

CITY OF HOUGHTON WALKABILITY/PEDESTRIAN PLAN



U.P. ENGINEERS & ARCHITECTS, INC.

SEPTEMBER 2002



**CITY OF HOUGHTON
WALKABILITY/PEDESTRIAN PLAN**

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*Acknowledgements: Public Works Department: Sidewalk Inventory
Livable Winter Cities Association Design Manual: Graphics*



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INTRODUCTION

In order to improve the general quality of life for residents, the City of Houghton Planning Commission carried out this study to determine how pedestrian conditions could be improved in the city.

There is growing interest by residents of the City of Houghton to walk to their destination, for going to Michigan Technological University (MTU) and/or work, to the downtown area or the city's waterfront recreational attractions. People also desire to walk and/or run for health and recreation purposes.

Whatever the reason for walking, improving pedestrian conditions is in the public interest. Promoting walking (or walkability) reduces dependency on the automobile, reduces traffic and parking requirements, and improves public health. Walkability also enhances a community's image and quality of life, an important attribute for attracting new business, investment and residents.

The City of Houghton has constraints to being a good walking town. Houghton's hillside geography makes walking harder. Some areas of the city have slopes in excess of 18%. Walking up a steep hill is difficult, even for persons in good shape. Fortunately, the topography

going east-west in Houghton is relatively flat. Downtown is an easy walk from MTU.

Another constraint to good walking in the city is the winter climatic impacts. Lake effect snowfalls with an annual average around 220 inches can be counted on from November through April, and beyond, more than 5 months. Abundant snow, ice, and extended periods of darkness are some of the unique winter conditions that are a part of life in Houghton. These conditions make walking difficult. Walkway maintenance becomes expensive and ineffective.

The key to becoming a walkable community is to first, recognize the problems and issues, then make the commitment to improve the situation. Corrective actions and improvements will have a range of costs, with some having a high cost, while others may require a simple maintenance or administrative policy change. Incrementally, small changes add up and will impact community attitudes and priorities. This plan represents Houghton's commitment to change and improve pedestrian conditions.



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THE PLANNING PROCESS AND COMMUNITY PARTICIPATION

The planning effort involved the City Planning Commission, members of the West Houghton Neighborhood Association, city staff and other interested citizens. Assistance on the project was provided by the city's planning consultant, U.P. Engineers & Architects.

The planning process included a review of existing pedestrian facilities, their characteristics and physical condition. A sidewalk inventory was generated by the Houghton Public Works Department. Existing sidewalk conditions are presented in Figure 1.

Public participation was an important part of the planning process. A planning workshop was held on September 18, 2001. The workshop used an open house format that allowed citizens to meet one-on-one with planning commissioners and city staff, review resource materials and comment on the city maps and graphics which were displayed about the room.

This planning workshop was very well attended. Citizens seemed happy that the City Planning Commission asked for comments and suggestions. Input included suggestions on new walkway locations, educating auto drivers and pedestrians, maintenance, signage, crosswalk safety, and the need for more handrails on steep slopes.

A summary of public comments is included in the Appendix to this report.



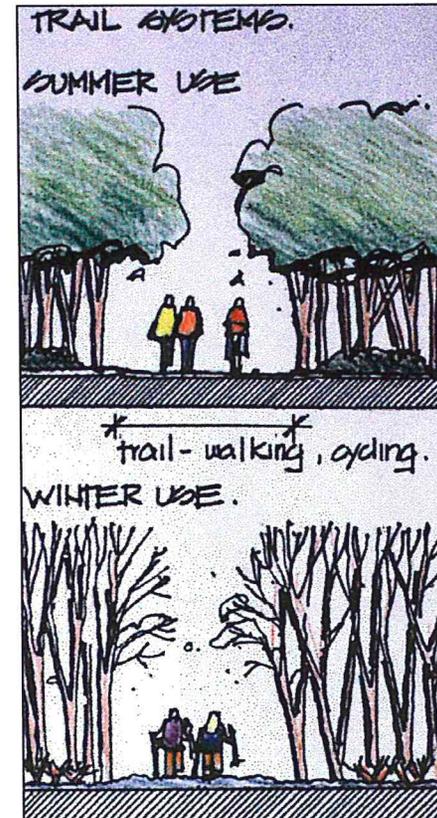
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EXISTING CONDITIONS

An inventory of existing sidewalk locations and conditions was prepared by the City of Houghton Public Works personnel. This map is provided as Figure 1.

In the older developed area of the city, sidewalks were typically constructed as part of the traditional neighborhood design of high density residential in a grid-type lot and block platting pattern. Many of these original walkways still exist today. Over the years, and probably after automobiles became common, some walkways were abandoned, and in some areas, never constructed. Topographic constraints also limited walkway construction in some areas of the city.

Over the years, the city recognized walkability by improving high pedestrian traffic areas, such as College Avenue and through enhancements to Shelden Avenue in downtown. Since the mid-1980's, the city has been developing a three mile waterfront multi-use trail that is used for walking, rollerblading, and biking, and for snowmobiles in winter. The College/Shelden Avenue corridor is maintained well for pedestrians in all seasons.





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The inventory of existing walkways and physical conditions showed where new walkways could be constructed to create links between destinations. It can also guide priorities and decisions for replacement of existing deteriorated walkways.

PEDESTRIAN ISSUES

A number of pedestrian issues were identified by the Planning Commission and citizens attending the community workshop. The majority of comments were directed to the difficulty of crossing major streets, particularly U.S 41 through the city, due to traffic volumes and attitudes of motorists.

Through downtown Houghton, east and west U.S 41 traffic is split between Shelden and Montezuma Avenues, a one way pair. Average daily traffic (ADT) totals for these one way streets is in excess of 13,000 vehicles/day. In addition to speed, motorists do not give pedestrians the right of way. Crossing Shelden Avenue has been referred to the "Shelden Avenue shuffle".



A major problem exists for pedestrians attempting to cross Shelden or Montezuma Avenues. Motorists attempting to enter the flow of one-way traffic do not look for pedestrians. They are looking only at the flow of traffic. This creates a dangerous situation.



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In the mid 1980's, several pedestrian bridges or skywalks were constructed over Sheldon Avenue, as part of a downtown revitalization project. Changes in downtown have rendered all but one of these skywalks unusable. The skywalk from a parking structure to the Wells-Fargo Bank is well-used. Research has shown now that if pedestrians must climb stairs to access a pedestrian bridge, they will forgo the safety of the skywalk and walk directly across the street.

On the south side of Montezuma, at Huron Street, is the Houghton Heritage Manor senior housing complex. Seniors living here must cross Montezuma to access the shopping and services of downtown. This situation has been of concern for some time, due to speed of traffic, and distance across the street. A fatality occurred here several years ago, resulting in a study of the problem and potential solutions. A project to improve pedestrian safety narrowed the street width, and improved signage. An on-demand signal has also been suggested for this location.

On Montezuma Avenue between Isle Royale Street and Franklin Square, there is poor walkway connectivity.

Other issues relate to the pedestrian situation at U.S.41 near MTU, particularly where students from Wadsworth Hall dormitory attempt to cross. This particular situation is of concern to the University as well, but no effective solution has been developed at this time.

Another issue is the need for a pedestrian route west of Bridge Street, in west Houghton. The West Houghton Neighborhood Association has proposed a new walkway on 2nd Street, leading to the Houghton Elementary School.

A complete listing of public comments on pedestrian issues is provided as Figure 2.



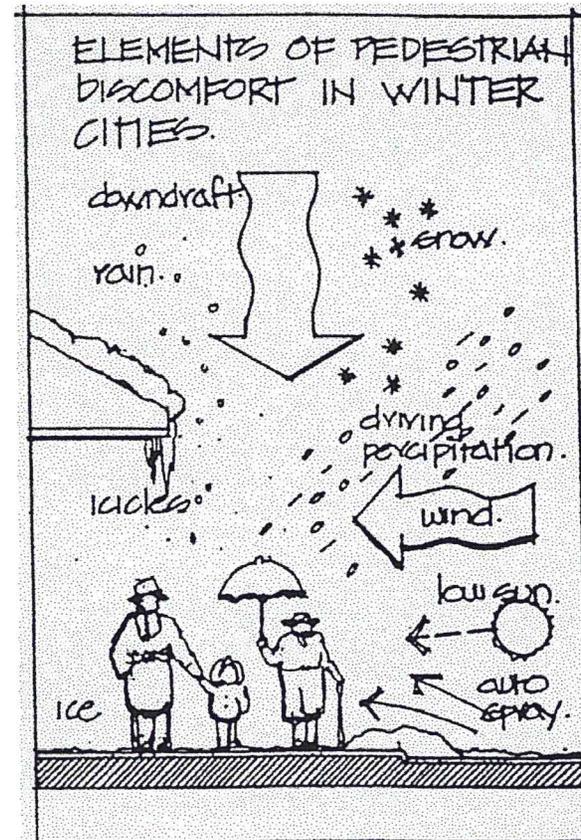
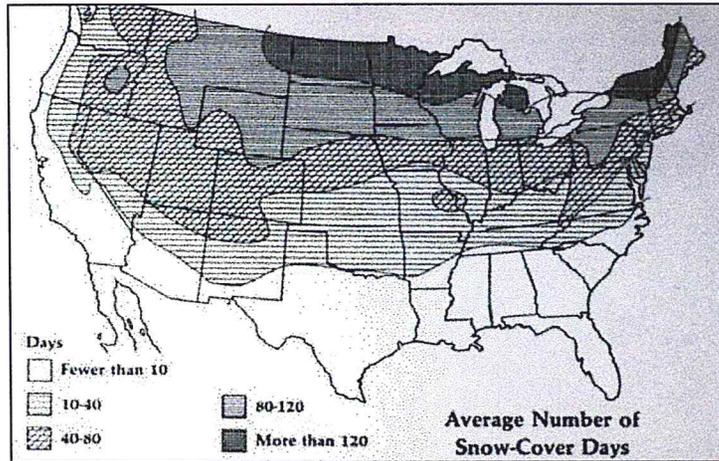


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WINTER AND THE PEDESTRIAN

As a "winter city", Houghton faces challenges and issues far different than most Michigan cities. Solutions to most winter problems are not likely to be found in Michigan, but rather, through exchanges with cities whose climate more closely matches Houghton's. This statement is especially true for improving pedestrian conditions.

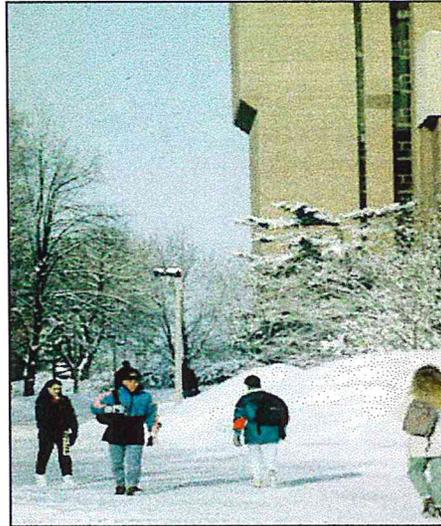
Winter greatly affects the mobility of pedestrians in northern cities. Cold, snow, and the decreased light levels in the north all influence not only the ability of people to walk in winter, but also the desire to walk.





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Cold weather is not so bad by itself, as one can wear the right clothing and be comfortable. When cold is combined with wind, walking can be very uncomfortable, if not dangerous.



Snow and the condition of the walking surface itself are major factors with mobility. A packed snow surface actually is one of the best walking surfaces. Two to four inches of fresh snow and walking becomes more difficult. If the snow is old or has thawed, and the surface is icy, then walking becomes more difficult and dangerous, especially when combined with a sloped surface.

Decreased light levels also influence walkability. Pedestrians are more susceptible to auto collisions under decreased light levels. It becomes difficult to see ice and obstacles, resulting in more slip and fall accidents. People are not always comfortable walking at night, unless the walkway is well-lighted.

Among winter cities, one also finds a variety of winter climatic conditions. Conditions range from very cold with little snowfall, to moderately cold with much snow. The latter conditions, as experienced in Houghton, are the most difficult to consistently create good pedestrian conditions. To become a walkable city in these conditions requires more responsibility by the city government and citizens.

Fashion, particularly shoe and boot fashions, has been clearly out of step with winter. Many styles have smooth soles, not suited for walking on slippery surfaces.



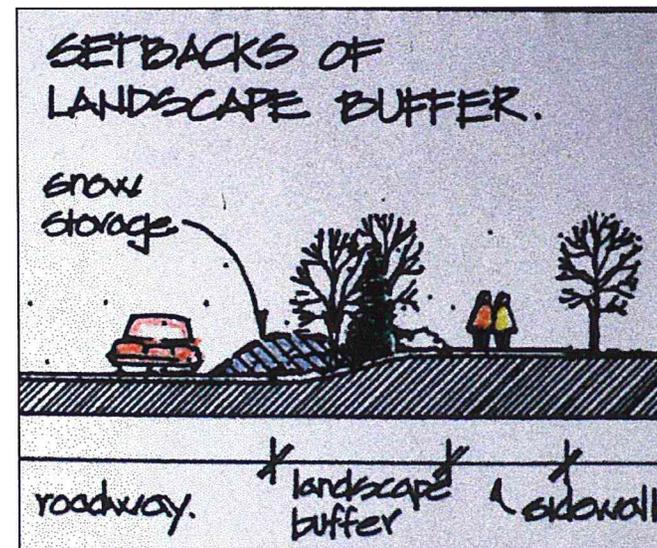
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A recent review of literature relating to pedestrians and slip and fall accidents was made, including the book Slip, Stumbles and Falls: Pedestrian Footwear and Surfaces, by B. Everett Gray. This book was published by the American Society for Testing and Materials (ASTM). There was no mention of winter and its effects on pedestrians and walking in this book. Was this an oversight and winter was merely forgotten? Or, perhaps it is just another example of winter and its challenges being left out in the cold by our biased American culture.

It is generally recognized that most northern cities were not designed for the winter climate. This affects the pedestrian directly. Older city development patterns, such as the grid system, frequently have sidewalks. However, in snowbelt areas, the space used for the walkway becomes important for snow storage. In newer suburban areas, sidewalks are frequently not constructed at all.

If the city were to be designed for the pedestrian, the walkway would take on more prominence, with separation from traffic, windscreens using earth forms, evergreen trees, and adequate snow storage along streets.

During winter, walking becomes more difficult and often uncomfortable. This is a simple fact. If we, as citizens of winter cities, desire to make our communities more walkable, then we must consider all these environmental and psychological factors in the design of our infrastructure and maintenance.





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GOALS AND OBJECTIVES

The Planning Commission developed a set of goals and objectives to guide the planning process. The goals and objectives are outlined below:

Walkability Goal:

The goal of the Walkability and Pedestrian Plan is to establish a network of pedestrian facilities that will :

- Encourage walking as an alternative to automobile use
- Promote community health and lifestyle
- Improve public safety
- Reduce auto traffic and parking needs in downtown and other areas of the city

Objectives:

- Link primary destinations with safe pedestrian facilities within the City of Houghton, such as MTU, the downtown, the waterfront, the public schools, neighborhoods and Sharon Avenue/M-26 corridors.
- To create pedestrian links both north-south and east-west in the city.

- To calm traffic where desired within the city through the design or redesign of streets and intersections.
- Educate the public through signage and a public awareness campaign, so that automobile drivers respect the rights of pedestrians by slowing down and yielding to pedestrians.
- Mitigate Houghton's steep hillside topography through the use of designated pedestrian routes, stairways, handrails, and other creative design elements. Improved maintenance, sanding and possibly snow-melting systems should be encouraged.



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ACTION PLAN

The action plan lists and describes projects and programs targeted to improving pedestrian conditions in the City of Houghton.

Huron Street at Montezuma Pedestrian Crossing

Montezuma Avenue carries approximately 13,000 vehicles/day (ADT) as part of the U.S 41 one way pair loop through downtown. Speeds on this segment are typically higher than the posted 30 mph speed limit.

Huron Street is a major access point to downtown parking. Roof structures were placed over the street in 1978 as part of a downtown revitalization project, to provide some protection from winter snows and improve traction on the steep slope.

At Montezuma and Huron, a senior citizen apartment building is located south of Montezuma. Seniors wishing to walk to downtown for shopping and services must cross both travel lanes of Montezuma. A pedestrian fatality occurred at this intersection several years ago. Options have been considered to improve pedestrian safety at this intersection.

The Michigan Department of Transportation (MDOT) has funded safety improvements at this intersection. The street has been narrowed and on-street parking better defined west of the intersection. The curb line and sidewalk was extended at the intersection to shorten the distance pedestrians have to travel across the street.





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Huron Street Improvements

The portion of Huron Street under the roof structures will be improved with pedestrian lighting and visual improvements to the structures. This project will enhance the pedestrian conditions in this two block area.



Pedestrian tunnel to Waterfront under M-26

MDOT has proposed a pedestrian tunnel under M-26 to the waterfront from the west Houghton neighborhood at the end of Sixth Street. The tunnel will emerge from the hillside south of the park. At this time, engineering is underway for this project.



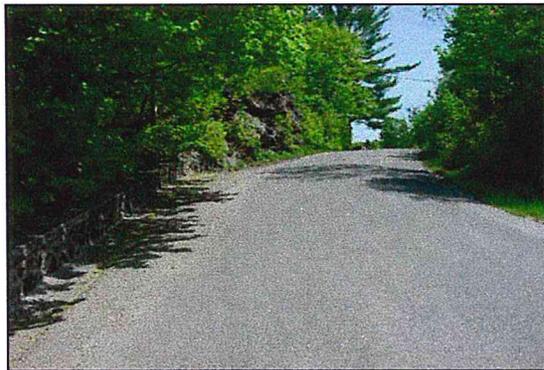


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Create a pedestrian corridor along Houghton Avenue

Houghton Avenue offers an opportunity to establish an east-west walking and bike route. The street traverses the Houghton hillside, thus is relatively flat. The street carries a very low volume of traffic, due to stop signs at every intersection.

Topography and existing development patterns may not allow for construction of sidewalks in all areas. Houses are placed close to the street in the pre-automobile traditional neighborhood design of this area throughout Houghton. Where sidewalks are not present, the street can be striped and signs placed to designate the street as a pedestrian corridor.



Create a pedestrian corridor along Seventh Avenue

Much like Houghton Avenue, Seventh Avenue offers a relatively flat and low traffic volume corridor. MTU students and employees can access Seventh Avenue only one block south (uphill) of the MTU Student Union. Like the Houghton Avenue recommendation, signage and striping can provide for walkers and bicycles where an off street walkway is not possible.





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Second Street Walkway

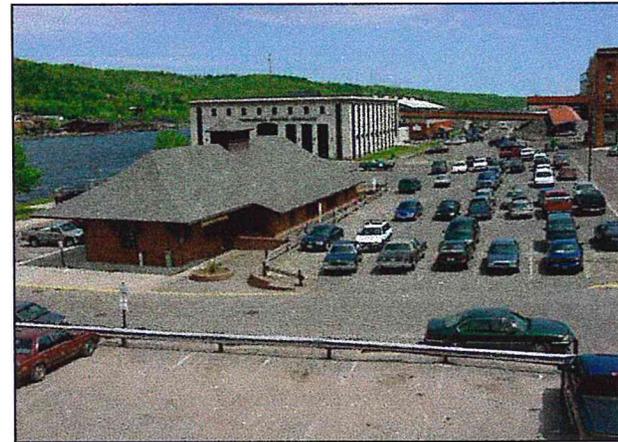
The west Houghton neighborhood lacks a clear defined walkway to the Houghton Elementary School. The West Houghton Neighborhood Association has proposed a sidewalk on Second Street to the school. There is some resistance from property owners to give up right-of-way for a sidewalk, however, there is justification for a north-south walkway to the elementary school. Year round maintenance is a major issue for neighborhood walkways that are not primary routes.

College Avenue Pedestrian Improvements

College Avenue serves as the busiest pedestrian route in the city, linking the downtown to MTU. This corridor is a priority for winter maintenance. Improvements proposed include resting areas with benches, landscaping, and historical interpretation signage.

Bridge Street/Military Road

A sidewalk is proposed on the west side of Bridge Street from Calverly to Sharon Avenue.



Mattila Square Walkways

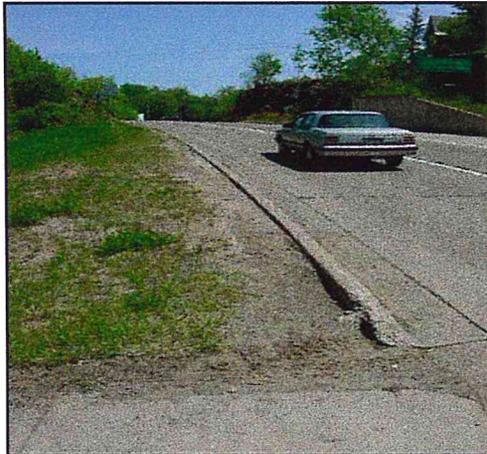
The block of land between Isle Royale and Huron Streets, Lakeshore Drive and Portage Lake has become known as Mattila Square. With the exception for the historic depot building that serves as Yalmer Mattila Contracting offices, the land is used for parking. The City of Houghton has proposed some reorganization of the parking to create space for walkways to the lakefront and for a segment of the waterfront trail that crosses the parking area. New theme lighting is also proposed for this area.



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Montezuma Avenue (west of Franklin Square)

A walkway from Isle Royale Street is proposed on the north side of this entire segment. A walkway is also proposed on the south side between Portage and College Avenue.

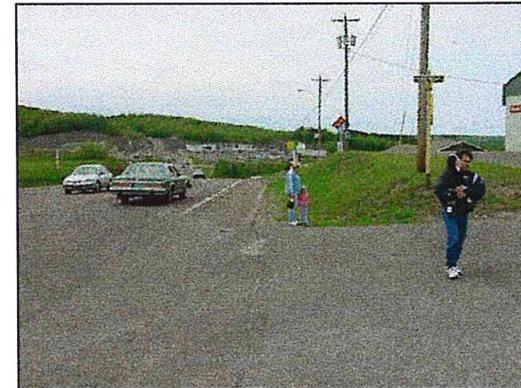


Bridge Street at Montezuma Pedestrian Crossing

Bridge Street is a major north-south pedestrian route. Crossing Montezuma Avenue at this location is challenging. A similar treatment to what is planned at Huron Street is proposed to make this crossing safer.

Sharon Avenue Walkways

Sharon Avenue is a major east-west arterial on the south side of Houghton. The roadway has a rural cross-section, without curbing, for much of its length. A walkway and bike route is proposed to be constructed alongside the roadway.





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Pedestrian Awareness and Education

Public input during this planning process indicated that automobile drivers do not respect the rights of the pedestrian in Houghton, particularly in the downtown area. Through signage and public service announcements, it may be possible to educate drivers as to their responsibility in known pedestrian areas. Increased enforcement of laws pertaining to pedestrians is also suggested

Waterfront Walkway Improvements

The Houghton waterfront walkway serves both recreational and pedestrian needs in the city. It is proposed to continue lighting, signage and pavement improvements along the entire route.

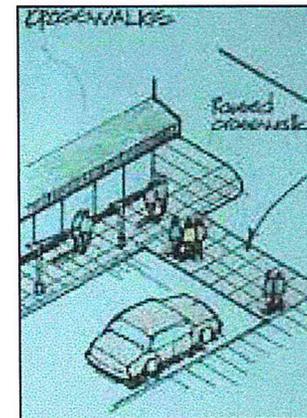
A connection through the R/V park to the Houghton Canal Road is proposed.



Pedestrian Amenities

Aids to pedestrians and amenities are proposed throughout the city where appropriate and necessary. Some of these are traffic calming improvements that will also benefit the community by slowing drivers and alerting them to the presence of pedestrians.

- Pedestrian signage and route maps
- Handrails on sloped areas
- Textured pavement surfaces on sloped areas
- Textured pavement crosswalks
- Raised crosswalks
- Speed humps
- Extended curbs and walkways at intersections





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FUNDING

The City of Houghton has an enviable track record of obtaining grants to fund important infrastructure improvements, including transportation projects. Many of the projects identified are eligible for funding from the Transportation Enhancement Program through MDOT. Continued waterfront trail work is eligible for coastal Management Grant funds through the Michigan Department of Environmental quality (MDEQ).



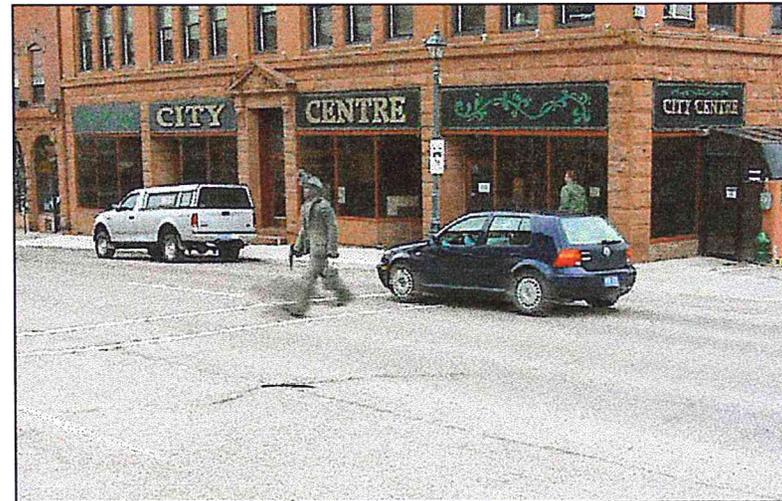
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CONCLUSION

Quality of life is recognized today as one of the most important factors in a community's image, business climate and economic vitality. This is even more important for Houghton, due to the city's remote location. The overall environment for pedestrians, or walkability, is one of the quality of life indicators in the 21st Century.

Creating good walking conditions in Houghton presents challenges, due to topography and the winter climate. Investment in pedestrian improvements will result in long-term benefits to the community, primarily in health, less dependence on the automobile, and reduced traffic volume.

The projects identified in this plan will make incremental changes to the perception of walkability. As more people become accustomed to walking, there may be additional demands for improvements.



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WALKABILITY PLAN
Public Forum: September 18, 2001
Comments and Suggestions**

Walkability Plan Comments

Green light at MacInnes Drive is not useful for walkers (cycle, timing).

Sidewalks on MacInnes Drive should be cleared with each pass of snowplow.

Need a stop sign on Portage at 7th Ave. to slow traffic.

Please do not put a sidewalk here (on 2nd), it will take up 1/3-1/2 of our front yard-really! I know it is close to the school, but I think people are used to not having a sidewalk and will continue to walk in the street, even if a sidewalk exists.

Please put a sidewalk on 2nd St.-our children deserve it.

Narrow 2nd St. below Douglass to slow traffic.

Sidewalks are inadequate on M-26-would be nice to have better walkways on both sides and better crosswalks.

Need signs-"yield to pedestrians in crosswalks".

Out of state visitors have asked about open pit mine below the "Bluffs".

Sidewalks directly off road with no green space between are as dangerous as no sidewalk at all.

Somewhat better (see above comment) if with a non-mountable curb.

Teach children ethics of proper safety. Continued education.

Walkability comments continued

Safer crossings.

Crossings on demand.

Enforcement of traffic laws important.

Sign: Houghton is a pedestrian friendly city/Pedestrians, beware in Houghton.

Education of public: Pedestrians important.

Some of the unfinished streets should be completed.

Repair, decorate, maintain public restrooms downtown.

Develop bike trails, walking paths with a bench or two along the way.

What happened to the addition of trees along M-26- that was a great idea?

What happened to the sidewalk MDOT was going to put in west of M-26?

Put stop sign on Calverly heading west at Jefferson so cars coming up hill from M-26 can turn left onto Edwards without stopping (dangerous in winter).

Have people keep their property clean.

Sidewalk on 2nd Street will not work. Kids will not use it, will not be clear.

Improve crossing at Montezuma and Bridge.

Walkability comments continued

Revise sidewalk plan and crossing west of bridge for pedestrians coming across the bridge and those walking west from Shelden Ave to M-26.

Handrail needed on Bridge from Montezuma to behind the Backroom Bookstore.

Close Bridge St. north of Montezuma to vehicular traffic, make it a major pedestrian crossing area.

Sidewalks here (Bridge St.?) will not work! Some of street-facing strips are privately owned and driveways are steep. Also, who will shovel snow from walkways 5-6 months/year.

Continue sidewalks on Bridge St. all the way to the school.

Continue sidewalk up Bridge St. and Military.

Need lights in stairwell behind U.P. Engineers & Architects to the upper deck.

Covered streets/sidewalks are icy and slick-sheltered but dangerous in winter.

Find a way to keep bird droppings off handrails on Huron Street.

Add a handrail on Dodge between Montezuma and Houghton.

People need to walk on Montezuma too and there should be adequate provisions for pedestrians.

Slippery conditions for people who park behind U.P. Engineers & Architects and the walk down to Shelden Ave.

The north-south streets are far too steep to be walkable straight up.

Franklin Square-this is a tough crossing area.

Walkability comments continued

Franklin Square-the flowers are great!

Houghton Ave between Franklin and Prospect-this is very narrow and dangerous walking in winter.

At MTU-too many crossing locations were added. Need one more light (stoplight?).

MacInnes Drive and U.S.41-think big! Bury or elevate U.S 41. Make crossing on foot safe and attractive.

MacInnes Drive- how can walkers and bikers get up this hill.

Post signs that pedestrians in crosswalks have the right of way.

Yes, more signage about motorists needing to stop for pedestrians.

West Lakeshore Drive is no longer a parkway as originally planned due to the amount of bypass traffic, construction vehicles, etc that are now using this street. It was suggested to put more speed bumps along there for a total of 5 and also alternating speed bumps with planter boxes.

Someone felt the tunnel was going to be a problem as far as kids using it as a hang out spot and other people not wanting to use it.

Franklin Square intersection crossing is dangerous.

More public awareness of how to drive in our town...i.e., stopping for pedestrians, etc.