is another high traffic corridor with over 20,000 vehicles per day. This roadway is also difficult to cross at certain times of the day.

**Table 5: Intersections with High Pedestrian Accidents - Duluth**

Intersection	# of Accidents
4 <sup>th</sup> Ave W. & Superior St.	5
2 <sup>nd</sup> Ave. W. & Superior St.	5
6 <sup>th</sup> Ave. E. & 4 <sup>th</sup> St.	5
Lake Ave. & 1 <sup>st</sup> St.	4
Lake Ave. & 4 <sup>th</sup> St.	4
4 <sup>th</sup> Ave. E. & 3 <sup>rd</sup> St.	4
20 <sup>th</sup> Ave. W. & Superior St.	4
Central Ave. & Bristol St.	4

Table 5 reflects the areas of high pedestrian accidents. These particular intersections are usually roadways with high traffic where there is also high pedestrian activity.

### ***Statewide Pedestrian Environment***

The information in this section is designed to provide a brief look at the statewide pedestrian environment in Minnesota and Wisconsin. The source of this information is the Environmental Working Group, a non-profit environmental research organization based in Washington, D.C. This group compiled data from the U.S. Department of Transportation and the Federal Highway Administration.

## Minnesota

**Table 6: Pedestrian Fatalities in Minnesota, 1986-1995**

Average Annual Pedestrian Fatalities	58
Estimated Average # of Incapacitating Injuries per Year	500
Estimated Average # of Non-Incapacitating Injuries per Year	692
Estimated Annual Pedestrian Fatality Rate, per 100,000	1.3
Percent of All Auto-Related Fatalities Involving Pedestrians	10%

Table 6 shows the high number of pedestrians that are killed or injured in Minnesota each year. This information shows that pedestrian/vehicle accidents are a serious public safety problem. It underscores the need to invest more resources in pedestrian safety.

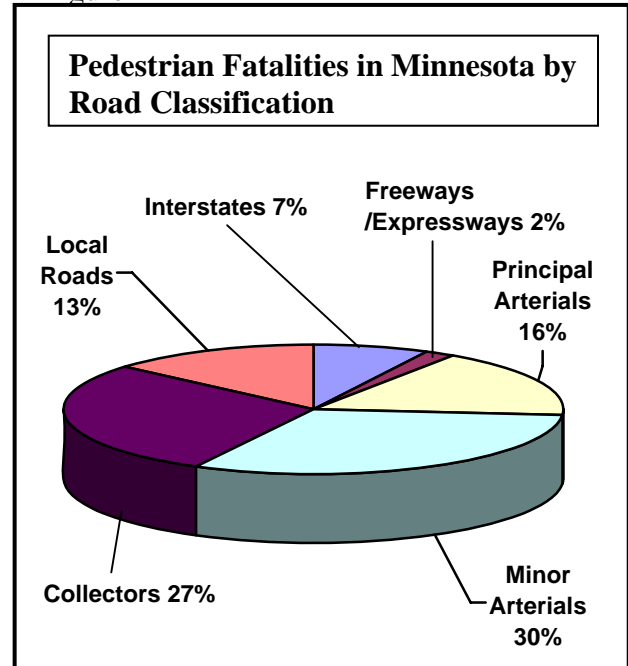
**Table 7: The Most Dangerous Metropolitan Areas for Pedestrians in Minnesota (1986-1995)**

Metropolitan Area	Average Annual Number of Pedestrian Deaths	Percentage of all Traffic Fatalities Involving Pedestrians	Percent of Population Walking to Work
1) Minneapolis – St. Paul, MN/WI	34	16%	3%
2) Duluth, MN	3	11%	6%
3) St. Cloud, MN	3	10%	7%

The Duluth-Superior metropolitan area ranks as the second most dangerous metropolitan area in the state for pedestrians. Factors considered in this ranking include the total number of pedestrian fatalities in each metropolitan

area each year, the number of pedestrians injured by vehicles and the percentage of traffic fatalities involving pedestrians.

Figure 1



The Roadway classifications in Figure 1 are determined from the concept of functional roadway classification. This concept groups or classifies roadways based on the importance of each roadway to the entire roadway system. In order of importance or hierarchy, the functional classification system is as follows:

- Interstates
- Freeways/Expressways
- Principal Arterials
- Minor Arterials
- Collectors
- Local Streets

The last three classes are normally residential in nature. When examining Figure 1, we can see that 70 percent of pedestrian fatalities in Minnesota take place on neighborhood streets.

**Table 8: Pedestrian Fatalities in Wisconsin, 1986-1995**

Average Annual Pedestrian Fatalities	61
Estimated Average # of Incapacitating Injuries per Year	521
Estimated Average # of Non-Incapacitating Injuries per Year	721
Estimated Annual Pedestrian Fatality Rate, per 100,000	1.7
Percent of All Auto-Related Fatalities Involving Pedestrians	8%

Table 8 displays the number of pedestrians killed or injured each year in Wisconsin. This public safety problem indicates that Wisconsin also needs to invest more resources in pedestrian safety.

**Table 9: The Most Dangerous Metropolitan Areas for Pedestrians in Wisconsin (1986-1995)**

Metropolitan Area	Average Annual Number of Pedestrian Deaths	Percentage of all Traffic Fatalities Involving Pedestrians	Percent of Population Walking to Work
1) Minneapolis – St. Paul, MN/WI	34	16%	3%
2) Racine, WI	2	10%	3.3%
3) Kenosha, WI	1	8%	3.3%

The reason Minneapolis – St. Paul is shown as the most dangerous metropolitan area for pedestrians in Wisconsin is that the Minneapolis - St. Paul statistical area is partially in Wisconsin although the majority of this metropolitan area is in Minnesota.

**Figure 2**

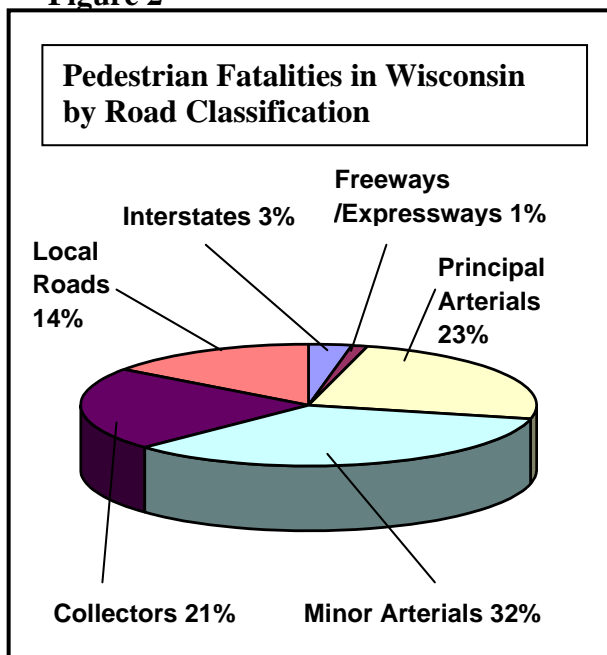


Figure 2 shows that approximately 67 percent of pedestrian fatalities in Wisconsin occur on neighborhood streets. Pedestrian safety efforts can be targeted toward minor arterials, collectors and local streets to get the most out of limited resources.

## Ordinances

Zoning ordinances, city codes, and design review regulations influence how a community grows and changes. They also shape the transportation network by funneling resources into community infrastructure such as water, sewer, and gas. Wise use of ordinances, codes, and design review regulations can support growth without many of the problems and expenditures associated with development.

The main purpose of zoning ordinances, city codes, and design review regulations are to protect and promote the public health, safety, and general welfare of the residents of a jurisdiction. More specifically, zoning

ordinances are intended to provide a precise guide for the growth and development of a city in order to accomplish the following goals:

- Facilitate the adequate provision for public services and facilities;
- promote the availability of housing affordable to persons of all income levels;
- maintain a high level of quality and character in a city's residential neighborhoods;
- ensure compatibility between land uses;
- promote economic stability of existing land uses;
- ensure the provision of adequate open space for light, air, and fire safety;
- promote a safe and effective traffic circulation system; and
- conserve and enhance the city's architectural and cultural resources.

This list of goals is not all inclusive but provides a list of ideas and concepts that zoning ordinances seek to accomplish.

### *Development Design and Zoning Can Discourage Walking*

Traffic engineers and transportation agencies have responded to traffic congestion as they have been trained to do: by recommending that we build additional roads. Two lane streets are widened with turning lanes, intersections are expanded, two lanes become four, and four lanes become six. Wider roads attract more traffic and more traffic going at faster speeds makes walking more dangerous. In many communities traffic engineers have begun campaigns to paint over existing crosswalks under the theory that the presence of crosswalks encourages walking thereby increasing the danger to walkers.

Restrictive zoning codes can also result in sidewalks that are fractured by parking lot exits and entrances. For example, local businesses may build large parking lots between their storefronts and the street to accommodate minimum parking requirements. This creates additional barriers for pedestrians. In many cases sidewalks have never been built, leaving pedestrians to navigate their way through a parking lot or walk through the grass along a busy arterial.

In areas such as these, getting around on foot is impractical and even dangerous. Low-density development and the proliferation of the "highway strip" is especially forbidding to children, senior citizens, disabled populations, and anyone who doesn't drive as access is extremely limited or non-existent.

The best way to increase walking may be to build our communities closer together, making it is easier to walk to a corner store to pick up groceries, and easier for children to walk to school. Sprawling housing subdivisions prevent such basic trips, yet in many communities zoning codes allow no other method of building. Standard zoning codes also may require building setbacks and parking requirements that turn retail areas into extensive parking lots that are unfriendly to those on foot. Changing codes to allow a mix of housing and compatible retail and promoting streets that connect rather than cul-de-sacs, is one of the most effective ways to increase walking.

Changing zoning codes to accommodate pedestrians works because it solves the problem at its source: fixing roads that are poorly designed for pedestrians. By creating pedestrian friendly zoning codes, communities have created streets and

neighborhoods that are safer for pedestrians and more pleasant places for everyone.



#### *Area Pedestrian Zoning Codes and Ordinances*

The four cities in this area: Proctor, Hermantown, Duluth, and Superior, have very little in the form of zoning code requirements for pedestrian facilities. The majority of the zoning codes and ordinances refer mostly to repair of sidewalks and who is financially responsible for paying for those repairs. Certain stipulations in local zoning requirements actually hinder pedestrian facility development. Minimum lot sizes, setback requirements, and minimum parking requirements hamper the development of pedestrian friendly areas.

Minimum lot sizes along with no requirement for sidewalks in new developments produce low density auto oriented developments. Minimum residential lot sizes spread residential areas out so much that neighborhood retail areas do not have the densities necessary to be profitable. Low density residential areas also cost more to provide basic infrastructure services such as water, gas, sewer, and roads.

Setback requirements in conjunction with minimum parking requirements remove much of the flexibility a developer has in designing new developments. The outcome is usually a building located in the center of a large parking lot. The building is difficult to access by walking because the pedestrian must walk across driveways and large parking areas. Designs with no setbacks that are located along the street are more accessible to foot traffic.

Minimum parking requirements along with the lack of requirements for pedestrian facilities in new developments promotes auto-oriented developments. Infill development is difficult when a minimum number of parking spaces is required. The densities needed to create walking and transit related developments are impossible because parking requirements take so much land.

#### *Snow Removal Ordinances*

To pedestrians in a northern climate, snow removal is a very important issue. Winter snow seasons can last up to five months limiting mobility for those who rely on walking to get around. The City of Duluth has been very progressive in is accommodating pedestrians with their revised sidewalk snow removal ordinance.

The following is a brief description of snow removal ordinances from cities that receive substantial snowfalls.

#### *Duluth:*

- Snow must be removed from sidewalks within 24 hours after the end of the snowfall to create a path at least three feet wide.



- The city is responsible for removing plowed snow from sidewalks. If a city plow deposits snow on the sidewalk, the city is responsible for its removal.
- The city will contract to remove snow not removed by abutter and assess the costs to the property owner.



#### Green Bay:

- Snow must be removed within 24 hours after accumulation.
- This is enforced on complaint basis.

#### Hibbing:

- Snow must be cleared by a certain time period after snowfall. This is enforced on complaint basis.
- If snow is not removed, the property owner is contacted by telephone and warned. If this doesn't work, the city can do the removal and assess the costs to the property.

#### Madison:

- Snow must be removed by noon the day after snowfall. This is enforced on complaint basis.
- Property owners are not warned, they are immediately ticketed and the citation is

sent in the mail. Snow must be removed by the next day, or the city will remove it at property owners' expense.

#### Marquette:

- There is no ordinance, the city is responsible for most of the sidewalks. Sidewalks are cleared with a sidewalk blower. Condition of the sidewalks determine which sidewalks are cleared, some are cleared and some are not.

#### Milwaukee:

- Property owners or occupants are responsible for snow and ice removal 24 hours after snow ends.
- This is enforced on complaint basis.
- If the city removes the snow, the cost is assessed to the property.

#### Minneapolis:

- Snow must be removed within 24 hours (this differs depending on who owns the building – one or two family dwellings are 24 hours, other buildings are 4 hrs after snow falls)
- This is enforced on complaint basis.
- Minneapolis has three sidewalk inspectors, who can hardly keep up with the large number of complaints.
- Sand sprinkling on ice is also required. If this is not done, the city does it and charges the property owner.
- The responsible party is issued a warning, and the property comes up for reinspection 7 days later. If the snow is still there, a \$23.00 ticket is issued, then the property is charged for snow removal by the city.

#### St. Paul:

- Snow must be cleared in 24 hrs, enforced on complaint basis

Superior:

- Snow should be removed by noon the day after a snowfall. This is enforced on complaint basis. Superior doesn't really have a strict ordinance; people who don't shovel receive a phone call from the city, but are not fined. This seems to take care of the problem.

Thunder Bay:

- No official policy, but they do have a standard.
- The city is responsible for care of the sidewalks, they have no bylaws for the property owners. This is expensive and people get mad when it takes several days for the walks to be cleared.
- They *might* switch over to bylaws for owners.
- In Southern Ontario, some cities have these bylaws, others do nothing and just take care of the lawsuits as they come in.

Summary:

Most cities have ordinances, which state that snow must be removed within a certain time period (usually 24 hours, or by noon the day after the snowfall). Ordinances are mainly enforced on complaint basis. This method seems to take up as much time and money as the sidewalk departments have to offer.

Thunder Bay and Marquette differ in that the city is responsible for clearing the sidewalks, which is expensive and takes a long time. Duluth's new ordinance will cost the city more to remove plowed snow, but will make the city more walkable.

#### *Sidewalk Improvement Program – City of Superior*

The City of Superior is currently reviewing its Sidewalk Improvement Program and Special Assessment Policy. The mayor appointed an 18 member Pedestrian Traffic and Sidewalk Committee to review the

existing program and policies to make recommendations for any future changes. See Appendices (page A-1) for current Sidewalk Improvement Program and Sidewalk Assessment Policy.

#### *Duluth Sidewalk Improvement Process*

According to the City Charter, the city council can construct or improve any sidewalk it deems necessary by passing a resolution with at least seven votes. If 35 percent of property owners abutting a sidewalk petition the city, the city council can pass a resolution with a majority vote to improve sidewalks and assess the benefiting property owners the cost of the improvements. See Appendices (page A-3) for current sidewalk improvement process.

### *Targeted populations*

Some segments of our population rely more heavily on walking and utilizing pedestrian facilities than others. Children, the disabled, and senior citizens utilize pedestrian facilities more often than the rest of the general population. Map 4 shows the locations of pedestrian generators and destinations.

#### *Disabled*

Disabled individuals face many challenges when attempting to assimilate into the everyday activities of a community. Access issues are central to their ability to interact with others. Simple tasks that non-disabled people take for granted can be a barrier to a disabled person. The impetus behind the Americans with Disabilities Act was to eliminate the barriers that disabled people face and allow them freedom of access. The following is a summary of the American with Disabilities Act.

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### *Americans with Disabilities Act (ADA)*

The ADA prohibits discrimination on the basis of disability in employment, programs and services provided by state and local governments, goods and services provided by private companies, and in commercial facilities.

The ADA was signed into law on July 26, 1990. It contains requirements for new construction, for alterations or renovations to buildings and facilities, and for improving access to existing facilities of private companies providing goods or services to the public. It also requires reasonable modifications of policies and practices that may be discriminatory.

The Department of Justice is charged with enforcing the ADA requirements in three areas –

- Title I: Employment practices by units of State and local government,
- Title II: Programs, services and activities of State and local government, and
- Title III: Public accommodations and commercial facilities (private businesses and non-profit service providers).

Titles II & III are the most applicable to pedestrian accommodations.

### *ADA Title II: State and Local Government Activities*

Title II covers all activities of State and local governments, regardless of the government entity's size or receipt of Federal funding. Title II requires that State and local governments give people with disabilities an equal opportunity to benefit from all of their programs, services, and activities (e.g. public education, employment, transportation, recreation, health care, social services, courts, voting, and town meetings).

State and local governments are required to follow specific architectural standards in the new construction and alteration of their buildings. They also must relocate programs or otherwise provide access in inaccessible older buildings, and communicate effectively with people who have hearing, vision, or speech disabilities. Public entities are not required to take actions that would result in undue financial and administrative burdens. They are required to make reasonable modifications to policies, practices, and procedures where necessary to avoid discrimination, unless they can demonstrate that doing so would fundamentally alter the nature of the service, program, or activity being provided.

### *ADA Title II: Public Transportation*

The transportation provisions of Title II cover public transportation services, such as city buses and public rail transit (e.g. subways, commuter rails, Amtrak). Public transportation authorities may not discriminate against people with disabilities in the provision of their services. They must comply with requirements for accessibility in newly purchased vehicles, make good faith efforts to purchase or lease accessible used buses, remanufacture buses in an accessible manner, and, unless it would result in an undue burden, provide paratransit where they operate fixed-route bus or rail systems. Paratransit is a service where individuals who are unable to use the regular transit system independently (because of a physical or mental impairment) are picked up and dropped off at their destinations.

### *ADA Title III: Public Accommodations*

Title III covers businesses and nonprofit service providers that provide public

accommodations, privately operated entities offering certain types of courses and examinations, privately operated transportation, and commercial facilities. Public accommodations are private entities who own, lease, lease to, or operate facilities such as restaurants, retail stores, hotels, movie theaters, private schools, convention centers, doctors' offices, homeless shelters, transportation depots, zoos, funeral homes, day care centers, and recreation facilities including sports stadiums and fitness clubs. Transportation services provided by private entities are also covered by Title III.

Public accommodations must comply with basic nondiscrimination requirements that prohibit exclusion, segregation, and unequal treatment. They also must comply with specific requirements related to architectural standards for new and altered buildings; reasonable modifications to policies, practices, and procedures; effective communication with people with hearing, vision, or speech disabilities; and other access requirements. Additionally, public accommodations must remove barriers in existing buildings where it is easy to do so without much difficulty or expense, given the public accommodation's resources.

Courses and examinations related to professional, educational, or trade-related applications, licensing, certifications, or credentialing must be provided in a place and manner accessible to people with disabilities, or alternative accessible arrangements must be offered.

Commercial facilities, such as factories and warehouses, must comply with the ADA's architectural standards for new construction and alterations.

## Seniors

Senior citizens face many problems as pedestrians. Reduced walking speeds and fewer mobility options expose seniors to traffic more than other adult populations. Pedestrians ages 65 and over are more than twice as likely to be killed or injured than younger pedestrians. Conditions of pedestrian facilities are another difficulty that seniors face. Sidewalk conditions such as snow, ice, sand, and sidewalk surface impairments are factors that greatly affect the mobility options of seniors.

**Table 10: Local Senior Population**

City	Senior Population	# of Seniors Living Alone	Living Alone with no Vehicle
Duluth	14,626	5,128	3,342
Superior	4,749	1,701	1,061
Hermantown	630	183	47
Proctor	482	213	121
TOTAL	20,487	7225	4571

Table 10 indicates that there is a considerable population of senior citizens residing in our area that rely on walking and transit for mobility. This underscores the importance that a safe comprehensive pedestrian network exists to offer these people a mobility option.

The City of Duluth Commission on Aging conducted a survey of seniors living in senior high-rise apartments in February 1998 on traffic and pedestrian concerns. The map after page 16 shows the locations of senior centers. The following is a brief description of the survey results.

Pedestrian and traffic concerns identified in the survey include:

- Cars turning on red light with a no turn on red sign,
- Lack of sidewalks and sidewalks on one side of the street only,

- snowplows plowing snow on sidewalks,
- gravel and sand on sidewalks in the spring,
- cars not stopping at stop signs,
- cars don't slow to let pedestrians cross the street,
- speeding traffic,
- not enough benches at transit stops, and
- timing of crosswalks signals are too short.

**Table 11: Senior High-Rise Apartments**

Apartment Complex	# of Residents	Seniors Only	Heavy Traffic Area
Baypoint	200	No	No
Gateway	160	No	Yes
Greysolon	165	No	Yes
Lakeland Shores	47	Yes	Yes
Lenox	170	No	Yes
Maple Grove Estates	38	Yes	Yes
Midtowne II	100	No	Yes
Pennel Park	110	No	Yes
Ramsey	100	Yes	Yes
St. Anns	180	Yes	Yes
S-Elect Homes	70	Yes	Yes
Woodland Gardens	64	Yes	Yes

Table 11 and Map 4 show that almost all of the senior apartments in Duluth are located near high traffic areas. Given the large number of seniors living in these apartments and their proximity to heavy traffic areas, these areas should be a high priority for pedestrian facilities that accommodate senior citizen pedestrians.

#### *Students*

In the Duluth School District there are over 13,000 students in public and private schools. Of this total, approximately 30 percent (over 4000 students) walk to school,

some with trips as long as two miles. Of the remaining 9000 plus students riding the bus, many must walk to their bus stop. This demonstrates the critical need for pedestrian facilities for children to reach school safely.

Table 12 shows the distance students in the Duluth School District must live from their school to be eligible to ride the bus. Students living closer than the distance listed for each grade category must walk to school.

**Table 12: Busing Eligibility – Duluth School District**

Grade	Distance to school
K	½ mile
1-2	.7 mile
3-6	1 mile
7-12	2 miles

The Superior School District has approximately 5900 students attending their public and private schools. Of this total about half walk to school. That means there are as many as 3000 students walking to school in the Superior area. The Superior School District buses approximately 2600 students to school each day. These students start and end their bus trip with a pedestrian trip. This shows a need for good pedestrian facilities around the schools.

Table 13 shows the distance students in the Superior School District must live from their school to be eligible to ride the bus. Students living closer than the distance listed for each grade category must walk to school.

**Table 13: Busing Eligibility – Superior School District**

Grade	Distance to school
K-6	1 mile
7-12	2 miles

## ***Targeted Areas***

Specific areas in Duluth and Superior were examined because of the large amount of pedestrian activity they generate. These areas were considered to determine what the pedestrian needs are. The targeted areas are Miller Hill Mall, University of Minnesota Duluth (UMD), University of Wisconsin Superior (UWS), Mariner Mall, and the downtown areas of Duluth and Superior.

### ***Miller Hill Mall***

The Miller Hill Mall has developed as an almost exclusive auto-oriented shopping area with limited pedestrian facilities. Traffic in the Miller Hill area is becoming congested and alternatives to multiple stop shopping are few. People going from Target to Burning Tree Plaza must drive even though the two areas are located adjacent to each other. The only alternative to driving is the Mall Area Circulator (MAC) provided by the DTA. The Miller Hill shopping area is lacking in very basic pedestrian connections. Facility improvements should include a system of connections between the various shopping areas (see Map 5). Dedicated walkways between shopping areas are needed to encourage inter-connectivity of sites without having to drive short distances. Walkways could interconnect sidewalks that already exist in front of most commercial establishments. These facilities would increase safety and allow an opportunity for aesthetic enhancement of commercial areas. Curb cuts allowing wheelchair access to sidewalks should be a mandatory component of all planned improvements.

### ***UMD***

UMD is one of the largest pedestrian generators in our area. Over 75% of the faculty, staff and students live within two miles of campus creating an opportunity for

the university population to walk, bike or use transit instead of driving.

The university community is currently debating whether or not to build a parking ramp. Initial estimates put the price of the proposed parking ramp in the \$6-\$7 million range. The addition of a parking ramp on campus would raise the price of parking permits substantially. This may have the effect of lowering demand for parking, thus eliminating the need for a parking ramp. Other options such as increased transit and pedestrian commuting should be explored before a large investment is made in a parking ramp.

The UMD campus itself has an excellent sidewalk system. Sidewalks serve areas of the campus that pedestrians are walking to and from. However, the adjacent roadways do not have a complete sidewalk system (see Map 6).

Junction Avenue and its connection to St. Marie Street do not have any sidewalks on either side of the street. This roadway has parking on the east and southeast side but nowhere for people to walk. This creates a safety hazard as these people are forced to walk in the street.

Another deficiency in the sidewalk network is a connection from the campus to the Kenwood retail area. This retail area along with the Mount Royal retail area are the closest retail areas to the UMD campus and should have a pedestrian connection since many of the students living on or adjacent to campus do not have automobiles.

Other deficiencies in the UMD area include the College Street connection between UMD and the College of St. Scholastica.

Considering the reciprocal agreements for some classes between the two schools and



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the short distance (about a half mile) between the schools, a pedestrian connection on both sides of the street is necessary.

### *UWS*

The UWS campus area is a very walkable area as most of the adjacent roadways have sidewalks. The campus itself has a very good system of sidewalks interconnecting the different buildings. The neighborhoods adjacent to the campus have sidewalks on both sides of the street in almost all areas. Catlin Avenue, the main roadway through campus, has been altered to calm traffic in this area. The affect is a roadway designed more for people than for vehicles. The topography in the UWS area is mostly flat which adds to the attractiveness of biking and walking.

The only pedestrian barriers noted in this area were the rail yard and tracks to the east the campus and Belknap Street which is a high traffic roadway. The rail yard can be crossed at 21<sup>st</sup> Street and at Belknap Street, minimizing the barrier.

Examining the sidewalk network in the UWS area only minor deficiencies were apparent (see Map 7). Catlin Avenue has sidewalks on both sides of the street except for a three block stretch from 19<sup>th</sup> to 21<sup>st</sup> Streets. This segment is important for students living in the dormitories on 23<sup>rd</sup> Street and Catlin Avenue. The other area in need of a sidewalk connection is along Morterelli Drive near the football stadium. This connection is needed for pedestrians accessing the campus from the north and east.

### *Mariner Mall*

The Mariner Mall has good internal pedestrian circulation, however it could use more connections to neighborhood

sidewalks. Connections exist to the sidewalks on North 28<sup>th</sup> Street but there is a lack of connections to the sidewalks along Hill Avenue and to the neighborhoods to the north of the mall.

Another deficiency is the lack of a sidewalk along 25<sup>th</sup> Street to the north of the mall and on the access road on the east side of the mall. These sidewalks are needed to give pedestrians an alternative to walking through the mall parking lot or in the street (see Map 8).

### *Downtown Areas of Duluth and Superior*

The downtown areas of these two cities have very good pedestrian facilities. The issues that face pedestrians in the downtown areas have to do more with safety than the provision of pedestrian facilities (see accident analysis on pages 9-10).

Downtown Duluth has the Skywalk System (see Map 9) which is an indoor interconnected system of walkways. This system serves to connect retail areas, lodging, government services, and entertainment. The Skywalk is also a place where many people walk for recreation and exercise. Currently the Skywalk extends from the library to the DECC to City Hall.



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# Livable Communities

Any location that people choose to live in may be considered “livable.” The term “livable communities,” however, has recently been coined to refer to communities that: (a) contain a healthy mix of homes, shops, workplaces, civic institutions, and parks; and (b) are designed to provide people with convenient access to daily needs without having to drive. Many feel such communities offer a higher quality of life to more people. The key to the livability of a community is greatly impacted by the transportation network.



Another essential factor is to provide safe street crossings. Crosswalks are vital because they are the points where pedestrians interact with vehicles. They must be safe so pedestrians feel confident using them. Crosswalk distances can be shortened by narrowing traffic lanes at intersections, shortening curb radius, and

extending sidewalks into the intersection with a bulb-out area. Every crosswalk should be clearly defined with striping, crosswalk signs, and lighting. An interconnected system of sidewalks with

safe crossings will allow the comfort level necessary to encourage community residents to walk more often.

## *Accommodating Pedestrians*

The trend toward designing streets only for automobile use is slowly being reversed. More cities are beginning to consciously design facilities to accommodate both automobiles and pedestrians. The tunnel vision toward auto only street design has left a legacy of congested, polluted, unattractive roadways where pedestrians are not safe.

The first step in encouraging pedestrian travel is to provide a pedestrian network where pedestrians feel safe. Providing a safe and serviceable sidewalk network that connects residential neighborhoods with shopping, transit, schools, parks, and work is essential to developing a walkable community.

## *Mixed Land Uses*

Mixed land use is another factor critical to walking becoming a more practical means of travel. The key concept in mixed use development is to create communities where daily activities are integrated rather than separated. Mixing land uses within walking distances of one another was standard practice when most cities and towns were first developed. Since the advent of zoning and the automobile, land uses have been separated into larger zones where separations are scaled to driving distances rather than walking distances. Transit, walking, and bicycling are not served well by separated land uses.



Changes are needed in the way communities develop. Community residents are discovering that a more walkable community does far more than improve safety, it also makes neighborhoods far better places to live.

Longer distances between multiple destinations have made walking, bicycling and even mass transit inconvenient and inefficient. Dropping off dry cleaning, going to work, stopping by day care, and picking up groceries often requires four separate driving trips. Twenty or thirty years ago at least two or three of these trips would have been made on foot because the destinations were close together. These multiple errands or "trip-chaining," are often done during morning and evening rush hour on the way to and from work. This puts an additional strain on roadways.

New developments are frequently forming outside existing communities without the consideration of alternative modes of transportation. Restrictive zoning codes separate shops, schools, commercial businesses and residential areas so it is impractical and inconvenient to travel on foot. As a result, pedestrians are left to traverse high-speed roads with limited sidewalks or crosswalks.

When it comes to design, what's old fashioned is back in vogue. For decades, we've built separate residential, shopping and business districts surrounded by parking lots and connected by multiple-lane roads. These types of community designs leave driving a vehicle as the only choice of mobility. Neighborhoods need to be designed with alternate modes of transportation in mind. This means that neighborhoods have destinations within walking distance. A neighborhood is

walkable only to the extent that there are functional destinations at the center of the neighborhood and that the streets and paths of the neighborhood are designed to be pedestrian friendly.



Cities and towns designed with narrower streets, slower traffic and a healthy mix of homes, shops and businesses are again at the cutting edge of design as they were many generations ago. Besides decreasing reliance on the car and improving the air we breathe, this creates economic and social opportunities to those who do not drive and would otherwise find themselves with limited mobility options.

## ***Transit***

Communities that are truly livable rely heavily on transit for mobility of non-driving populations. Accommodating for transit allows access to goods and services for larger numbers of people.



The transit rider is primarily a pedestrian and is influenced by their connection to the bus stop. Each transit trip starts with a pedestrian trip to the bus stop. Consideration of the needs of the pedestrian should weigh heavily on the design of the bus stop and its connecting walkways. Transit riders should feel comfortable walking to and from the bus stop.

The Duluth-Superior area is very favorable to transit because of the manner in which the cities developed. Many of the neighborhoods developed during the streetcar era and consist of dense pockets of homes. This type of residential design is much better than the large lot suburban developments we see in many communities today. Transit can serve the compact areas more efficiently than less dense areas.

Housing, population, and employment density levels are the most critical factors in determining the type and level of transit services that can operate most efficiently in different areas. Clusters of compact, concentrated development need to be located within ¼ mile walk of transit stops for transit to be cost-effective. Housing densities of at least seven units per acre would justify regular route transit services with 15-30 minute all day frequencies. Generally, transit works best where compact neighborhoods are contiguous. Employment densities of ten or more jobs per acre and/or concentrations of 3000 jobs can support at least a minimal level of transit services.



# Strategies for Improved Pedestrian Environment

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## *Economics of Transportation*

When considering strategies for improving the pedestrian environment, we need to examine the economics of transportation. The economics of transportation looks at the supply of and demand for transportation infrastructure. Demand for more roads has been increasing much faster than population growth over the last 30 years. We have been attempting to meet demand by increasing the capacity of existing roads and building new roads or in other words increasing the supply of transportation. The supply side of transportation is becoming more and more constrained by economic, social and environmental barriers. Supplying more roads to meet the ever increasing demand has limits and we are reaching them. The solution to maintaining personal mobility without increasing supply is to address the demand side of transportation economics. The demand for transportation needs to decline to maintain personal mobility without increasing the amount of transportation infrastructure. Alternatives to road capacity expansion must be examined.

The requirement that roads maintain a minimum level of service has driven development to outlying areas where excess capacity exists. Road building has been favored over other mobility options because it is the least temporary relief from congestion. The result is sprawl and increased auto-dependence.

Alternative transportation modes lower demand for new and expanded roadways. Transit, carpooling, bicycle and walking are modes of transportation that allow mobility without expanding roadway capacity. These alternatives to the single occupant vehicle lower the demand for additional roads while maintaining the levels of mobility that today's society desires. The transportation problem can be solved by addressing the demand side and not by automatically increasing the supply or building more roads.

Most of the following strategies address the demand side of the transportation picture. These are strategies that will lower the demand for additional roadway building. Given the social and environmental costs along with the large financial expenditures involved in expanding transportation infrastructure, these strategies warrant examination.

## *Travel Demand Management*

Travel Demand Management (TDM) is an area of transportation that promotes alternative forms of transportation by influencing traveler behavior to reduce demand for single occupant vehicles. TDM efforts are being implemented in urban areas across the country in order to reduce traffic congestion, air pollution and to increase efficiency of the transportation system. Alternative forms of transportation include carpooling, compressed work weeks, telecommuting, walking, bicycling, and transit.

TDM programs are designed to maximize the people-moving capability of the transportation system by increasing the number of persons in a vehicle, or by influencing the time of, or need to, travel.

To accomplish these types of changes, TDM programs must rely on incentives or disincentives to make these shifts in behavior attractive. The term TDM encompasses both alternatives to driving alone and the techniques or supporting strategies that encourage the use of these modes. The primary purpose of TDM is to reduce the number of vehicles using the road system while providing a wide variety of mobility options to those who wish to travel.

### ***Urban Villages and Key Pedestrian Streets***

Two ideas that are being used by cities with progressive pedestrian environments are urban villages and key pedestrian streets. These two ideas are designed to make communities friendlier to alternative types of transportation and less reliant on single occupant vehicles. Urban villages are mixed-use places where people live, work, and shop. These villages are self-contained for most activities and don't require daily auto trips. Urban villages are intended to transform automobile-oriented environments into more cohesive, mixed-use pedestrian environments, or to promote reinvestment into distressed communities to benefit the existing population.

Three types of urban villages exist with density and use the defining factors. Urban centers are intended to be the densest areas with the widest range of land uses. Hub urban villages are also intended to accommodate a broad mix of uses, but at lower densities than center villages. Residential urban villages are intended for concentrations of low to moderate densities of predominantly residential development with a compatible mix of support services and employment.

Key pedestrian streets are the streets within the highest-density portions of urban villages and along logical connections between villages. The purpose of the key pedestrian streets are to be safe and attractive for pedestrians, improve access to transit, encourage street-level activity, and facilitate social interaction. Pedestrian facilities should be integrated into street improvements on these streets. Strategies such as curb bulbs, mid-block crosswalks, pedestrian-activated signals, benches, street trees, wider sidewalks, lighting and overhead weather protection are part of key pedestrian streets.

### ***Traditional Neighborhood Development***

Traditional Neighborhood Development (TND) is a new way of guiding development that takes people and community into consideration. Interaction among community members is central to this type of development.



Instead of the traditional development model in which residential and commercial zones are typically separated (thus encouraging the growth of transportation infrastructure), the TND model integrates development. All structures fan out from a town center, which is often a square or green, and sometimes a busy or memorable street intersection.

Shops and offices are located at the edge of the neighborhood, and the shops are sufficiently varied to supply the weekly needs of a household. A convenience store is the most important among them. Elementary schools are located within one mile of all residences so that children can walk to school. Small playgrounds, ideally within one-eighth of a mile from all dwellings, dot the landscape. The streets are laid out in a network, so that there are alternative routes to most destinations. Buildings at the neighborhood center are placed close to the street creating a strong sense of place.

There are numerous benefits in developing with Traditional Neighborhood Model. By bringing most of the activities of daily living into walking distance, everyone (especially the elderly and the young) gains independence of movement. Reducing the number and length of automobile trips minimizes traffic congestion and the need for expensive road construction. Providing streets and squares of comfortable scale with defined spatial quality allows neighbors to come to know each other and to watch over their collective security. By providing appropriate building concentrations at easy walking distances from transit stops, public transit becomes a viable alternative to the automobile.

#### *Institute of Transportation Engineers and Traditional Neighborhood Development*

The Institute of Transportation Engineers (ITE) has recently adopted ideas from Traditional Neighborhood Development and incorporated them in a recommended street design practice.

The Institute of Transportation Engineers (ITE) is an international education and scientific association of transportation and traffic engineers and other professionals who are responsible for meeting mobility

and safety needs. The Institute facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management of any mode of transportation.

#### *Traditional Neighborhood Development Street Design Guidelines: An ITE Proposed Recommended Practice*

This is a summary of the proposed Traditional Neighborhood Development Street Design Guidelines developed by ITE Technical Council Committee 5P-8. The full report includes a discussion of the concepts of Traditional Neighborhood Development (TND) as they relate to the role of streets in TND communities, a discussion of the community design parameters under which the guidelines would apply, presentation of the design principles underlying the guidelines, specific guidance on geometric street design, and an appendix that summarizes some recent findings on the relationship between urban design and travel demand.

#### *Objectives and Background*

The neighborhood street layout and design standards embodied in the development codes of many communities are intended to provide the transportation facilities appropriate for the conventional suburban development patterns common over the past 40 years. Those development patterns featured separation of land uses (e.g. residential, retail, office), assumed that each household would have one or more autos available for use and that all travel, other than short visits to nearby neighbors, would involve use of a motorized vehicle. The street layouts and streets deemed appropriate under these conditions featured minimization of connectivity, in order to channel traffic to major streets and

geometric designs that permitted rapid auto movement.

Architects, urban planners and developers are now proposing and building communities designed in accord with the principles of The New Urbanism. These communities feature integration rather than separation of uses with the intent that a significant proportion of trips will be retained within the community and that walking or biking rather than an automobile will be used for many of these trips. Even where an auto is used, the shorter trip lengths make lower speeds acceptable. The street layouts and geometric features appropriate under these conditions are different than those appropriate for conventional development. These Guidelines are intended both to educate traffic and transportation engineers and public works professionals about design of streets for The New Urbanism and to provide an accepted professional document that can be used by engineers to support their designs and by public officials to support design approvals.

### *Concepts*

Streets are the most visible and most important public spaces in neighborhoods. Streets in New Urbanism communities are designed to encourage and support use of non-motorized modes for travel to local destinations. The street network and individual streets are considered to be shared spaces in which the needs of pedestrians and bicyclists are given equal or greater priority than those of auto drivers. The street layout is intended to provide many alternative paths from origin to destination. The street design is intended to require slow auto speeds and to give clear notice to drivers that these are places where slower speeds are required. The street plan features connectivity and small-blocks, but not necessarily an

orthogonal grid. Streets are designed to serve the most frequent uses—pedestrians, bikes, and local traffic. Necessary but infrequent users (e.g. moving vans, emergency vehicles) are accommodated, but their requirements do not control the street design. The use of alleys for access to parking and as utility corridors is permitted and encouraged. On-street parking as a buffer between pedestrians—on adequate sidewalks—and moving traffic is encouraged.

### *Geometric Design*

The design of all streets in areas to which these guidelines are applicable is intended to promote slower auto travel speeds (about 20 mph.), and reduce or eliminate the need for subsequent retrofitting with traffic calming measures. Each street is designed to serve the expected mix of uses, including pedestrians, rather than being selected from a limited set of accepted designs. The factors to be considered in the design of each street are enumerated.

Streets are designed to serve the expected mix of uses rather than to accommodate a given number of traffic lanes of a given width. Cartway widths are not prescribed, but examples of areas with cartways of 25 to 28 feet (traffic and parking in two directions) and 22 feet (parking in one direction) are cited. The use of short curb return radii at intersections to reduce auto speeds and to reduce pedestrian crossing distances is encouraged.

### *Effects on Travel Behavior*

A summary of recent findings documenting reductions in vehicle trip generation rates (from those observed in conventional communities) is included as an Appendix to the guidelines.



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### *Traffic Calming*

Traffic calming is another strategy to provide a safer environment for pedestrians. Growing numbers of communities are working to make their streets safer with traffic calming techniques. Traffic calming refers to the practice of designing streets to reduce vehicle speeds, ensure that drivers are more careful, or encourage drivers to take safer routes. Traffic calming includes several techniques (see Figure 3) including narrowing the roadway, diverting non-local drivers away from local streets, changing pavement surfaces, installing speed humps, building traffic circles and putting up stop signs. These measures make it easier for pedestrians to get around and induces more foot travel and street life.

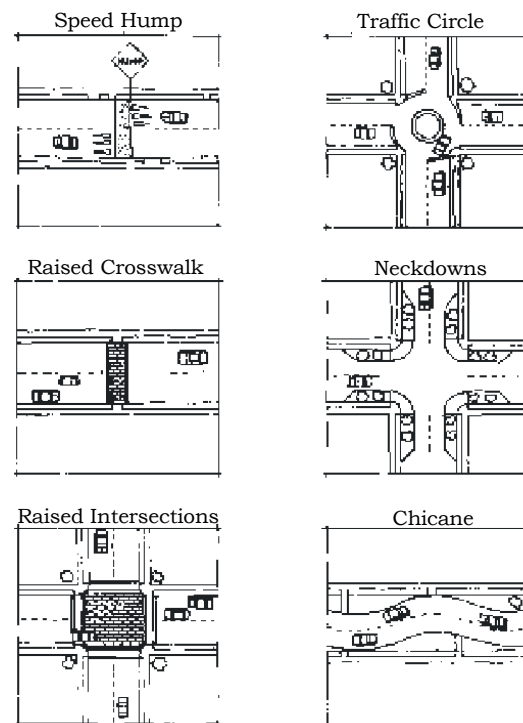
One of the most popular traffic calming strategies is the installation of traffic circles, usually at neighborhood intersections formerly marked by stop signs. The centers of the circles are often planted with attractive flowers and trees. Traffic circles calm traffic by slowing vehicles that must maneuver through the circle and they also shorten sight lines so motorists get a perception smaller area in which to operate.

Speed humps are also a popular strategy to slow neighborhood traffic. Some communities are narrowing wide intersections for pedestrians through sidewalk bulb-outs and median islands for

walkers. In areas where it's not possible to build traffic circles, some cities have built mid-street chicanes. These are curb bulbs placed halfway down the street that effectively narrow the street to one lane. The chicanes are staggered in sets of three. The result is that traffic is slowed significantly and the volume of traffic is reduced.

**Figure 3**

Traffic Calming Measures



# Pedestrian Safety

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## *Education/Enforcement*

### *School Crossing Programs*

This section contains some examples of school pedestrian safety programs. These programs have proven successful in improving the pedestrian environments near schools.

### *The Chester Park Elementary School “Safe Walk Zone” Project*

The winters of 1995-96 and 1996-97 produced two of the highest snowfall totals on record. Many sidewalks in the vicinity of Chester Park School were not being shoveled in those winters and the students had to walk in the streets on their way to school. The Chester Park Elementary School Safety Committee was looking for a way to get nearby residents to shovel their sidewalks. They decided to mail a letter to every resident on the walking routes of the students and appeal to them to shovel their sidewalks to improve safety of the students. The result was almost all of the neighbors complied and the sidewalks were shoveled on a regular basis. The success of this area in getting neighbors to clear their sidewalks may provide the momentum necessary extend the program to all schools in the Duluth School District.

### *School Zone Safety Improvement*

Surveys conducted by the Washington Traffic Safety Commission (WTSC) in Yakima, Washington showed significant violations of speed limits in school crosswalk and playground areas. In response to these serious safety concerns, legislation was enacted doubling fines for speeding in a

school zone. The legislation provided that half of the new fine total would be earmarked for improving school zone safety.

The goal of the School Zone Safety Improvement Project was to improve compliance of existing speed limit laws in school zones. In order to achieve this goal, WTSC established the following objectives:

- Provide law enforcement agencies with the motivation and tools to aggressively enforce school speed limits.
- Supply funding for school zone improvement projects.
- Develop a public education campaign informing motorists of the school zone laws.
- Provide increased signage at school zones.

The WTSC teamed with other organizations having a vested interest in traffic safety, including local law enforcement and Safe Communities coalitions, to plan a series of strategies and activities designed to meet the WTSC goal and objectives for the project. The activities included the following:

- Law enforcement agencies were invited to apply for state grant funds to purchase speed measuring devices or other equipment that would enhance school zone enforcement. Among the criteria for receiving a grant award was a requirement for demonstrating the extent of the agency's commitment to enforcement by submitting a plan for performance.
- A public information campaign was developed featuring articles in the local newspapers and public service announcements that aired on local radio and television. Several feature stories were also aired on local television.
- Informational signs were developed in cooperation with the State Department of Transportation and placed in school

crossing zones. These signs carried school zone safety messages such as "Speeding Fines Doubled in School Zones."

Since the School Safety Zone Improvement Project was initiated in September 1996, it has supported funding for more than 100 local, county, and state agencies and Indian tribes applying for enforcement grants. The campaign has seen a marked increase in the number of citations issued to violators of the school zone laws, rising from 1,500 citations issued in the year 1995 to more than 3,000 issued in the first four months of the program.

The grant funds awarded were used for activities other than for enforcement, including outfitting of school crossing guards, publicity for "red ribbon" ceremonies for sign installation, purchase and installation of "Double Fine" signs, enhanced community policing efforts and increased police presence near schools. Preliminary data from effectiveness studies indicate that there are no long-term effects of signage without enforcement.

Based on the success of the project, the Washington State Legislature enacted legislation in 1997 that doubled the penalty for passing a stopped school bus, with the expectation that the School Zone Safety Improvement Project be replicated to improve compliance with laws regarding stopped school busses. Half the fines collected from enforcement of the new law will be dedicated to this effort.

Funding: State \$300,000

Contact: Les Pope  
Washington Traffic Safety Commission  
P.O. Box 40944  
Olympia, WA 98504-0944  
(360) 586-3872

### *Walk Ride Walk: Getting to School Safely Program*

Although the school bus ride itself is one of the safest forms of transportation, there are risks associated with the trip. The trip actually extends from home to school and back again. An average of 41 school-age children die in school bus related traffic accidents each year and many more are injured. Almost three-quarters of the crash victims are pedestrians, and most are very young children. It is therefore critical that training in school bus safety be started at an early age and reinforced yearly.

This program includes videos and brochures designed for children, parents, teachers and bus drivers. Topics covered include danger zones where the bus driver cannot see students, emergency evacuation of the bus, crossing the street, walking to the bus stop, waiting at the bus stop, riding the bus and leaving the bus. This program is sponsored by the National Safety Council and the U.S. Department of Transportation.

### *Daylight Savings Time*

One intriguing intervention to prevent pedestrian injuries is daylight savings time. Pedestrian injuries are more likely to occur in the dark than in the light, although this is more a risk factor for adults than children. At least two studies have evaluated the effects of daylight savings time on pedestrian injury rates, although neither separated out child pedestrians from other ages.

Authors of the studies stated there should be consideration for extending hours of daylight savings time in the fall, especially in northern cities. This is obviously a very

cheap and effective method for pedestrian-vehicle accident reduction.

*Suggested Safety Tips:*

- Hold small children by the hand when crossing.
- Look both ways before crossing any street.
- Make sure all traffic stops before you enter the roadway.
- Establish eye contact with drivers when possible.
- Do not step out in front of approaching cars until you know they see you and come to a stop.
- Stay on the curb while waiting for a gap in traffic.
- Always cross at intersections

Keep in mind that the best safety measure for school age children is to educate them on how and where to safely cross the street. Children watch adults and imitate their behavior. Set a safe example for your children and others by observing all traffic laws and safety guidelines.

*Crosswalk Signal Messages and Meanings*

- At intersections with traffic lights and pedestrian signals, it is important to follow the signals carefully. Wait until you see the WALK signal, then follow the basic rules for crossing.



- A flashing DON'T WALK signal indicates you shouldn't start across the street. However, if you are in the middle

of the street and the DON'T WALK signal starts flashing, continue walking as you have time to complete the crossing.

- If you see a steady DON'T WALK signal, don't begin to cross the street. Wait for the next WALK signal.



- The WALK signal and the green traffic light indicate that it's your turn to cross the street, but they do NOT mean it is SAFE to cross. The WALK signal and the GREEN light mean LOOK, and then, if it's safe, go.

Remember to make eye contact with drivers to ensure they can see you. Don't take a walk signal, a green traffic light, or a driver for granted. Crossing safety is your responsibility. Remember, it's up to you.

Source: FHWA

*Fluorescent Yellow-Green Pedestrian Signs*

Recent manufacturing breakthroughs have produced a long life sign material in the color of fluorescent yellow-green. These brightly colored signs are highly visible and get the attention of motorists more quickly than the traditional yellow signs. The signs have the general acceptance of the public and have been recently included as a standard by the Federal Highway Administration.

*Pedestrian Safety is Second to Vehicle Safety*

Part of the problem is that pedestrian safety has always been a secondary traffic

engineering issue. Few efforts have focused on ensuring that streets are safe and convenient for both pedestrians and vehicles: fewer still have sought to modify driving behavior to better protect and accommodate pedestrians.

As hard as we try to implore both adults and children to be cautious on the street, there is a growing body of evidence to suggest education of pedestrians alone cannot by itself solve the problem. As Dr. Ian Roberts of New Zealand's University of Auckland Medical School concludes in a research paper comparing different international pedestrian safety programs: "Countries which have experienced major decreases in pedestrian mortality are distinguished by having placed a greater emphasis on environmentally based prevention strategies (i.e. street design) rather than pedestrian skills education."

the road and the sidewalk, safer crosswalks and other physical changes that will protect those who must or prefer to walk. These improvements will also help build a sense of community as more people come back out on the streets to enjoy their neighbors and their community.



Communities all across the country must demand that public officials earmark additional funding to ensure pedestrians have safe places to travel. Zoning laws need to be changed so that new developments can be built and old developments altered to have wide sidewalks, trees or plants between

# Funding

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## ***TEA-21 Federal Funds***

### *New Funding Available for Traffic Calming*

Several sources of funding are available in TEA-21 for traffic calming, which is mentioned explicitly in this new law for the first time.

1. Traffic calming projects are now explicitly mentioned in the Hazard Elimination section of the law as being an eligible use of federal funds.
2. Traffic calming projects are also eligible for funding as a designated transportation enhancement activity.
3. Traffic calming is listed as an eligible activity under the new Transportation and Community and System Preservation Pilot program.
4. Grants may be made under the Research and Technology section of the law for "evaluation of traffic calming measures that promote community preservation, transportation mode choice, and safety."

### *Bicycle and Pedestrian*

The Bicycle Transportation and Pedestrian Walkways provisions of Section 217 of Title 23, as amended by TEA-21, describe how Federal-aid funds may be used for bicycle and pedestrian projects. These projects are broadly eligible for all of the major funding programs where they compete with other transportation projects for available funding at the State and MPO levels.

### *Eligible Use of Funds*

Bicycle and pedestrian projects are eligible for NHS, STP (including Transportation Enhancements, and Sections 130 and 152),

CMAQ, Federal Lands, Scenic Byways, and Recreational Trails funds.

TEA-21 amends the eligibility of certain projects for Federal-aid funding including:

- National Highway System funds may now be used for pedestrian walkways. [1202(a)(1)]
- National Highway System funds for bicycle and pedestrian projects may now be used for projects within Interstate corridors. [1202(a)(2)]
- Expands eligible uses of STP safety setaside funds to include bicycle improvements. In addition, Hazard Elimination (part of the STP safety setaside) funds can now be used for pedestrian and bicyclist public pathways and trails and facilities; traffic calming projects are specifically mentioned as eligible activities. [1401]

### *Program Features*

Provides additional information and guidance on a wide range of planning, policy and safety issues affecting bicycling and walking, including:

- Bicyclists and pedestrians shall be given due consideration in State and MPO long range transportation plans. [1202(a)(3)]
- Bicycle and pedestrian projects shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use is not permitted. [1202(a)(3)]
- Transportation plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians. [1202(a)(3)]
- Bicycle safety issues must now be addressed in carrying out railway-highway crossing hazard elimination



projects under 23 USC Sections 130 and 152 [1202(d), 1401].

- FHWA shall, within 18 months, develop guidance on the various approaches to accommodating bicycles and pedestrian travel, including making recommendations on amending and updating AASHTO design standards for streets and highways. [1202(b)]
- The Secretary shall not approve any project or take any regulatory action that will sever an existing major nonmotorized route or adversely affect the safety of nonmotorized traffic and light motorcycles, unless a reasonable alternate route exists or is established. [1202(c)]
- FHWA is authorized to develop a national bicycle safety education curriculum. [1202(e)]

#### Definitions [1202(a)(7)]

Clarifies the permissibility of motorized wheelchair use on trails and pedestrian walkways that otherwise prohibit motorized use and also permits the use of electric bicycles on these facilities where State or local regulations permit. Electric bicycles are defined as any bicycle or tricycle with a low-powered electric motor weighing less than 100 pounds, with a top motor-powered speed of 20 miles per hour.

September 14, 1998

The increased funding available through TEA-21 is an unprecedented opportunity to improve our communities, while addressing the major public safety problem of pedestrian death and injury.

#### *ADA Compliance Funding*

Funding available through the Community Development Block Grant (CDBG) program at the U.S. Department of Housing and Urban Development may be used for accessibility purposes, such as installation of ramps, curb cuts, wider doorways, wider parking spaces, and elevators. Units of local government that have specific questions concerning the use of CDBG funds for the removal of barriers should contact their local HUD Office of Community Planning and Development or call the Entitlement Communities Division at HUD, (202) 708-1577, for additional information.



# R recommendations

## Recommendation #1

### Promote street design standards that accommodate pedestrian access, safety and comfort.

- Ensure that all new streets include sidewalks in accordance with the new Recommended Practice issued by the Institute of Transportation Engineers (Design and Safety of Pedestrian Facilities, 1998).
- When reconstructing any street, consider FHWA guidelines for retrofitting streets with sidewalks.
- Consider the inclusion of pedestrian improvements in capital improvement programs. This does not mean that sidewalks should be funded only with CIP funds.

#### FHWA Sidewalk Guidelines

Land-Use/Roadway Functional Classification/ Dwelling Unit	New Urban and Suburban Streets	Existing Urban and Suburban Streets
Commercial & 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 (Arterials)	Both sides	Both sides
Residential (Collectors)	Both sides	Multifamily – both sides. Single family dwellings – prefer both sides; require at least one side.
Residential (Local Streets) More than 4 units per acre	Both sides	Prefer both sides; required at least one side.
Residential (Local Streets) 1 to 4 units per acre Shoulder on both sides required	Prefer both sides; required at least one side.	One side preferred, require at least one side.
Residential (Local Streets) Less than 1 unit per acre	One side preferred, shoulder both sides	At least 4-ft. 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 required on at least one side.
- Sidewalks may be omitted on one side of new streets where that side clearly cannot be developed and where there are no existing or anticipated uses that would generate pedestrian trip 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.

## Recommendation #2

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### **Examine the installation of traffic calming techniques to slow neighborhood automobile traffic in problem areas.**

- Calm neighborhood cut-through traffic in areas such as the Duluth Heights neighborhood.
- Examine the Waverly neighborhood as an example of how cut through traffic can be eliminated and/or calmed.

## Recommendation #3

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### **Local plans and zoning ordinances should promote land use patterns that advocate pedestrian environments, such as increased densities, mixed land uses, development around transit stops, infill development and reuse of underutilized land.**

- Adopt flexible zoning codes and design standards that allow communities to build business and residential districts without the car-oriented setback and parking requirements. Give developers flexibility to accommodate pedestrians.
- Encourage neighborhood-oriented commercial uses, parks, and schools within safe and easy walking or bicycling distance from residential areas.
- The design and placement of buildings in new development should encourage walking by providing sidewalks, locating entrances near sidewalks and transit stops and locating parking in the rear.
- Encourage major developments to include plans for non-motorized travel, in terms of internal circulation and external access (including access to transit connections).
- Provide integrated street networks with direct routes for pedestrians between neighboring developments.
- Provide pedestrian amenities such as sidewalks, benches and landscaping at new developments.
- Encourage new employment centers to include plans for bicycle parking, showers, and lockers.
- Investigate "performance-based zoning", in lieu of traditional zoning, to ensure that new development conforms with objective standards for the control of pollution, traffic, and related effects of growth.

#### Recommendation #4

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**Promote employer incentives to increase the number of workers who walk, bike or use transit to get to work.**

#### Recommendation #5

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**Designate a “Walk Your Child to School Day” to raise awareness of walking routes to local schools.**

#### Recommendation #6

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**Support efforts by local business improvement districts (BIDs) to provide streetscape improvements such as sidewalks and façade improvements.**

#### Recommendation #7

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**Improve targeted pedestrian areas such as universities, malls, and downtown areas.**

- Develop pedestrian circulation system in the Miller Hill commercial to interconnect the major commercial centers (see Map 5).
- Develop pedestrian circulation system in the Mariner Mall area to connect the Mall with neighborhood sidewalks (see Map 8).
- Add sidewalks in the UMD area to accommodate pedestrian travel (see Map 6).
- Add sidewalks in the UWS area to accommodate pedestrian travel (see Map 7).

## Recommendation #8

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### **Improve pedestrian environment for targeted populations.**

- Lengthen timing of crosswalks in areas near senior citizen apartments.
- Install fluorescent green pedestrian crossing signs near schools and senior citizen apartments.
- Construct sidewalk bulb-outs to shorten crossings near schools and senior apartments.
- Continue efforts to comply with requirements of ADA.
- Promote safe zones around schools. Expand efforts similar to Chester Park Elementary's *Safe Walk* Program.
- Examine the need to improve bus circulation at area schools.
- Stripe all crosswalks where sidewalks and pedestrian crossing warning devices are present.

## Recommendation #9

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### **Create a bike-pedestrian coordinator position to manage area bike and pedestrian issues.**

## Recommendation #10

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### **Pursue funding to finance pedestrian improvements.**

- Examine TEA-21 legislation to identify potential pedestrian programs.
- Increase state traffic safety funds dedicated to pedestrian safety. TEA-21 increased state funding which should allow additional funds to be available for pedestrian safety.
- Encourage the state to consider any Congestion Mitigation and Air Quality (CMAQ) funding to be outside of regional funding targets or guidelines.

## Appendices

# Sidewalk Improvement Programs and Policies

City of Superior  
Public Works Department

## **SIDEWALK IMPROVEMENT PROGRAM AND SPECIAL ASSESSMENT POLICY**

**The following program and policy is currently being reviewed for potential change by the Pedestrian Traffic and Sidewalk Committee.**

### **A. PROGRAM OBJECTIVES**

Upon direction from the Superior Common Council the Public Works Department has implemented a systematic and comprehensive approach to sidewalk maintenance and reconstruction. The process establishes a consistent policy regarding when, where, and in what manner, individual sidewalk sections will be maintained, reconstructed or removed. The main goal of the policy is to provide maximum mobility with minimum actual lineal feet of sidewalk. Minimizing the lineal feet of sidewalk requiring maintenance allows the selected sidewalk sections to be maintained in better condition for the least cost. To reduce the total length of sidewalk within the City, the City

has adopted a policy of sidewalks on only one side of residential streets.

### **B. SIDEWALK PROGRAM**

To the extent practicable new sidewalks will be installed only on the east side of north-south streets and along the north side of east-west streets.

1. North-south streets. Sidewalks in need of replacement will only be reconstructed along the east side of north-south streets. Deteriorated sidewalks along the west side of north-south streets will be removed and the boulevards restored.

2. East-west streets. Sidewalks in need of replacement will only be reconstructed along the north side of east-west streets. Deteriorated sidewalks along the south side of east-west streets will be removed and the boulevards restored.

3. Front walks. Where sidewalks are removed, existing front walks would be extended to the curb as part of boulevard restoration.

4. Exceptions. Exceptions to the policy will only occur in areas where discontinuous sidewalks exist. The decision to construct, reconstruct, maintain or remove sidewalks sections will be at the discretion of the Public Works Director where, in his opinion, such work will best serve the overall pedestrian transportation system.

5. Sidewalks along major and minor collector streets. Sidewalks along major and minor collection streets will remain on both sides of the streets. This will accommodate businesses and provide pedestrians with safe conditions in high traffic volume areas.

C. ASSESSMENTS

1. Sidewalks on one side of street. New walks replaced or constructed on one side of the street will be assessed 100% to be distributed to property owners on both sides of the street. Distribution to be prorated based on the lineal feet of frontage of each property abutting the right-of-way.

2. Sidewalks on both sides of street. New walks replaced or constructed on both sides of the street will be assessed 50% to be distributed to property owners on both sides of the street. Distribution to be prorated based on the lineal feet of frontage of each property abutting the right-of-way. The City shall pay the remaining 50%.

D. PEDESTRIAN  
TRANSPORTATION SYSTEM  
CRITERIA

As areas within the City are targeted for sidewalk improvements, a comprehensive study of the overall sidewalk system within the specified area will be conducted. The goal of this study will be to determine the most logical layout for the sidewalk system to reroute pedestrian traffic within and through the area. Criterion for selecting routes will

consider accessibility to and from common destinations points such as neighborhoods, schools, parks, businesses, shopping and entertainment areas and mass transit stops.

E. CONCLUSION

Development of a “user” based pedestrian transportation system within the City of Superior is a far wiser use of the monies budgeted for sidewalk reconstruction. Commitment to the long-range planning needed to develop the best overall system to serve the public’s needs is the first step in the process. Utilizing the Sidewalk Improvement Program’s annual budget in developing the system each year will, with time and perseverance, result in a more beneficial and cost effective pedestrian transportation system.

Approved by Council: 1/7/97

# Duluth Sidewalk Improvement Policy

The following is from Duluth's City Charter and guides the city's sidewalk improvement process.

## Chapter IX

### Sec. 61. Construction of sidewalks and sewers; improvements to highways.<sup>1</sup>

(a) The council, by the affirmative vote of at least seven members thereof, by resolution, may order the construction of any sidewalk or sewer, the sprinkling, or treating with oil or other preservative, of any highway which it deems necessary for public convenience or safety, and may cause the cost of such construction, sprinkling or treating with oil or other preservative, or any portion of such cost, to be assessed against the property specifically benefited thereby;

(b) The council by the affirmative vote of at least seven members thereof, by resolution, may also order improvements of any nature to a highway which it deems necessary for public convenience or safety, and may cause one-fourth, or less, of the cost thereof, to be assessed against the property specifically benefited thereby if three-fourths, or more, of such cost is to be paid by the Federal, state or County government or by general taxation, or by any combination thereof;

(c) The provisions of Section 62 shall not apply to local improvement

projects initiated or ordered constructed by the city council under the authority of Section 61. (As amended by elections, March 20, 1956, and September 8, 1964.)

### Sec. 62. Construction or improvement of streets, sidewalks and alleys upon petition of abutting property owners; procedure for initiation of local improvements without petition.

The council may, by resolution, upon the petition of the owners of not less than thirty-five percent of the frontage of real property abutting on a sidewalk, street or alley, or parts thereof, as shown by the records of the register of deeds or the registrar of titles of St. Louis County, cause to be constructed or improved, any sidewalk, street, alley, or part thereof, and may, by resolution, upon the petition of not less than twenty-five percent of the owners owning not less than twenty-five percent of the real property to be assessed therefor, as shown by the records of the register of deeds or the registrar of titles of St. Louis County, cause to be made any other local improvement authorized by law or this Charter, and may thereupon assess the cost of such construction or improvement against the property specially benefited by such improvement.

In case the council shall at any time deem it necessary that any street or alley in the city should be constructed or improved, or that any other local improvement authorized by law or in this Charter be made, it may, without petition therefor, upon the affirmative vote of seven members thereof, by resolution, declare the necessity of such construction or improvement, and the determination to have same made.

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<sup>1</sup>For case holding that street sprinkling, authorized by this Section, is not, under certain circumstances, a governmental act, @ so as to relieve the city of liability for the negligence of an employee, see *McLeod v. city of Duluth*, 174 Minn. 184, 218 N. W. 892.



Following the adoption of a resolution to construct an improvement, whether initiated by petition or on council action, and before finally ordering in such improvement, these preliminary steps shall be taken:

(a) The council shall require the mayor to prepare or cause to be prepared plans and specifications therefor, and an estimate of the cost thereof, and to file such plans and specifications and estimate with the secretary of the special assessment board, together with a recommendation as to what portion of the cost should be paid by special assessment and what part, if any, should be a general obligation of the city, the number of installments in which assessments may be paid and the lands which should be included in the special assessment;

(b) Within ten (10) days after such filing of plans, specifications and estimates as above directed, the special assessment board shall fix the time, date and place at which the special assessment board will meet at public hearing to consider such improvement. The city clerk shall cause a notice of such hearing to be published and to be mailed to those persons appearing by name in the office of the city assessor as being subject to a real estate tax on the property to be assessed, such notice to be mailed to the address of such person as listed on the records of the assessor. The notice shall describe in general language the improvement or improvements recommended in the report to the special assessment board, the estimated cost thereof, and shall include a statement of the territorial limits within which the assessment is to be made. The notice shall also state that the preliminary plans and estimates are on file and open to public examination at the office of the city engineer during normal business hours up to and including the date set for the hearing;

(c) At the time and place specified in the notice hereinbefore required for the public hearing, the special assessment board shall meet and hear any person to be affected by the proposed public improvement or assessment therefor. The hearing may be adjourned from time to time by the board. After completion of the hearing, the board shall transmit to the council the plans, specifications and estimates theretofore filed with its secretary by the mayor, as hereinbefore required, and shall report to the council its findings as to the necessity of the proposed public improvement and its recommendation therefor, and amendments to the proposal as previously submitted, and its recommendation as to what part, if any, of the cost should be paid by special assessment and what part, if any, should be a general obligation of the city, its recommendations as to the number of installments in which assessments may be paid, its determination of the property upon which such assessments shall be levied;

(d) After the report of the special assessment board has been received, the council may by resolution determine to make the improvement and to defray the whole or any part of the cost of the improvement by special assessment upon the property specially benefited, and what part, if any, shall be a general obligation of the city, determine the number of installments in which assessments may be paid and designate the district or land and premises upon which special assessments shall be levied, and order in said improvement.

Thereafter a period of sixty days shall elapse before any further action shall be taken in the matter of such improvement. If, within said sixty-day period, a remonstrance petition against said improvement be filed with the special

assessment board, signed by the owners of not less than thirty-five percent of the frontage of real property abutting on a sidewalk, street or alley, in the cases wherein the improvement contemplated concerns construction or repair of the sidewalk, street or alley, or signed by not less than twenty-five percent of the owners owning not less than twenty-five percent of the property proposed to be assessed in the cases of other local improvements, protesting against the proposed improvement, the council shall not make such improvement at the expense of the property benefited unless within thirty days after such remonstrance petition is reported to the council, at a regular council meeting, there be filed with the special assessment board a further petition requesting such improvement signed by the owners of not less than fifty percent of the frontage of real property abutting on a sidewalk, street or alley, in the cases wherein the improvement concerns the construction or repair of a sidewalk, street or alley, or signed by not less than sixty percent (60%) of the property proposed to be assessed, in the cases of other local improvements, in which event the council may proceed with such improvement at the expense of the property benefited, notwithstanding the remonstrance. (As amended by elections, March 20, 1956, and September 8, 1964; Ord. No. 8639, 7-26-82, ' 22.)