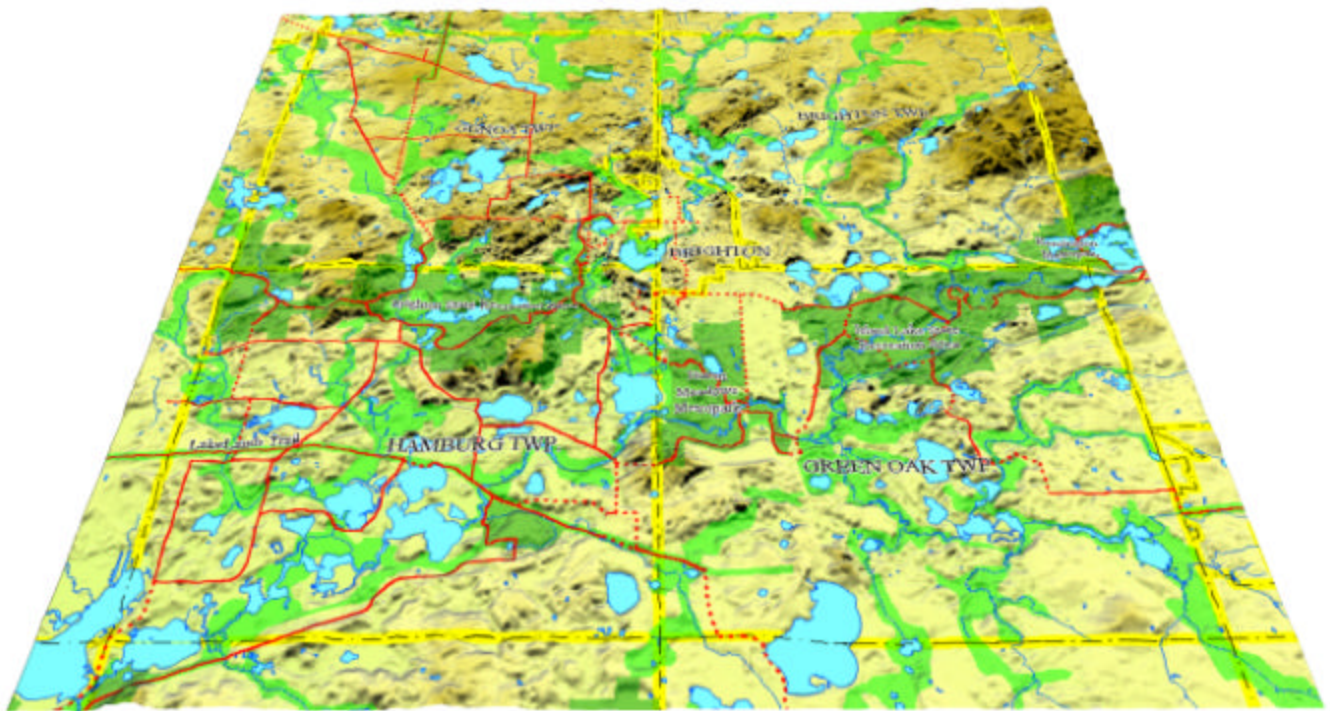


Southeast Livingston Greenways



Plan and Summary Report

November 2000

Southeast Livingston Greenways

Plan and Summary Report



Written by:
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Rivers, Trails and
Conservation Assistance
Program

November 2000

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Project Partners



Southeast Livingston Greenways, a project of the Rails-to-Trails Conservancy, Michigan Field Office, the National Park Service Rivers, Trails and Conservation Assistance Program, and Livingston County Planning Department partnership with:

Brighton Chamber of Commerce

Brighton Historical Society

Brighton Township

City of Brighton

DALMAC Fund

Genoa Township

Green Oak Historical Society

Green Oak Township

Hamburg Township

Huron-Clinton Metropolitan Authority

Huron River Watershed Council

Livingston Board of Realtors

Livingston County Road Commission

Livingston Home Builders Association

Livingston Land Conservancy

Michigan Department of Natural Resources

Michigan Department of Transportation

Michigan United Conservation Clubs

SIERRA Club

Southeast Livingston Recreation Authority

The Greenway Collaborative, Inc.

Forward

The Southeast Livingston Greenways Plan represents the culmination of a two-year collaborative partnership in planning effort involving local government officials and hundreds of Livingston County residents working toward a common vision of the future. The vision is for a system of protected open spaces and trails that will connect people with each other and important places and will help to preserve the natural systems and character that makes our County special.

Through the *Southeast Livingston Greenways Project*, we have an opportunity to identify natural, cultural, and historical features that are important to protect and to guide development around these resources. The alternative, as seen in many urbanizing areas, is to develop nearly all buildable land leaving only what is not suitable as open space for future generations. In some developing areas, even the rivers and streams are often placed in concrete and directed underground where they will not interfere with “progress.” Livingston County is still at a stage of development where thoughtful conservation actions can help preserve and enhance the components that contribute to our high quality of life.

Much of the support and drive behind the greenways project is found in existing community master plans, recreation plans, and public opinion surveys; the desire to protect sensitive environments and preserve community character; and the need to accommodate new development while minimizing traffic impacts. The greenway plan provides a vehicle to address these concerns. The focus of the plan is realized through achievable steps that can be accomplished in the next few years. The success of this plan will require a close partnership among government, business, civic organizations, developers, and individuals.

The vision is bold and the tasks necessary to implement the plan are not easy. We hope this plan will serve as both a guide and an inspiration for the greenway vision and will provide the tools necessary to see the plan to fruition. The communities involved in the *Southeast Livingston Greenway Project* are taking a proactive approach to shaping the Livingston County community of tomorrow.

Sincerely,

Jack Labelle
Chairman
Livingston County Board of Commissioners

Introduction

The southeast corner of Livingston County is in the midst of a delicate balancing act. Its rich natural resources, strategic geographic location, and proximity to expressways have made it an attractive location for new development. The question is how can these communities: Genoa, Brighton, Hamburg, and Green Oak Townships, along with The City of Brighton - continue to develop without destroying the rural character, natural features, and quality of life that make this area so special.

Greenways are an important part of that answer. They are a way to unify open-space planning efforts throughout the area. In addition, they provide important non-motorized links that offer attractive alternatives to the automobile as well as a valued recreation resource. In short, they can help make Southeast Livingston County a better place to live, work, and play while continuing to foster a healthy and growing economy.

Another Piece in the Puzzle

This project is a local outgrowth of Southeast Michigan Greenways and the Livingston County Planning Department's Greenway and Open Space work. This report is a companion piece to three other reports, *A Vision for Southeast Michigan Greenways*, by Rails-to-Trails Conservancy and *Livingston County Greenways Initiative*, and *Open Space Planning* by the Livingston County Planning Department. These three documents provide a wealth of information on the benefits, techniques, and approaches to greenway and open space planning.

This plan takes those concepts and applies them at the local level. It reflects the input and direction of a diverse group of people who participated in this project.

Why a Multi-Community Greenway System?

It is all too common for conservation corridors and trails to stop abruptly at municipal or park boundaries. Those greenways that exist, while

important facilities by themselves, tend to be floating in space, cut off from each other and the populations they are there to serve.

Greenways are about connections. Think of a greenway system as you would a road system. A single road that connects a few points has limited value. Likewise, a road system in one community that does not connect with those of its neighbors' would not be in the best interest of the residents. But this is how many greenways are being created today.

Public and private dollars are being expended on greenways without looking at "the big picture." A multi-community approach will allow investors in greenways to objectively evaluate needs and assign resources to meet those needs.

No Single Solution

In addition to going through multiple jurisdictions, the greenway network proposed is a mosaic of public and private lands. The proposal strikes a balance between preserving private property rights and promoting a unified conservation approach. The greenway corridors may be protected on private properties with techniques such as conservation easements and open space overlay zoning that respect existing zoning densities and development potentials.

Making the Vision A Reality

The Southeast Livingston Greenways project is focused on achievable steps that can be accomplished over the next few years. In addition, the plan outlines long-term enhancements that can be incorporated as a part of major infrastructure improvements.

A Model for Other Communities

This plan also serves as a model for other communities who are facing or will be shortly facing the same challenges as Southeast Livingston County. It is model of cooperation towards a positive vision of livable communities with healthy economies.

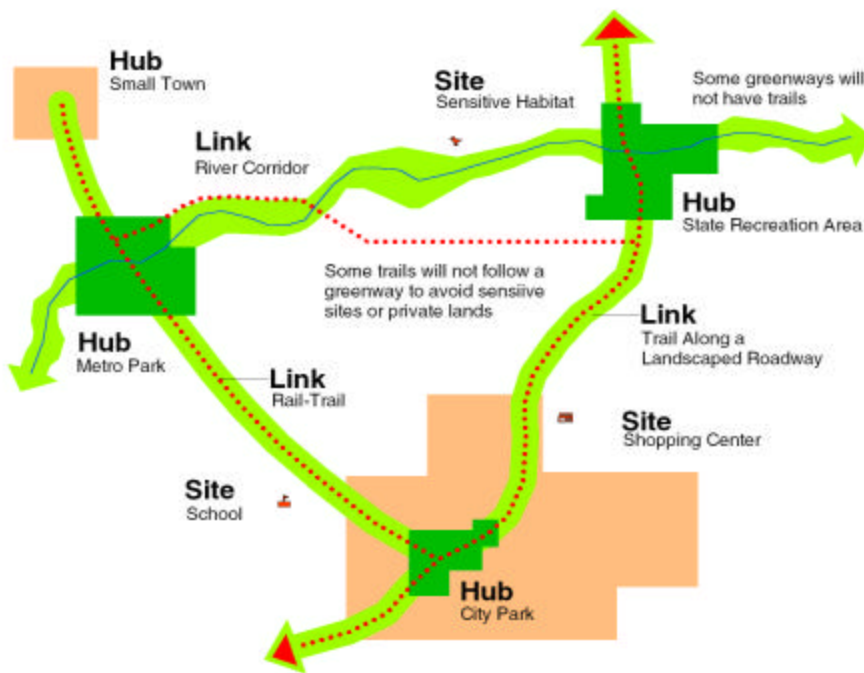
An Overview of Greenways

Greenways Defined

greenway (*gren'-wa*) *n.* 1. A linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route. 2. Any natural or landscaped course for pedestrian or bicycle passage. 3. An open-space connector linking parks, nature reserves, cultural features, or historic sites with each other and with populated areas. 4. Locally, certain strip or linear parks designated as a parkway or greenbelt. [American neologism: green + way; origin obscure.]

Charles E. Little, *Greenways For America*, (The John Hopkins University Press, 1990), p. 1.

A Greenway Network



A greenway network can be distilled to three basic parts: links, hubs and sites.

Links - Links are the heart of the greenway system. They are the linear connections for people and wildlife

Hubs - Hubs are the anchors of the system. They provide a base or destination for people and wildlife.

Sites - Sites are smaller than hubs and serve as points of interest, origins, or destinations.

The Benefits of Greenways

Imagine being able to walk or bike through a ribbon of green to your workplace, a friend's house, the local store, a metropark, or a state park. Imagine being able to access an interconnected system of trails directly from your home without having to drive to a park. These visions can become a reality for Southeast Livingston County through the creation of a greenway network.

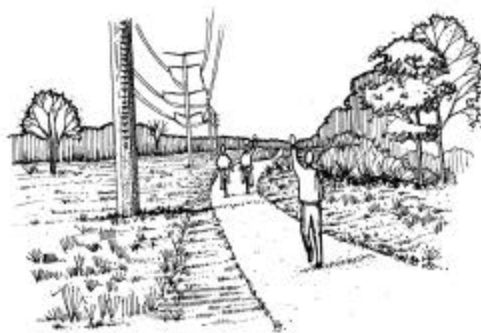
Greenways offer a wealth of benefits for people and wildlife. The following highlights are just a few:

Recreation

Greenways offer communities a trail system for a wide variety of recreation close to home – bicycling, jogging, hiking, cross-country skiing, horseback riding, canoeing, or just plain strolling.

Conservation

Greenways protect environmentally important lands, plants, and animals. Greenways provide lifelines for wildlife moving from one isolated natural areas to another.



Transportation

Greenways provide corridors for bicycle and pedestrian paths that enable non-motorized travel between homes, schools, recreation facilities, workplaces, shops, and community attractions.

Water Quality and Flood Control

Much of the drinking water in Southeast Michigan comes from lakes and rivers. Greenways help protect water quality by buffering lakes and rivers from polluted run-off. Greenways can also protect floodplains from development, thereby reducing flood damage.

Educational/Interpretive

Greenways serve as outdoor classrooms providing opportunities to interpret a community's historical and natural heritage.

Tourism/Economic

Greenways benefit businesses associated with tourism and recreation. In addition, by enhancing the quality of life, Greenways make an area a more attractive location in which to live, work, raise a family, and locate a business.

Resources and Places

The presence of the Huron Meadows and Kensington Metroparks, the Island Lake and Brighton State Recreation Areas, the LakeLands Trail State Park, and the City of Brighton provide an extensive base from which to develop a regional greenway network within Southeast Livingston County.

Kensington Metropark

Straddling the boundary between Livingston and Oakland Counties, Kensington Metropark's 4,337 acres provides an opportunity for an eastern hub or destination for a greenway network in Southeast Livingston County. The park has a paved bicycle trail that encircles Kent Lake - the centerpiece of the park. Future plans call for this trail to be linked to the new paved trail in Island Lake State Recreation Area via a connection under I-96.

Island Lake State Recreation Area

Separated from Kensington Metropark by I-96, Island Lake State Recreation Area contains 4,000 acres that are divided in half by the Huron River. The park has over 14 miles of dirt trail that are split into two connecting loops. The East Loop is over five miles long and circles the Huron River. The West Loop, the easier of the two, is over nine miles long. Bicyclists must ride in a counterclockwise direction. New to the park is a paved bicycle trail that stretches through the eastern end of the park. Future plans call for the paved trail to be extended further west into the park and to connect under I-96 northeast to the paved bicycle trail in Kensington Metropark.



Along the LakeLands Trail State Park

Huron Meadows Metropark

Separated from Island Lake State Recreation Area by private property and the US-23 corridor, Huron Meadows contains over 1,500 acres directly south of the City of Brighton. The park has a hiking trail system that consists of two looped natural surface trails that form a figure-8 in the center of the facility.

Brighton State Recreation Area

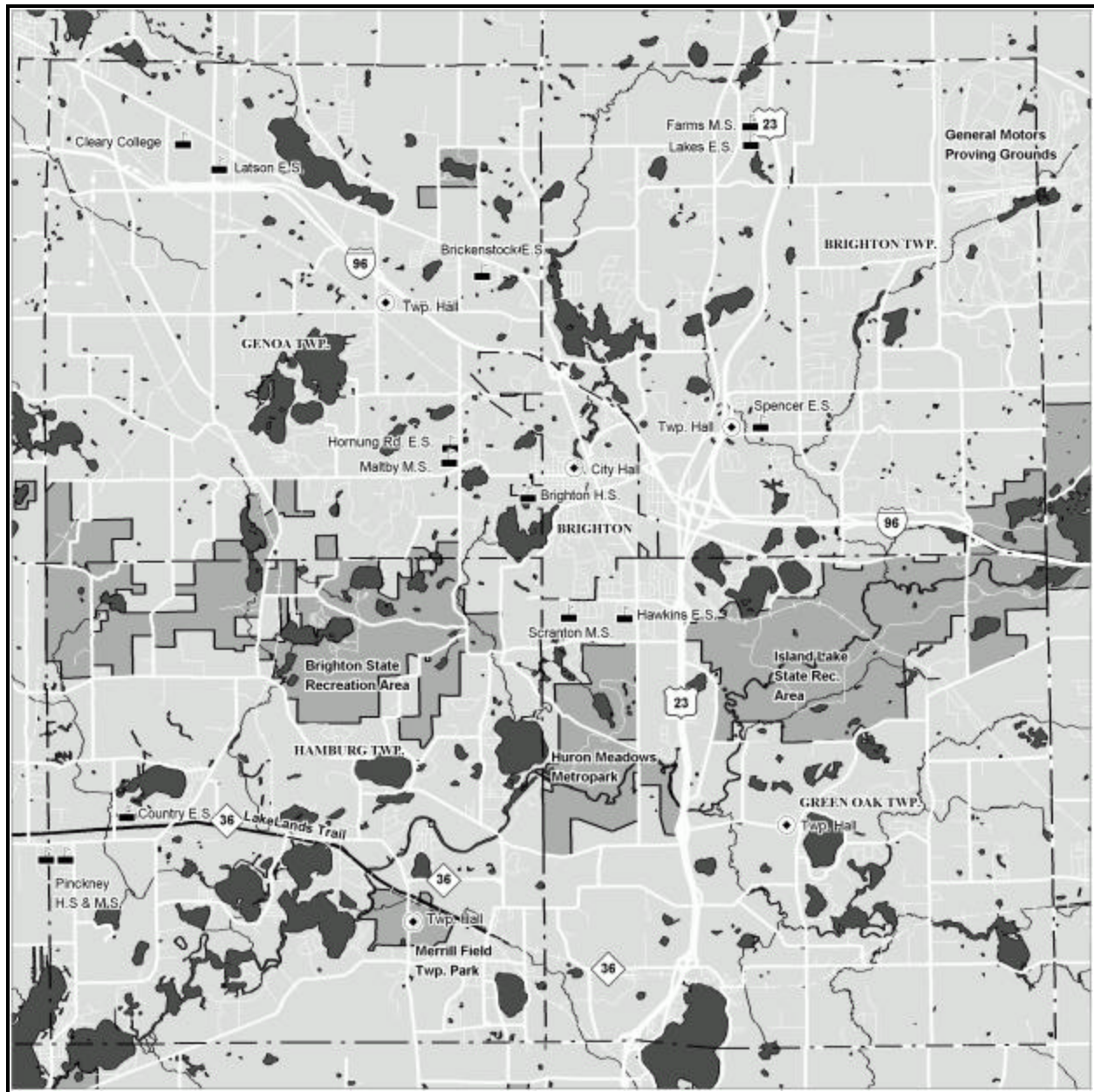
Located southwest of the City of Brighton, the Brighton State Recreation Area contains some 5,000 acres of public land that is broken up by privately owned parcels. The largest part of the park is the section east of Chilson Road. This section also contains the two hiking and three new mountain bike trails. All of the trails are looped facilities with natural surfaces. The mountain bike trails are to be ridden in a counter clockwise direction.

LakeLands Trail State Park

The eastern end of the LakeLands Trail State Park stretches west from US-23 across southern Livingston County along an abandoned rail corridor. This eastern section of the trail is currently unimproved. When complete, the trail will extend southwest almost to the City of Jackson. The LakeLands Trail is a key component of the Discover Michigan Trail. As proposed by the Rails -to- Trails Conservancy Michigan Field Office, the Discover Michigan Trail is envisioned as the framework for an interconnected statewide system of trails on abandoned rail corridors and other land and water routes. There is a separate fee required to use the LakeLands Trail State Park

City of Brighton

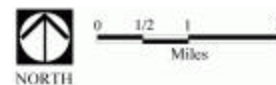
In the center of the four townships is the City of Brighton. This community has seen considerable growth in the past ten years and continues to have new developments. The historic downtown is a destination for restaurants and shops as well as the popular Mill Pond park.



Legend:

- Abandoned Railroad
- Railroad
- Overhead Power Lines - Easement
- Overhead Power Lines - Owned
- Pipeline - Easement
- Main Roads
- Minor Streets & Residential Roads
- Rivers and Streams
- Water Areas
- Significant Open Space

Resources and Places



The Master Plan

The Master Plan illustrates how a greenway system could look in this area. The plan reflects the input of a Steering Committee with representatives from all five communities. In addition, focus group meetings were held with representatives from development interests, environmental/conservation interests, and parks and recreation interests. The process is further defined in Appendix 2: Planning Chronology.

The plan has been divided into two related sections:

- **Nonmotorized links** – routes for bicycling and walking
- **Conservation corridors** – corridors for wildlife movement and water conservation

Ideally, greenway corridors have both conservation and nonmotorized components, but this is not always possible. Oftentimes the inclusion of the nonmotorized component is problematic. In some cases, the natural feature is too fragile to accommodate human use; in others the greenway may transverse multiple private properties making approval for such an effort difficult. The proposed plan has taken the approach that conservation corridors should be based on critical natural features regardless of ownership, and that nonmotorized links should be located on public lands, rights-of-ways, or properties of willing parties.

Greenways as Infrastructure

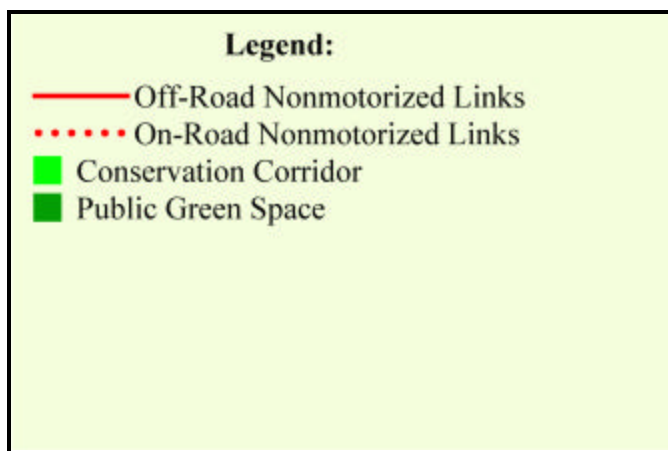
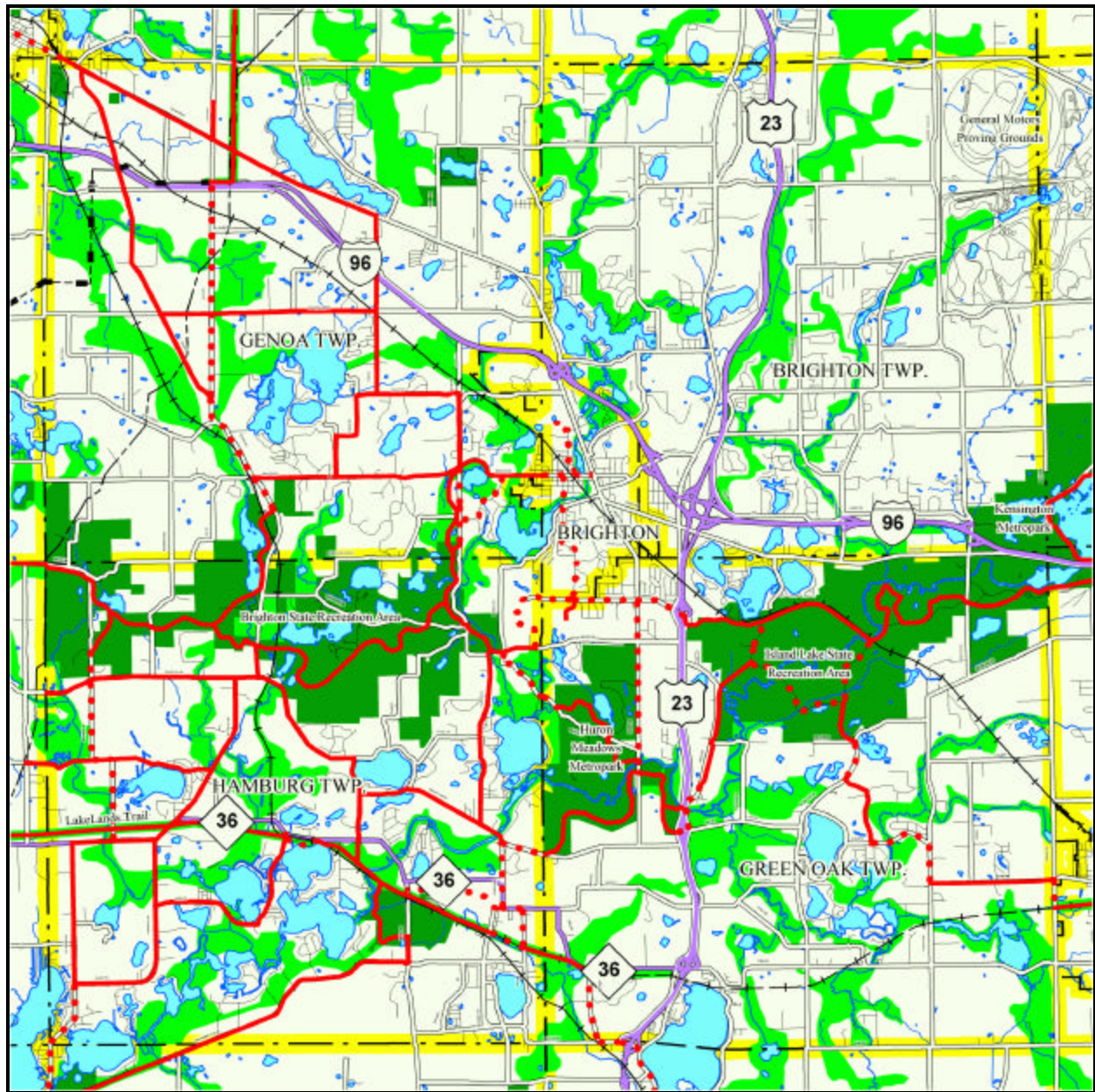
The plan considers the greenways as infrastructure. The conservation corridors largely are existing infrastructure that needs to be maintained as an area develops. The goal here is to provide a guide to land developers, so that the open space typically set aside in any development is coordinated. This will result in better functioning ecosystem by avoiding the fragmentation of open space that typically accompanies unplanned open space set-asides.

The non-motorized links are largely non-existent and need to be established as an area develops. The increased motorized vehicle use that accompanies development often “squeezes out” pleasant shared use of a roadway by pedestrians and bicyclists. Just as road pavement and alignments change with increasing traffic volumes, so must the accommodations for nonmotorized use. This plan identifies routes key routes that may not need any special accommodations beyond directional signage at this time but will need improvements as the road design changes. As with the conservation corridors, the nonmotorized links must be viewed as a continuous system, with barriers removed and key sites connected.

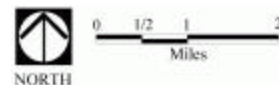
Limitations of the Study

While greenways are the common ground for numerous quality of life initiatives, such as nonmotorized transportation, open space, recreation, water quality, wildlife habitat, etc., the greenway concept does not completely address all of those concerns. Therefore this plan is not a comprehensive nonmotorized plan, open space plan, recreation plan, water quality plan, habitat plan, etc. The focus is on greenway corridors.

The following sections describe approaches to implementing and designing the conservation corridors and nonmotorized links. In addition, a series of regional and township maps show the proposed corridors and resources of the area.



Master Plan Summary

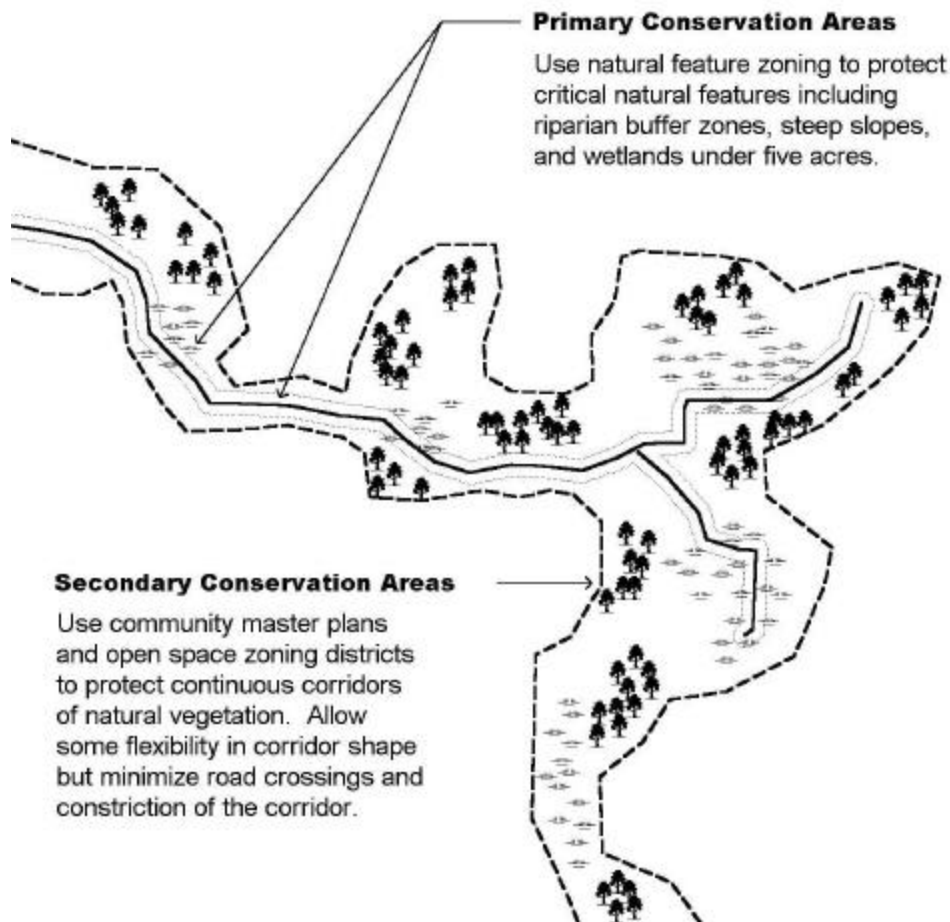


Conservation Corridors

The Conservation Corridors shown are based on existing wetlands, woodlots, poor soils, and fallow fields. The corridors provide key wildlife linkages as well as protecting water resources. Wetland statutes already protect a significant portion of the corridors shown. The remaining areas could be protected by a number of methods including overlay zoning, conservation easements and purchase from willing sellers.

Protection Approach

The purpose of the conservation corridors is to protect continuous corridors that will provide for: the movement of wildlife, the protection of water quality, and the preservation of desirable natural and scenic qualities. The approach to protect the conservation corridors addresses both the need to protect key natural features yet allow for flexibility in the development of the area. The approach utilizes two levels of protection: Primary Conservation Areas and Secondary Conservation Areas. The diagram below illustrates how the two approaches work together to secure a corridor.



Primary Conservation Areas

The Primary Conservation Areas include quantifiable features that are fragile lands and that contribute to the quality of life in the community

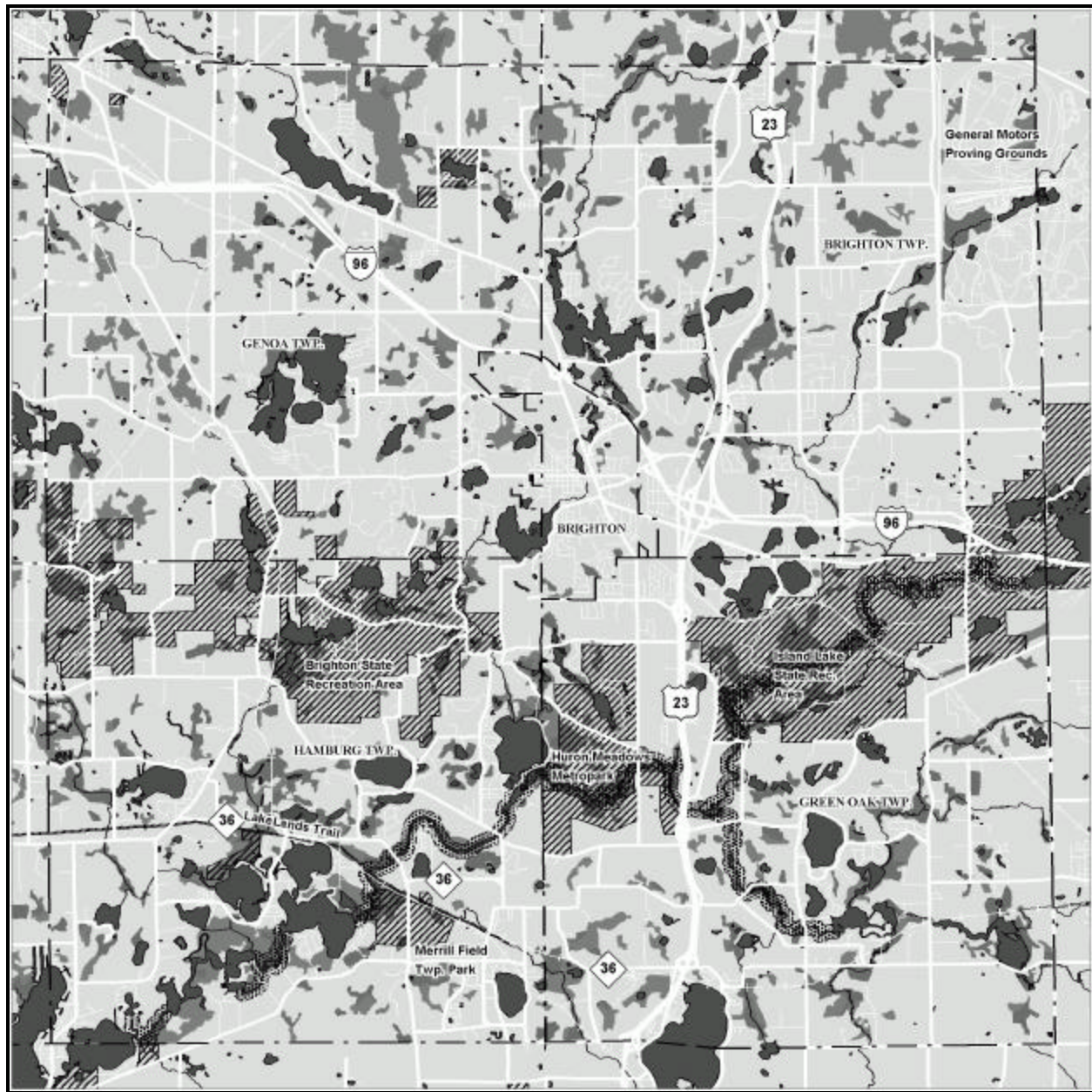
- **Wetlands Over 5 Acres** – These features are already protected by the Wetland Protection Act, Part 303 of the Natural Resource and Environmental Protection Act, P.A. 451 as amended.
- **Wetlands Under 5 Acres** – When they are contiguous to an inland lake or stream these features are protected by the Wetland Protection Act. Additional local legislation is needed to protect smaller independent wetlands. Genoa and Green Oak Townships have some existing protections for smaller wetlands.
- **Waterway and Wetlands Buffering** – There are exiting riparian corridor setbacks and protections for the Natural Rivers designation on parts of the Huron River. For other waterways and wetlands, a 100-foot setback is suggested to maintain water quality. The model ordinance included in *Open Space Planning*, published by Livingston County Planning, is an appropriate means to protect these features.
- **Slopes over 12%** - These features are also best protected by an open space ordinance, such as the model ordinance included in *Open Space Planning*, published by Livingston County Planning.

The proposed conservation corridors are primarily based on linear groupings of primary conservation corridors. There are many areas where primary conservation areas fall outside off the proposed conservation corridors. These resources should still be protected.

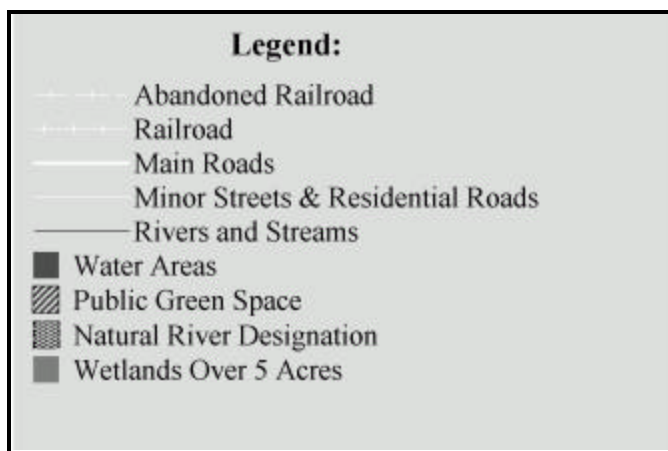
Secondary Conservation Areas

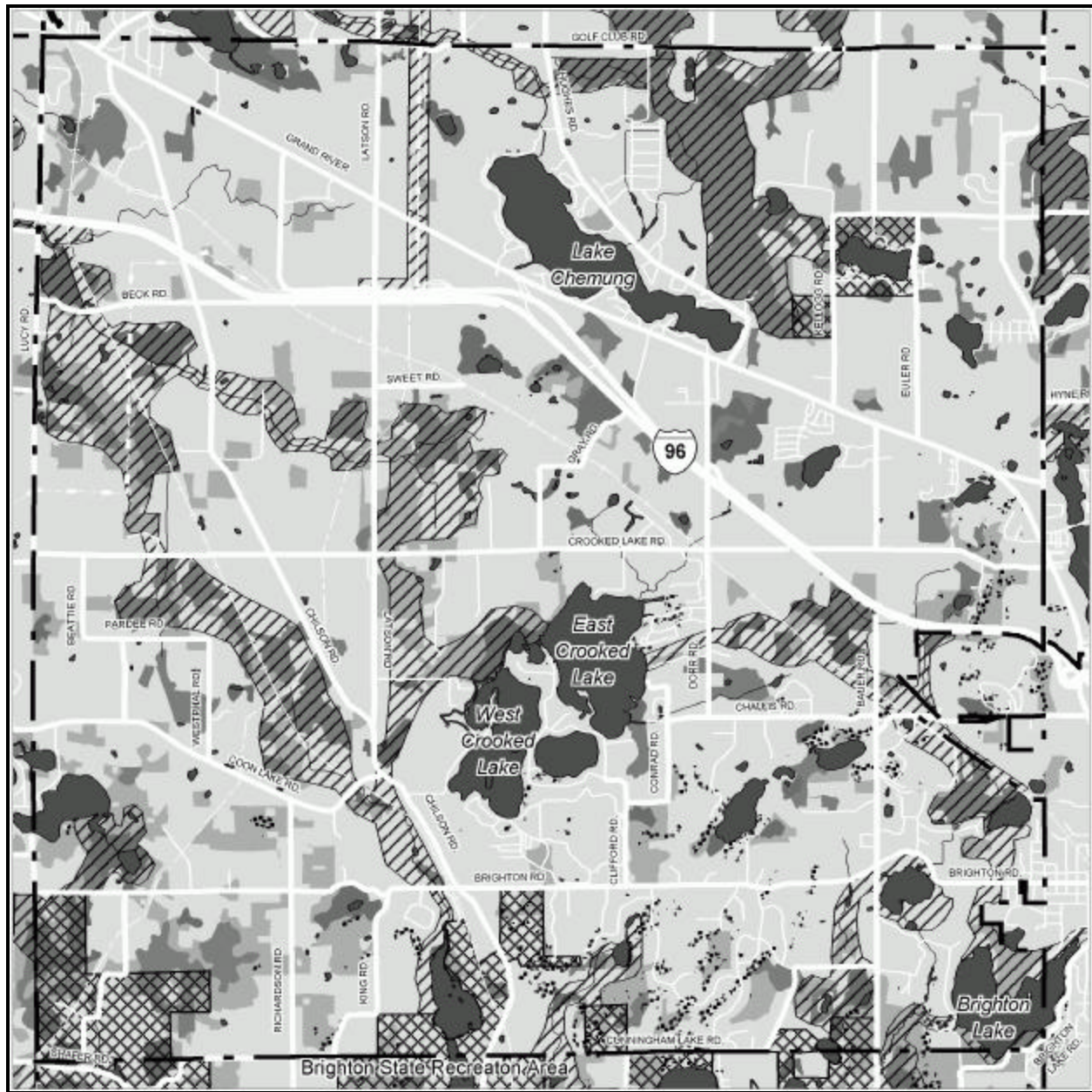
The key aspect of the Secondary Conservation Areas is their continuous nature. They include features that are desirable to preserve in some fashion but that are difficult to quantify in a zoning ordinance or where a blanket preservation ordinance is not realistic. They also include resources that are not necessarily fragile or special when viewed independently, but provide key links between isolated primary conservation areas.

These resources should be protected by including the corridors in the community master plan and utilization of an open space ordinance, such as the model ordinance included in *Open Space Planning*, published by Livingston County Planning. The ordinance should specifically reference the conservation corridors as priority open space.








Existing Natural Feature Protections

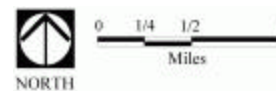


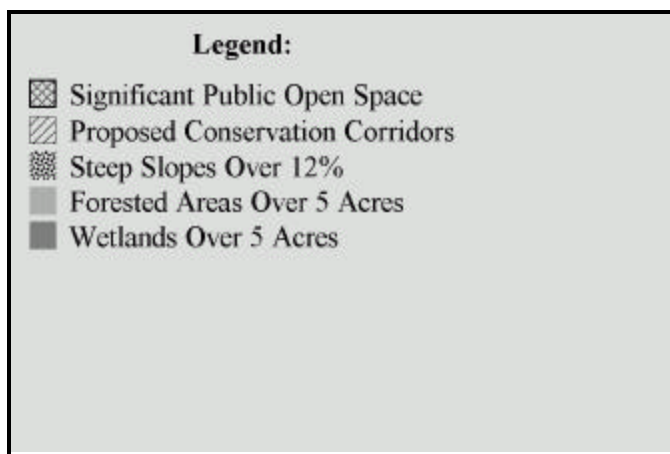


Legend:

-  Significant Public Open Space
-  Proposed Conservation Corridors
-  Steep Slopes Over 12%
-  Forested Areas Over 5 Acres
-  Wetlands Over 5 Acres

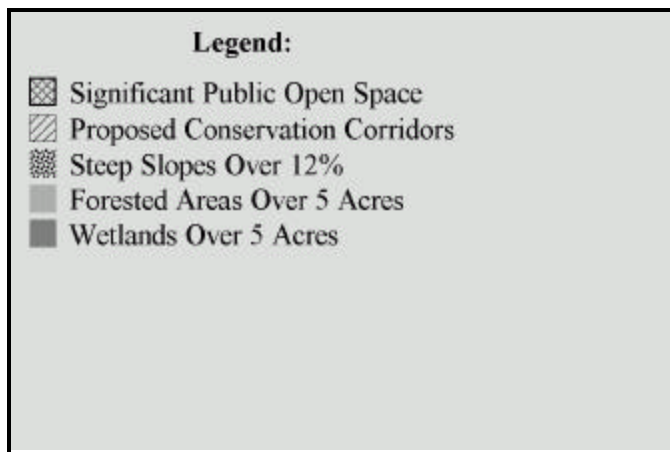
Genoa Township Conservation Corridors



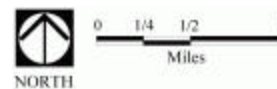


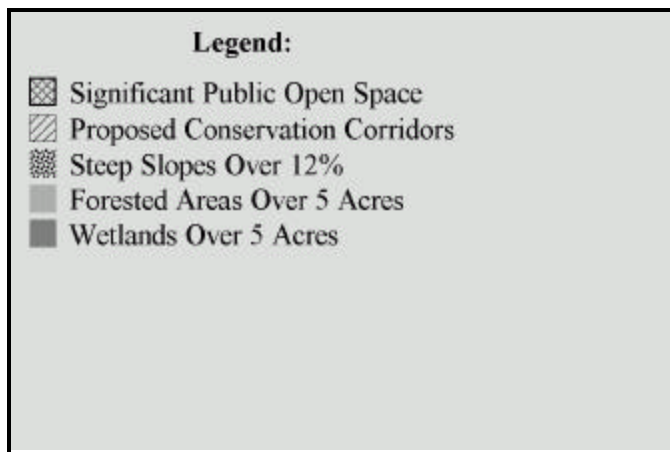
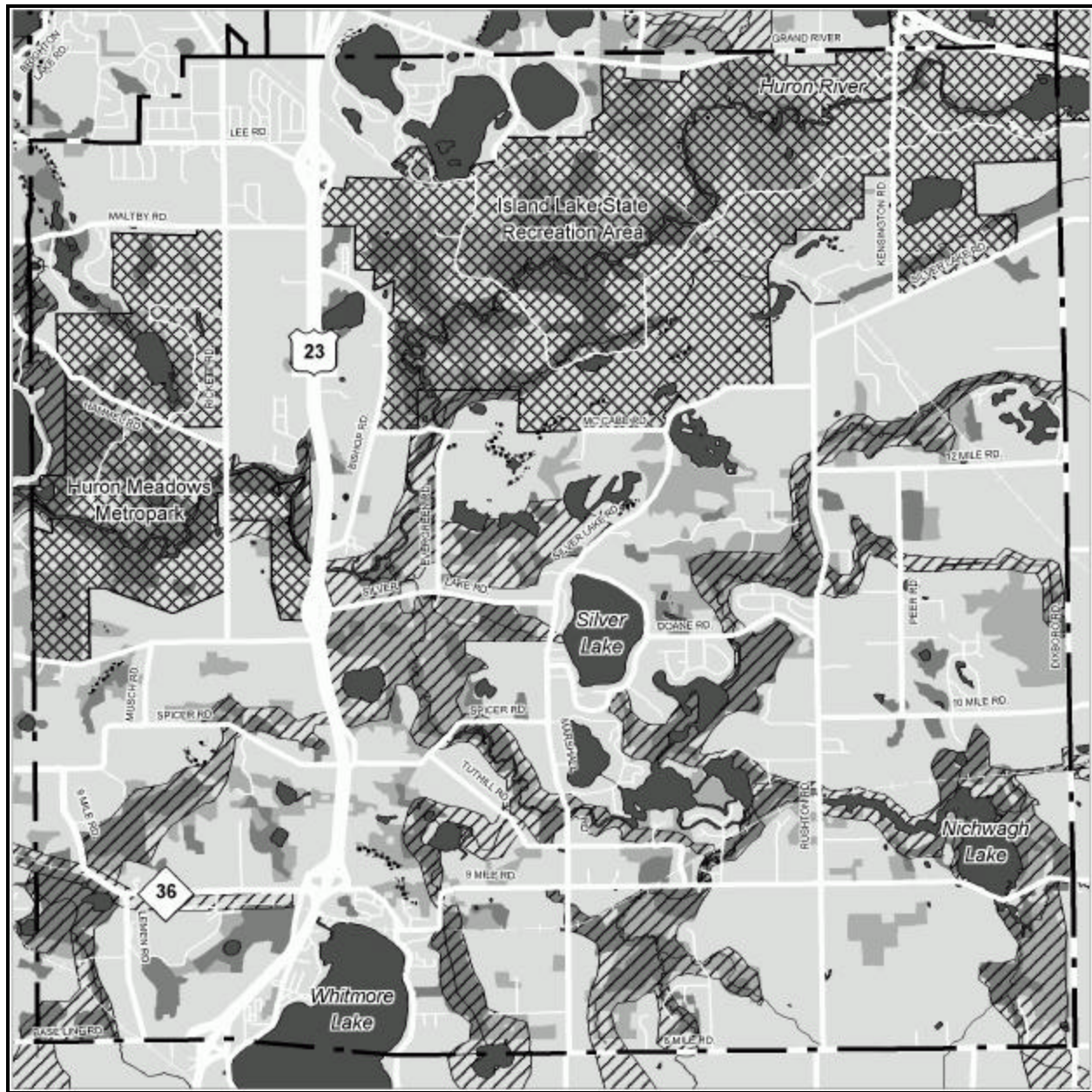
Brighton Township Conservation Corridors



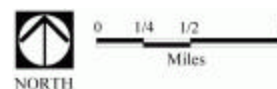


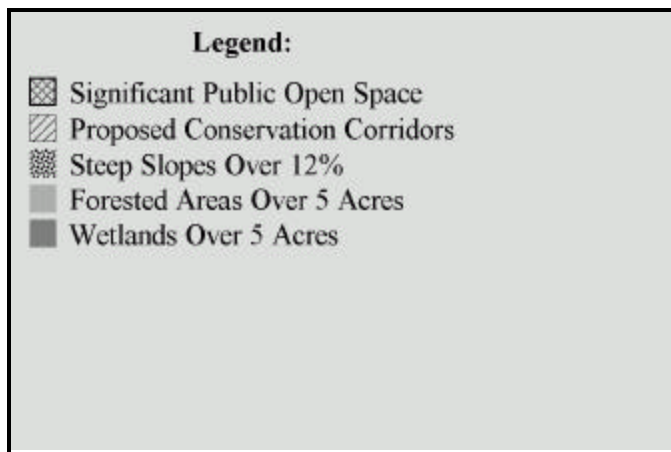
Hamburg Township Conservation Corridors



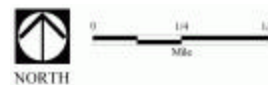


Green Oak Township Conservation Corridors





City of Brighton Conservation Corridors



Nonmotorized Links

The nonmotorized links are the human connections of the greenway system. As bicycles and pedestrians are allowed on all roads (except expressways) the entire public road network should be viewed as part of the nonmotorized links. To encourage bicycling by less experienced bicyclists and pedestrians who feel uncomfortable walking in the roadway, special accommodations in a variety of formats are proposed for the selected nonmotorized links. Some are as simple as directional signage; others are facilities specifically constructed for nonmotorized travel.

Two general types of nonmotorized links are proposed:

- **On-road Facilities** – accommodations for bicycles within the roadway, and
- **Off-road Facilities** – shared use trails and pathways separate from the roadway but may be in the road R.O.W.

Impact of Land Use on Nonmotorized Travel

The goal for both on-road and independent facilities is the same, safe and convenient connections to local attractions. In the public meetings, participants expressed concerns that because of the lack of nonmotorized facilities, they were forced to use automobiles for short distance trips they would rather accomplish on foot or bicycle. This problem is the result of independent subdivision construction where the local roads link to a main road without any bicycle or pedestrian accommodations.

The most effective solution is to require sidewalks in new subdivisions and to require that road networks of adjacent subdivisions link together. An interconnected local road and sidewalk network is one of the most significant aspects of a pedestrian and bicycle friendly community. Other significant factors include community master plans and zoning plans that encourage mixed-use development. The current practice of segregating uses pushes many daily trips outside of the radius that is conveniently walked or bicycled.

Phasing of Facilities

Southeast Livingston is experiencing significant changes with increasing numbers of roads being paved every year, but there remain many gravel roads in the area. The master plan outlines a number of “back road bike routes,” that provide key links to destinations and other nonmotorized facilities. The routes, on gravel surfaced roads, are not ideal for all bicycles, but suitable for mountain, or all-terrain, bicycles. Many of the routes are links between mountain bike trails on public lands, and therefore an appropriate surface for the primary user.

Some of the proposed “back road bike routes” will remain back roads for the foreseeable future. Others will undoubtedly be paved in the near future. The proposed approach identifies these key links now so that when a road is paved an appropriate bicycle facility is included in the reconstruction of that roadway.

Additional Resources

Only a cursory overview of each type of facility is noted in the following section. The following key resources should be consulted for additional information:

AASHTO Guide for the Development of Bicycle Facilities, 1999, Published by the American Association of State Highway and Transportation Engineers

Selecting Roadway Design Treatments to Accommodate Bicycles, U.S. Department of Transportation, Federal Highway Administration Document #FHWA-RD-92-073

On-Road Facilities

On-road facilities are primarily geared towards bicycle use. The degree of separation between automobiles and bicycles is based on the traffic volumes and motorized vehicle speeds. The following provides an overview of the facilities that are proposed in the master plan. As indicated before, the application of the proposed facilities are geared towards less experienced bicyclists.

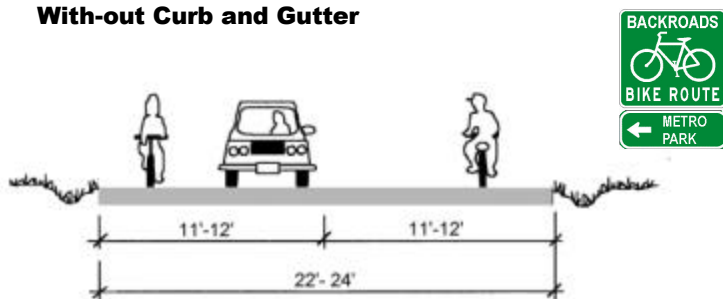
Bicycle Routes

The familiar Bike Route sign is not tied to any particular type of facility; rather, it is an aid to help bicyclists find their way through a confusing road network to a destination. As such, bicycle routes signs should be accompanied by destination information. Also, as the sign indicates that a route is preferable for a bicycle to use, therefore hazards to bicycling should be removed and a route should receive maintenance levels conducive to safe bicycling.



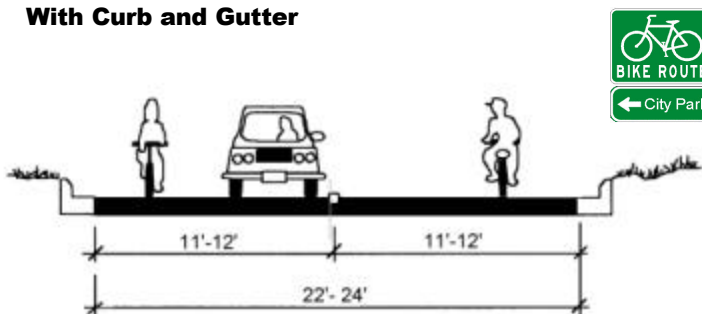
Signed Shared Roadways:

With-out Curb and Gutter



Signed shared roadways are typically low volume roads where bicycles and motor vehicles can share the roadway with minimal conflict. The sign helps delineate a route as an aid for bicycle navigation. Signed shared routes may also be used to highlight links between other more substantial bicycle facilities, such as bicycle lanes and shared use paths.

With Curb and Gutter



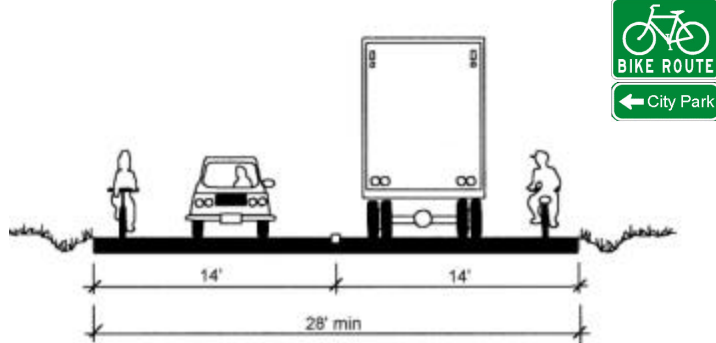
“Backroads Bike Routes” are proposed for rural gravel roads that provide key nonmotorized links. These routes may transition in the future to a different type of nonmotorized facility, if the roadway is improved.

“Share The Road” signs may be helpful along rural roads as a way to alert motorists to expect more bicycle traffic than typical.

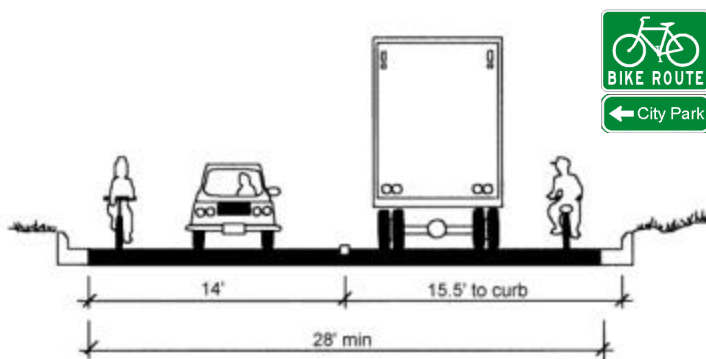


Increased Outside Lane Width:

With-out Curb and Gutter



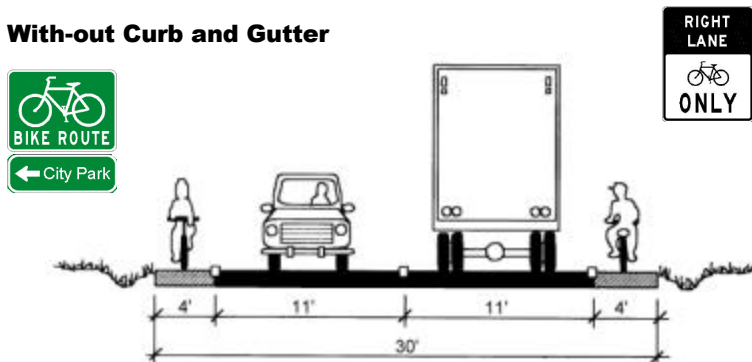
With Curb and Gutter



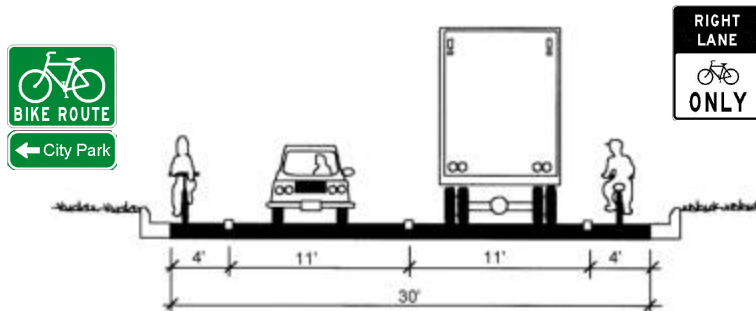
“Share The Road” signs may be helpful to alert motorists to expect more bicycle traffic than typical. Bike Route signs may be used to highlight the links.

Bicycle Lanes:

With-out Curb and Gutter



With Curb and Gutter



Bicycle Lanes are typically used on major roads with high traffic volumes. The minimum shoulder width of 4 feet should be increased with higher speeds and amounts of truck traffic.

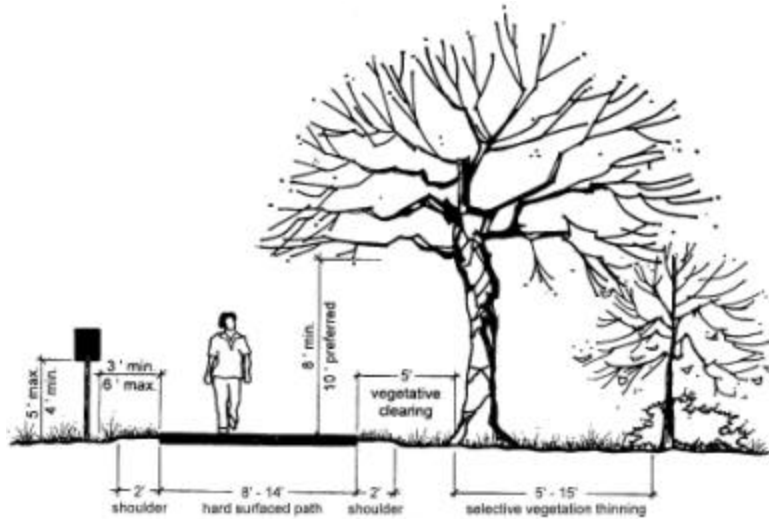
With Bicycle Lanes, striping, pavement markings and signage delineate a portion of the roadway specifically for bicycle use. This designation clarifies the use of the roadway for both motorists and bicyclists. The pavement markings, when they include directional arrows, help reinforce the fact that bicyclists should ride in the same direction as traffic.

When a bicycle lane approaches an intersection, the lane marking should become dashed to accommodate bicyclists repositioning themselves for turning movements (such as in a left turn lane). The use of a “Share the Road” sign at flared lane intersections helps indicate to motorists to expect merging bicycle traffic.

Off-Road Facilities

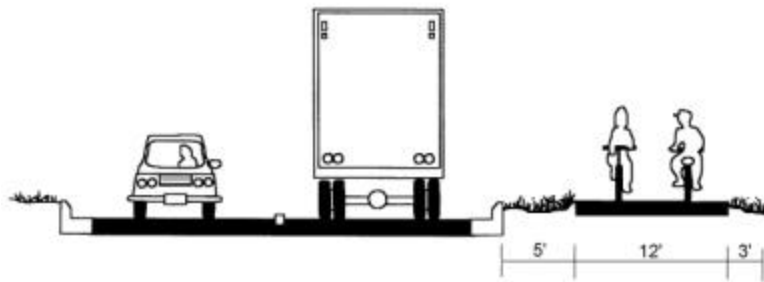
The off-road or independent facilities are generally shared use facilities. Multiple uses are accommodated by the trail width.

Shared Use Path



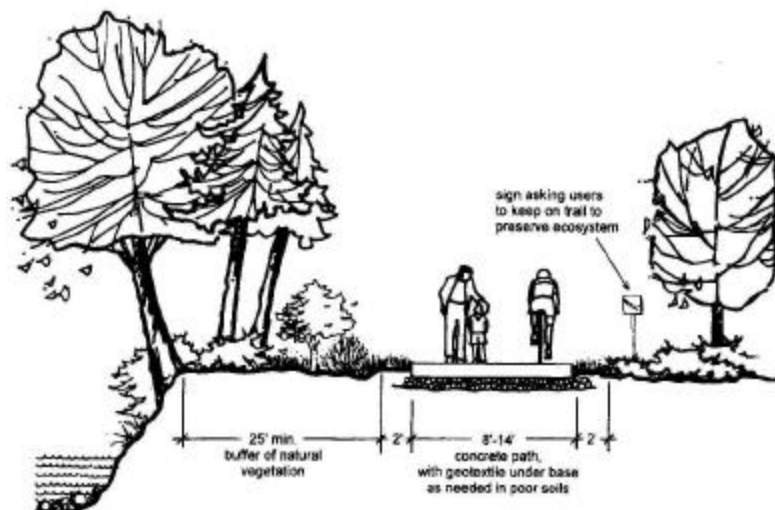
Shared use paths accommodate multiple user groups, including bicycles, pedestrians, in-line skaters, those in wheel chairs, etc. The multiple uses are accommodated by the pavement width, with 10 feet being the minimum recommended width. Shared use paths have the same types of planning and design considerations as roads: design speeds, horizontal alignment limitations, grade and cross slope limitations, and sight distance, clear zones, and drainage. The illustration on the left shows some basic considerations, and the following diagrams highlight issues specific to different types of shared use paths

Sidepath



Sidepaths are shared use paths generally located within the road right-of-way along roads with infrequent driveway and road intersections. There is a high probability for serious motorized vehicle/bicycle and motorized vehicle/pedestrian crashes at intersections and numerous other design and use issues, therefore these facilities should be located with care and special attentions should be paid to intersection design.

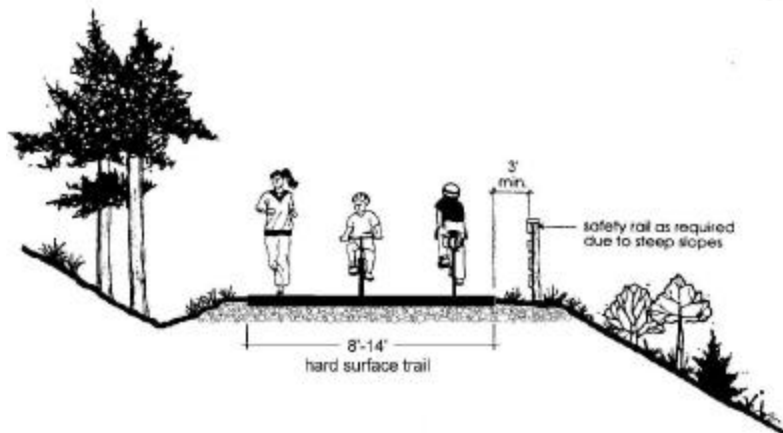
Trail by Water



Shared use paths adjacent to water bodies need to take into consideration water quality issues, stream bank erosion, wildlife habitat protections, and potentially poor soils.

A natural vegetation buffer should be kept between the path and the water body. Occasional controlled access overlooks should be provided to allow views to the water.

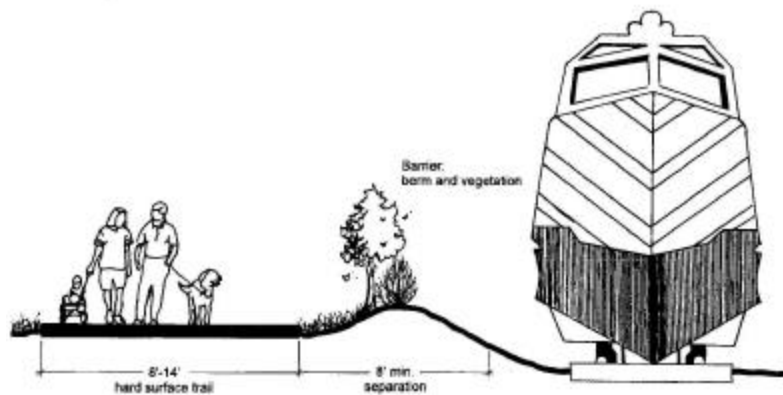
Rail-to-Trail



The horizontal and vertical alignment of railroads generally makes for a safe shared use path. In some cases, though, the grade is narrow at the top, limiting the path width or requiring regrading to create the necessary space. Steep side slopes can also be an issue requiring an occasional railing.

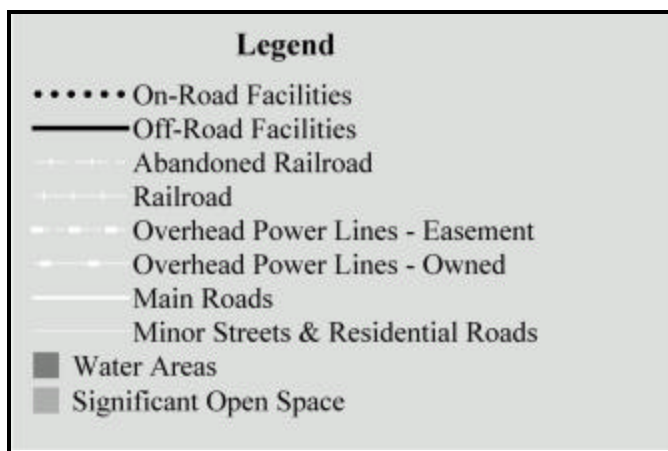
Road-trail intersections often require careful design, as the former rail alignment often crosses a road at odd angles and mid-block.

Rail-with-Trail



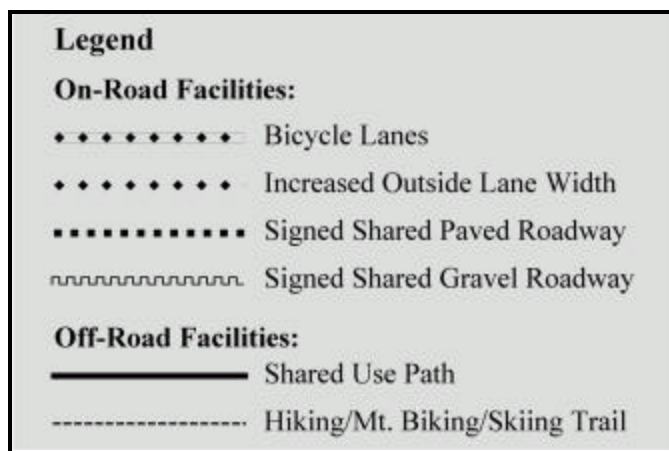
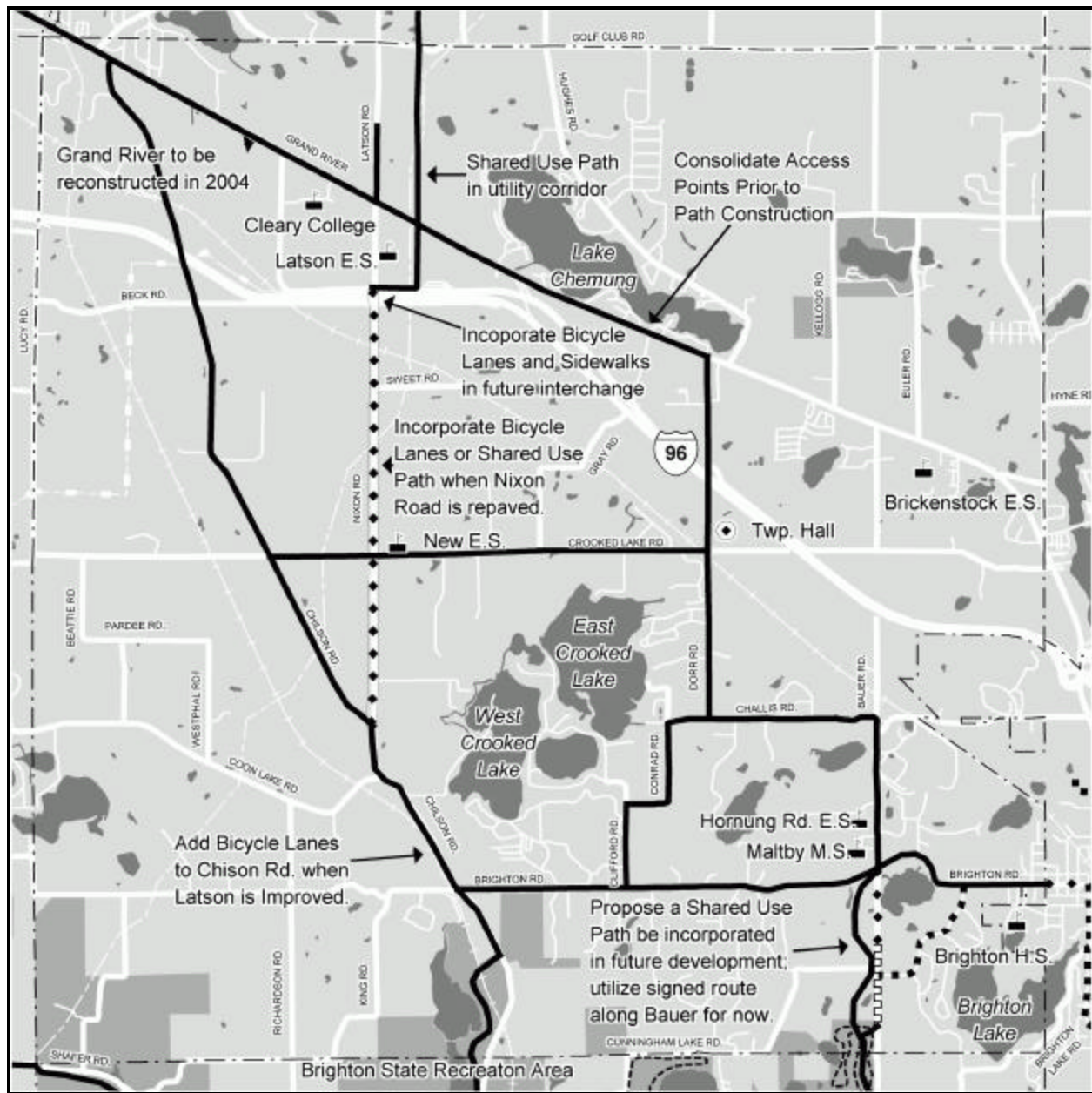
Rails-with-Trails place a shared use path within an active railroad corridor. This approach takes advantage of the single ownership of the corridor (negotiating with one land owner rather than many) and has proven itself as a safe option.

The corridors need careful attention, as any grading to accommodate the railroad is generally limited to the track area. A rail-with-trail may require substantial grading and bridge construction.

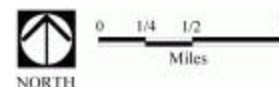


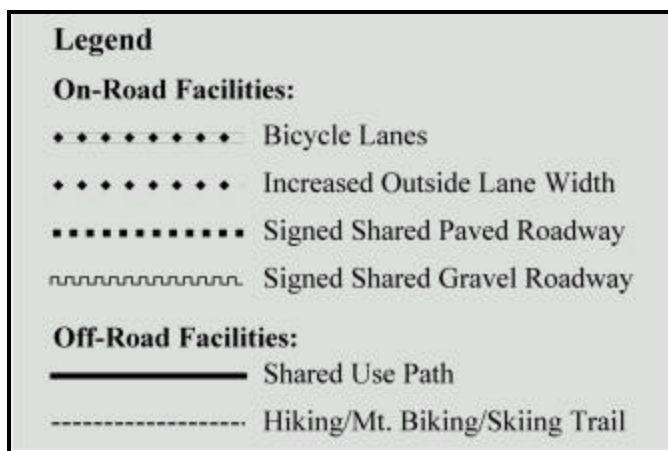
Nonmotorized Links





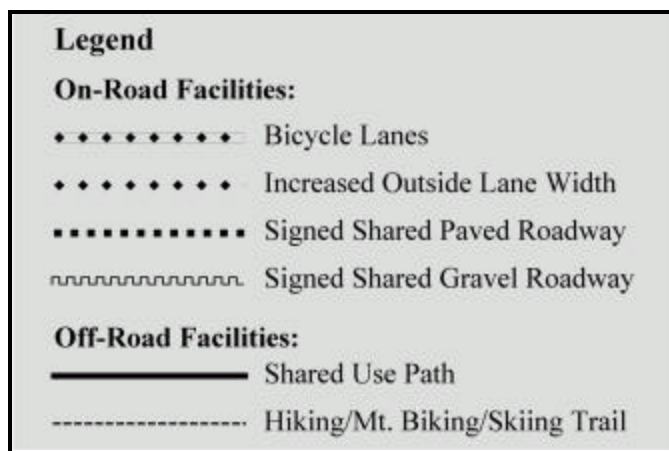
Genoa Township Nonmotorized Links





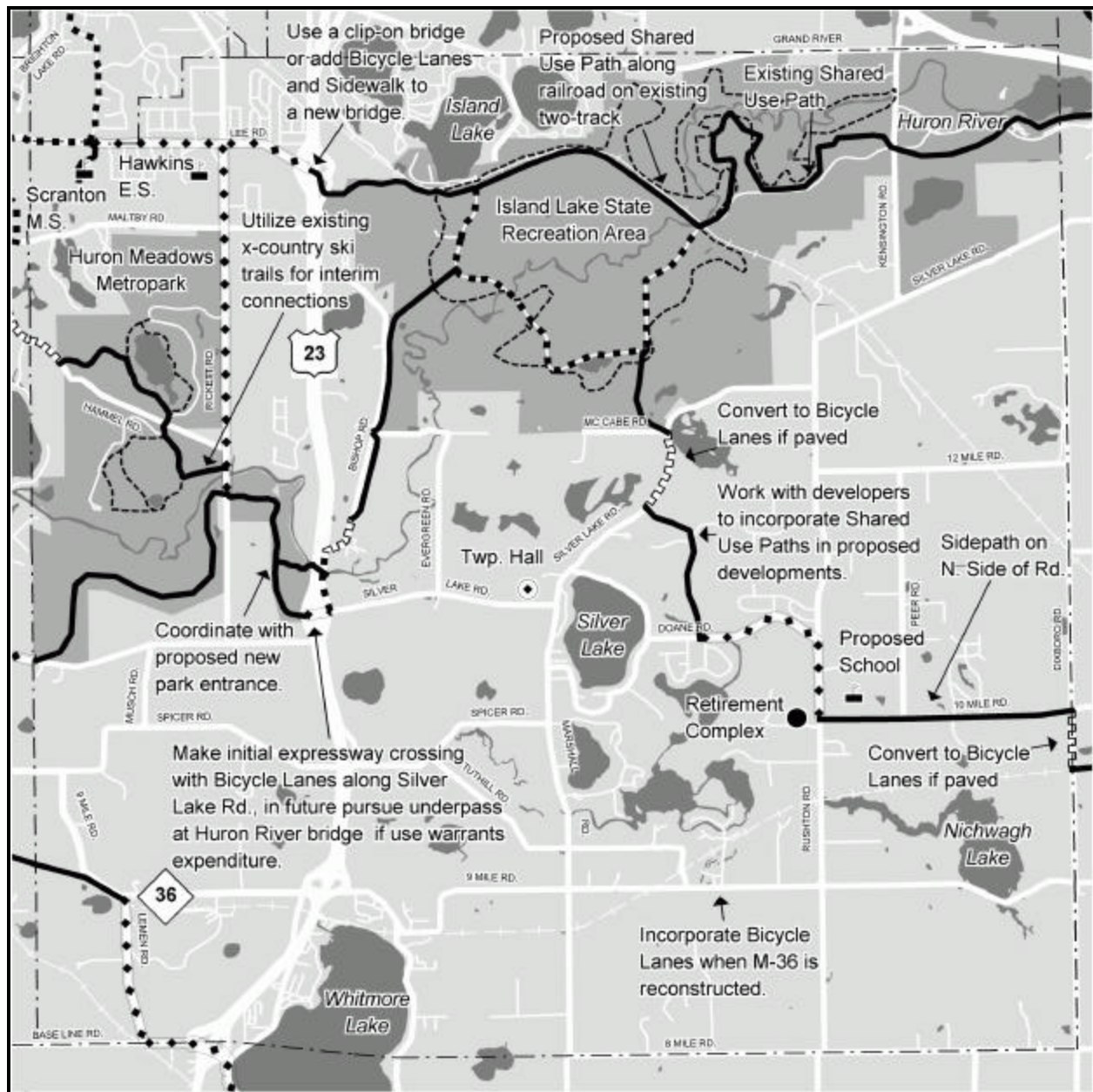
Brighton Township Nonmotorized Links



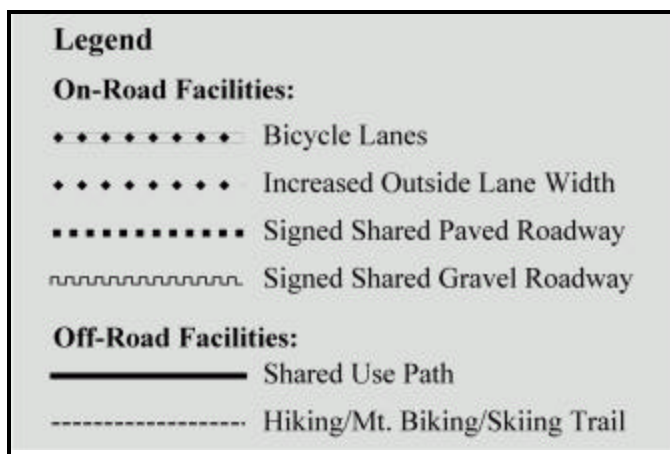
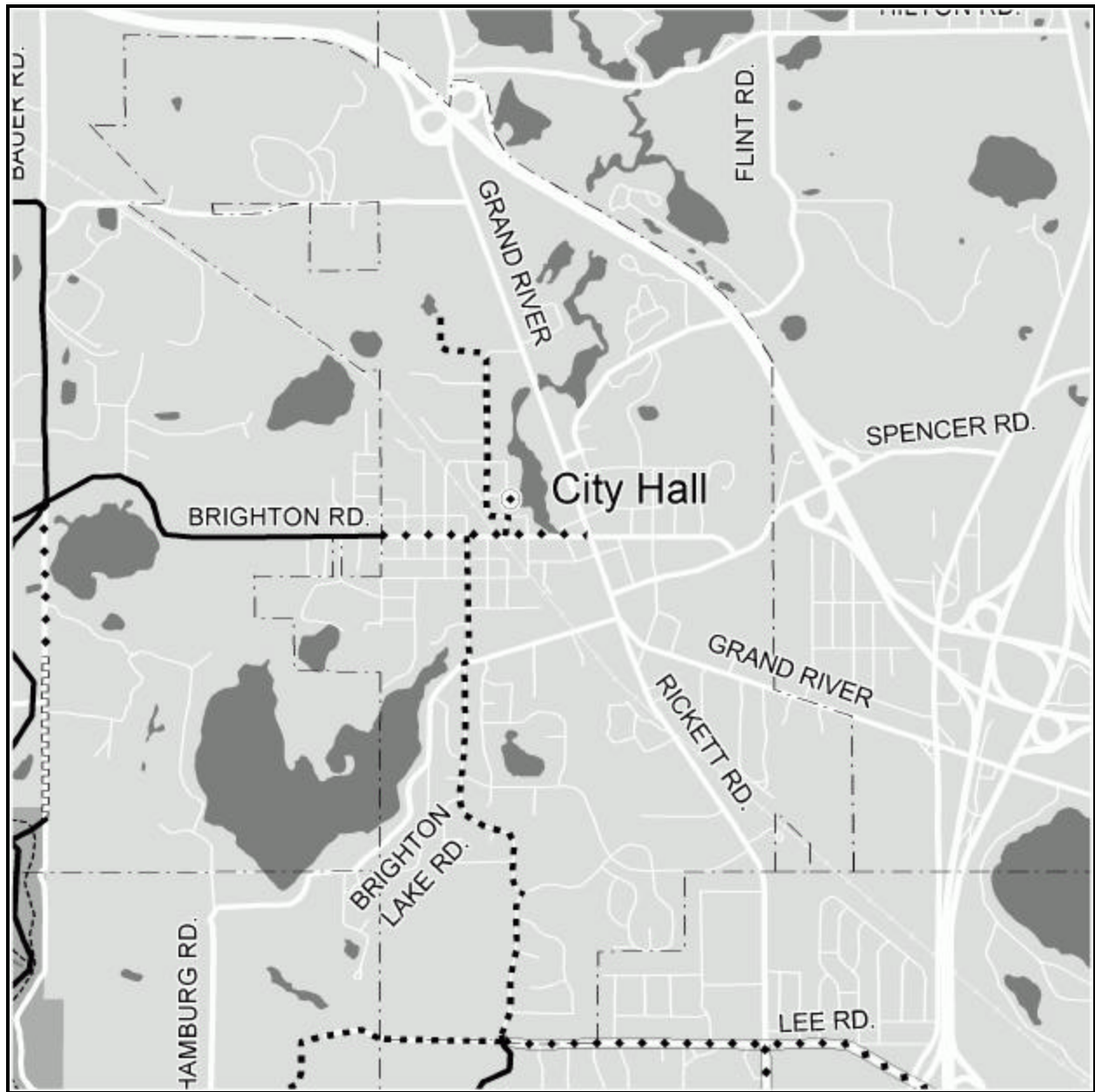


Hamburg Nonmotorized Links

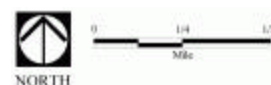


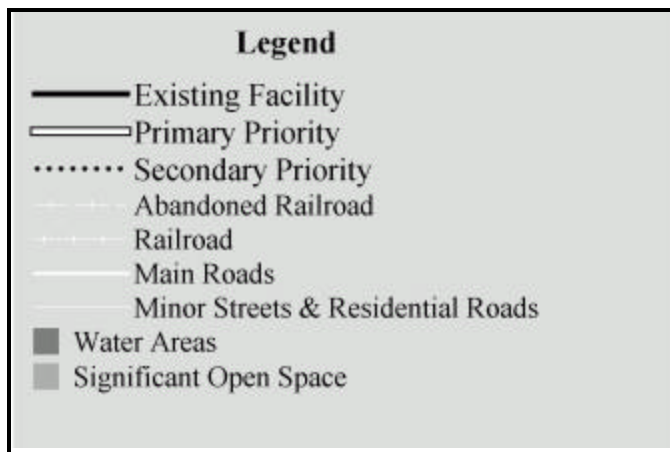
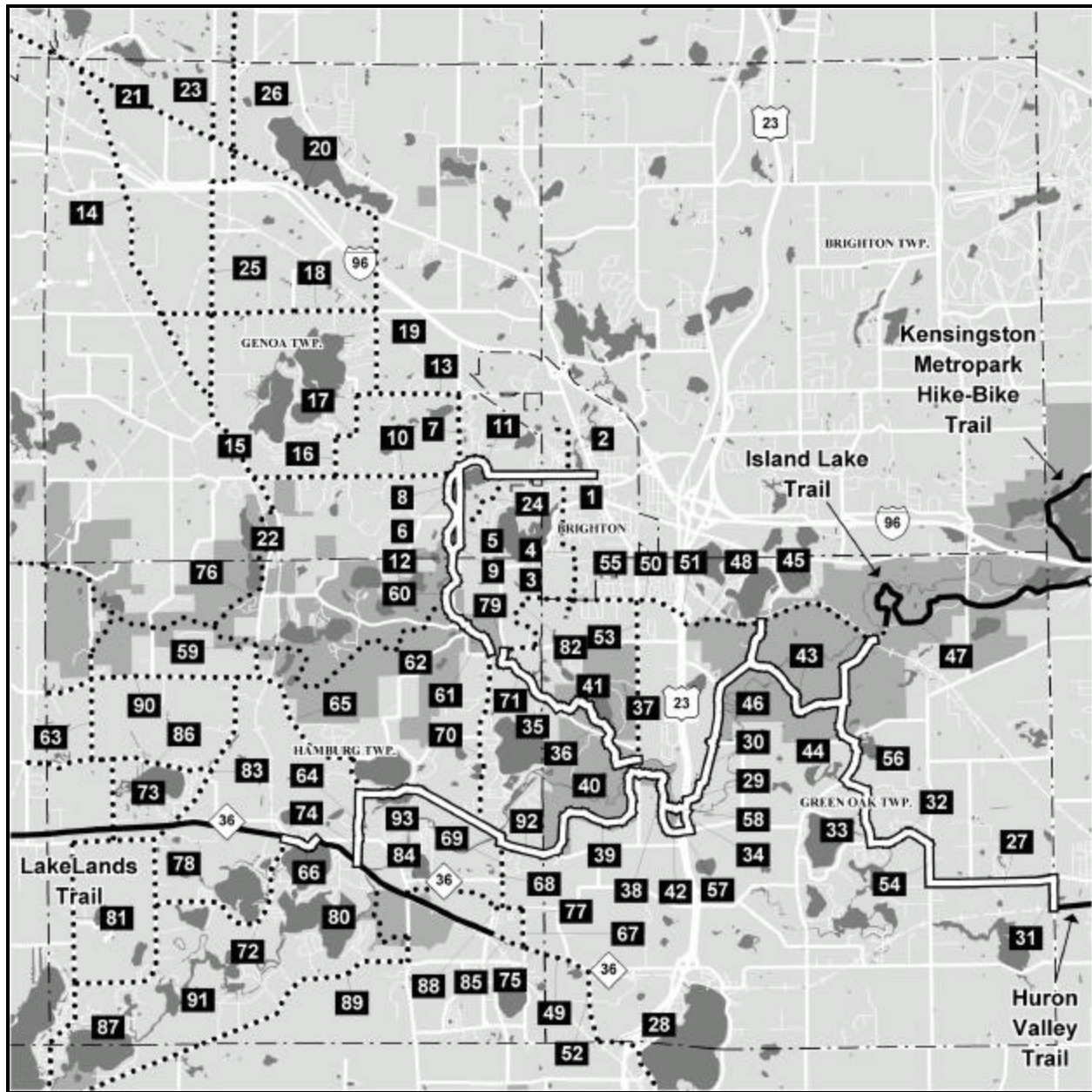


Green Oak Township Nonmotorized Links



City of Brighton Nonmotorized Links





Priority Corridors and Segment Key



Nonmotorized Links Summary and Cost Projections

ID	Name	Facility Type	Status	Surface	Width	Length	Unit Cost	Unit	Cost
City of Brighton									
1	Brighton Rd.	Increased Outside Lane Width	Partially Existing	Asphalt		3,317	Feet	\$0.25	\$829
2	First and Second St.	Signed Shared Paved Roadway	Partially Existing	Asphalt		4,425	Feet	\$0.25	\$1,106
3	Lee Rd.	Signed Shared Paved Roadway	Proposed	Asphalt		1,948	Feet	\$0.25	\$487
4	Third St., Fairway Tr., & Pepper	Signed Shared Paved Roadway	Partially Existing	Asphalt		8,767	Feet	\$0.25	\$2,192
									\$4,614
Genoa Township									
5	Bauer Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		2,598	Feet	\$0.25	\$650
6	Bauer Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	5,374	Feet	\$22.00	\$118,228
7	Bauer Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	2,148	Feet	\$22.00	\$47,256
8	Bauer Rd. Sidepath	Increased Outside Lane Width	Partially Existing	Asphalt		2,474	Feet	\$0.25	\$619
9	Bauer Road Link	Shared Use Path	Proposed	Asphalt	12	649	Feet	\$22.00	\$14,278
10	Brighton Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	13,480	Feet	\$22.00	\$296,560
11	Brighton Rd. Sidepath	Shared Use Path	Partially Existing	Asphalt	12	5,952	Feet	\$22.00	\$130,944
12	Brighton State Rec. Area	Shared Use Path	Proposed	Asphalt	12	1,166	Feet	\$22.00	\$25,652
13	Challis Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	6,751	Feet	\$22.00	\$148,522
14	Chilson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	23,400	Feet	\$22.00	\$514,800
15	Chilson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	8,603	Feet	\$22.00	\$189,266
16	Clifford Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	2,666	Feet	\$22.00	\$58,652
17	Conrad Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	3,802	Feet	\$22.00	\$83,644
18	Crooked Lake Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	13,900	Feet	\$22.00	\$305,800
19	Dorr Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	11,550	Feet	\$22.00	\$254,100
20	Grand River Sidepath	Shared Use Path	Proposed	Asphalt	12	10,100	Feet	\$22.00	\$222,200
21	Grand River Sidepath	Shared Use Path	Proposed	Asphalt	24	12,501	Feet	\$44.00	\$550,044
22	Latson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	4,060	Feet	\$22.00	\$89,320
23	N. Latson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	24	2,404	Feet	\$44.00	\$105,776
24	Neighborhood Connector	Signed Shared Paved Roadway	Proposed	Asphalt		4,659	Feet	\$0.25	\$1,165
25	Nixon Rd.	Bicycle Lanes	Proposed	Asphalt	4	13,986	Feet	\$16.75	\$234,266
26	Power Line	Shared Use Path	Proposed	Asphalt	12	9,255	Feet	\$22.00	\$203,610
									\$3,595,352
Green Oak Township									
27	10 Mile Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	8,007	Feet	\$22.00	\$176,154
28	Base Line Rd.	Bicycle Lanes	Proposed	Asphalt	4	1,370	Feet	\$16.75	\$22,948
29	Bishop Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		1,497	Feet	\$0.25	\$374
30	Bishop Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	2,887	Feet	\$22.00	\$63,514
31	Dixboro Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		1,879	Feet	\$0.25	\$470
32	Doane Rd.	Bicycle Lanes	Proposed	Asphalt	4	4,146	Feet	\$16.75	\$69,446
33	Doane Rd./Silver Lake Rd Connect	Shared Use Path	Proposed	Asphalt	12	5,148	Feet	\$22.00	\$113,256
34	Fieldcrest Rd.	Signed Shared Paved Roadway	Partially Existing	Asphalt		1,923	Feet	\$0.25	\$481
35	Hammel Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		1,258	Feet	\$0.25	\$315
36	Huron Meadows Metropark	Shared Use Path	Partially Existing	Asphalt	12	2,344	Feet	\$22.00	\$51,568
37	Huron Meadows Metropark	Shared Use Path	Proposed	Asphalt	12	553	Feet	\$22.00	\$12,166
38	Huron Meadows Metropark	Shared Use Path	Proposed	Asphalt	12	5,858	Feet	\$22.00	\$128,876
39	Huron Meadows Metropark	Shared Use Path	Proposed	Asphalt	12	11,037	Feet	\$22.00	\$242,814
40	Huron Meadows Metropark	Shared Use Path	Partially Existing	Asphalt	24	3,158	Feet	\$44.00	\$138,952
41	Huron Meadows Metropark	Shared Use Path	Partially Existing	Asphalt	12	2,432	Feet	\$22.00	\$53,504
42	Huron Meadows Metropark - Alt.	Shared Use Path	Proposed	Asphalt	12	1,242	Feet	\$22.00	\$27,324
43	Island Lake State Rec Area Road	Signed Shared Paved Roadway	Partially Existing	Asphalt		15,655	Feet	\$0.25	\$3,914
44	Island Lake State Rec. Area	Shared Use Path	Proposed	Asphalt	12	3,026	Feet	\$22.00	\$66,572
45	Island Lake State Rec. Area	Shared Use Path	Partially Existing	Asphalt	12	10,983	Feet	\$22.00	\$241,626
46	Island Lake State Rec. Area	Shared Use Path	Proposed	Asphalt	12	6,217	Feet	\$22.00	\$136,774
47	Island Lake Trail	Shared Use Path	Existing	Asphalt	12	17,896	Feet		
48	Island Lake West	Shared Use Path	Proposed	Asphalt	12	4,431	Feet	\$22.00	\$97,482
49	LakeLands Trail Extension	Shared Use Path	Proposed	Fines	12	3,081	Feet	\$22.00	\$67,782
50	Lee Rd.	Bicycle Lanes	Proposed	Asphalt	4	7,224	Feet	\$16.75	\$121,002
51	Lee Rd. Overpass	Overpass	Proposed	Metal	6	217	Feet	\$999.9	\$216,998
52	Lemen Rd.	Bicycle Lanes	Proposed	Asphalt	4	4,764	Feet	\$16.75	\$79,797
53	Rickett Rd.	Bicycle Lanes	Proposed	Asphalt	4	11,130	Feet	\$16.75	\$186,428
54	Rushton Rd.	Bicycle Lanes	Proposed	Asphalt	4	2,506	Feet	\$16.75	\$41,976
55	Scranton M.S. Path	Shared Use Path	Partially Existing	Asphalt	12	1,601	Feet	\$22.00	\$35,222
56	Silver Lake Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		2,618	Feet	\$0.25	\$655
57	Silver Lake Rd.	Bicycle Lanes	Proposed	Asphalt	4	898	Feet	\$16.75	\$15,042
58	US-23/Huron River Underpass	Underpass	Proposed	Concrete	12	530	Feet	\$500.0	\$265,000
									\$2,678,432

Nonmotorized Links Summary and Cost Projections

Continued

ID	Name	Facility Type	Status	Surface	Width	Length	Unit	Unit Cost	Cost
Hamburg Township									
59	Brighton State Rec. Area	Shared Use Path	Proposed	Asphalt	12	38,370	Feet	\$22.00	\$844,140
60	Brighton State Rec. Area	Shared Use Path	Proposed	Asphalt	12	5,328	Feet	\$22.00	\$117,216
61	Brighton State Rec. Area	Shared Use Path	Proposed	Asphalt	12	2,212	Feet	\$22.00	\$48,664
62	Brighton State Rec. Area - Bridge	Shared Use Path	Proposed	Wood	12	177	Feet	\$22.00	\$3,894
63	Chambers Rd.	Signed Shared Paved Roadway	Partially Existing	Asphalt		13,609	Feet	\$0.25	\$3,402
64	Chilson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	3,033	Feet	\$22.00	\$66,726
65	Chilson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	13,530	Feet	\$22.00	\$297,660
66	Girard Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		2,290	Feet	\$0.25	\$573
67	Hall Rd.	Bicycle Lanes	Proposed	Asphalt	4	2,523	Feet	\$16.75	\$42,260
68	Hamburg Rd.	Bicycle Lanes	Proposed	Asphalt	4	1,984	Feet	\$16.75	\$33,232
69	Hamburg Rd.	Bicycle Lanes	Proposed	Asphalt	4	2,305	Feet	\$16.75	\$38,609
70	Hamburg Rd. Sidepath	Shared Use Path	Planned	Asphalt	12	11,280	Feet	\$22.00	\$248,160
71	Hammel Rd.	Signed Shared Gravel Roadway	Partially Existing	Gravel		4,405	Feet	\$0.25	\$1,101
72	Kress Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	13,598	Feet	\$22.00	\$299,156
73	LakeLands Trail	Shared Use Path	Existing	Fines	10	28,352	Feet		
74	LakeLands Trail Connector	Shared Use Path	Proposed	Asphalt	12	1,476	Feet	\$22.00	\$32,472
75	LakeLands Trail Extension	Shared Use Path	Proposed	Fines	12	1,387	Feet	\$22.00	\$30,514
76	Latson Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	5,759	Feet	\$22.00	\$126,698
77	M-36	Bicycle Lanes	Proposed	Asphalt	4	1,301	Feet	\$16.75	\$21,792
78	M-36 Sidepath	Shared Use Path	Proposed	Asphalt	12	7,374	Feet	\$22.00	\$162,228
79	Maltby Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	3,153	Feet	\$22.00	\$69,366
80	Merrill Fields	Shared Use Path	Proposed	Asphalt	12	5,940	Feet	\$22.00	\$130,680
81	N. Mc Gregor Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	9,114	Feet	\$22.00	\$200,508
82	Neighborhood Links	Signed Shared Paved Roadway	Proposed	Asphalt		5,538	Feet	\$0.25	\$1,385
83	Pettysville Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	10,301	Feet	\$22.00	\$226,622
84	Proposed Main St.	Bicycle Lanes	Proposed	Asphalt	4	6,366	Feet	\$16.75	\$106,631
85	Proposed New Development	Bicycle Lanes	Proposed	Asphalt	4	2,362	Feet	\$16.75	\$39,564
86	Rush Lake Rd Sidepath	Shared Use Path	Proposed	Asphalt	12	11,091	Feet	\$22.00	\$244,002
87	S. McGregor Rd.	Bicycle Lanes	Proposed	Asphalt	4	4,515	Feet	\$16.75	\$75,626
88	Spicer Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	522	Feet	\$22.00	\$11,484
89	Strawberry Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	17,012	Feet	\$22.00	\$374,264
90	Swarthout Rd Sidepath	Shared Use Path	Proposed	Asphalt	12	13,854	Feet	\$22.00	\$304,788
91	Whitewood/Shehan Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	13,977	Feet	\$22.00	\$307,494
92	Winans Lake Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	3,015	Feet	\$22.00	\$66,330
93	Winans Lake Rd. Sidepath	Shared Use Path	Proposed	Asphalt	12	10,308	Feet	\$22.00	\$226,776
									\$4,804,017

Grand Total: \$11,082,415

Appendix 1: Goals & Approach

Coordination

Actively involve and unify communities, businesses, groups, and individuals in the decision making, regional coordination, and local implementation of the Southeast Livingston Greenways Project.

Communicate and strengthen area identity and vision for linking historic, natural, and economic resources and for promoting community pride.

Create a steering committee to facilitate the design process and organize a network of local projects.

Encourage and support local projects by developing and sharing the resources and technical assistance needed to get the job done.

Coordinate the greenways plan with local comprehensive plans and recreation plans.

Coordinate the Southeast Livingston Greenways Project with the regional greenways planning efforts.

Conservation

Provide plant and animal habitat, migration corridors, buffers for watercourses, flood plain protection, flood control, and protection of fragile ecosystems.

Encourage vegetative buffers around local lakes, groundwater recharge areas, the Huron River and its tributaries.

As an emergency management tool, promote the preservation of steep slopes and floodplains for the purpose of hazard mitigation to help discourage growth in potentially hazardous areas.

Economy

Work closely with local chambers of commerce to promote the benefits to local economies and quality of life that are associated with the preservation of open spaces and the availability of outdoor recreation facilities.

Transportation

Provide safe alternatives for local transportation through a non-motorized trail network linking people to community resources.

Encourage proper trail surfaces and design to accommodate a variety of modes of non-motorized transportation.

Provide a greenway “backbone” for future connections of neighborhood trails and open spaces.

Community Character

Promote community recognition, appreciation, and protection of historic and natural resources.

Identify areas of historical significance through collaboration with Brighton and Green Oak Historical Societies.

Identify scenic view sheds, especially along primary transportation routes.

Recreation

Provide close-to-home non-motorized recreational opportunities throughout the area for jogging, cross-country skiing, horseback riding, bicycling, walking, boating, fishing, relaxing, and simply enjoying the outdoors.

Establish a trail system that connects existing recreation facilities in the area; Huron Meadows Metropark, Kensington Metropark, Island Lake Recreation Area, Brighton Recreation Area, and various City and Township Parks.

Plan a future connection for linking the east and west units of the existing LakeLand Trail (Hamburg to South Lyon).

Appendix 2: Planning Chronology

March 17, 1997 - Introductory Meeting

Location: Hamburg Township Hall

On St. Patrick's Day 1997, the "Planning of the Green(way)" meeting kicked off the greenway planning efforts in Southeast Livingston County. This first meeting was attended by the initial steering committee members (approximately 15 people) which included township and city officials and representatives from local and state departments and agencies. The following topics were discussed:

- Overview of Greenways Vision
- Benefits of Greenway Planning
- Proposed Greenway Planning Process
- Possible Roles of Partners: Steering Committee, Livingston County Department of Planning, Southeast Michigan Greenways, Local Governments, Road Commission, Metro Parks, MDNR, and the General Public. Also, suggestions were made for additional individuals who may want to serve on the Steering Committee.
- Local Commitment to Project - Discussions were held regarding the amount of local contribution that would be necessary to leverage additional funding (through ISTEA) for the project. It was decided that each municipality would contribute \$2,000 towards the Southeast Livingston Greenway Project and the Livingston County Planning Department would dedicate staff time to the project.

April 10, 1997 - Greenway Steering Committee

Location: Livingston County Road Commission

A follow-up meeting was held to announce that the Southeast Livingston Greenway Project had been officially selected as a demonstration project and that additional funding and technical support had been secured. Livingston County Planning Department prepared and distributed greenway information packets for each steering committee member. The following topics were discussed:

Greenway Planning Overview

- Roles and responsibilities of partners
- Definition of the planning process
- Time line

Organize Greenway Planning Workshops (public input process)

- Logistics: where, when, who
- Goal and issue identification
- Resource identification

Introducing Project to Press/Public

- Possible issues and opportunities - Press Kit
- Presentation of general information relating to greenways and planning process
- Answers to common questions regarding concerns with greenway systems

Create Identity for the local greenway system

- Discuss possibility of a name or logo for the project

May 14, 1997 - Planning Workshop

Location: Brighton City Hall

The initial planning workshop was well attended by the public and press. The steering committee, working with local residents and stakeholders, began to put the greenway vision onto paper. With base maps and aerial photos for reference, conceptual greenways were mapped to connect important cultural features and to protect sensitive natural areas. The following process was used:

Cultural and Natural Features Inventoried - Base Maps were provided for each municipality showing existing features. Additional cultural and natural features were added to the base maps, including historic sites, churches, schools, neighborhoods, and sensitive natural areas.

Conceptual Greenway Corridors Identified - A first attempt was made to explore possible greenway corridors that would help protect and connect the valuable community resources that had been identified.

June 11, 1997 - Planning Workshop II

Location: Brighton City Hall

After additional research, the steering committee met again to tackle the following issues:

Greenway Map Refinement - Analysis of the conceptual greenway network maps that were produced at the planning workshop to identify areas that may have been missed or that need additional study.

Functions of different greenway segments: recreation, conservation, transportation, etc.
Possible tools for protection
Opportunities and constraints

Tools for Greenway Implementation - Discussion of possible organizations that may be involved in the implementation of the greenway network and what methods they may use. The following representatives were asked to give an overview of possible roles for their respective agencies:

Local Governments: Leslie Meyer, Hamburg Township
Land Conservancies: Suzanne Dye-Rose, Livingston Land Conservancy
Transportation Planning: Rick Little, County Road Commission
Department of Natural Resources: Phil Wells, Trail Division
Parks and Recreation: Jim Krop, Huron-Clinton Metropolitan Authority

Organize Site Visits - A bus trip was organized to get a closer look at potential greenway corridors.

June 23, 1997 - Greenway Site Visits

Location: Leave from Brighton Township Hall

A field trip was conducted with 13 members of the greenway committee to take a closer look at some of the potential greenway areas and possible connections. Several areas were hiked and photographed. The field trip brought to light many opportunities and constraints.

July 10, 1997 - Planning Workshop III

Location: Livingston County Planning Department

As a follow up to the site visits, another planning workshop was conducted to incorporate new information and produce three alternative conceptual greenway systems. Also discussed was the concept of preserving greenway links through future private developments (or golf course developments - without the golf course).

September-October 1997 – Focus Group Meetings

A series of focus group meetings were arranged to gather additional input from various community stakeholders on specific topics. Following these meetings, revisions were made to the conceptual greenways plan.

September 15, 1997 - Focus Group I - Development/Real Estate

Location: Livingston County Planning Department

This meeting was well attended by local developers, design professionals, and realtors. Discussions focused on strategies for building a cooperative partnership between the private sector and municipalities as a means to help implement the greenway plan.

September 29, 1997 - Focus Group II - Recreation

Location: Livingston County Planning Department

This meeting was attended by representatives from MDNR, Huron-Clinton Metro-Parks, Southeast Livingston Recreation Authority, and recreation interest groups. The discussions focused on ways to incorporate the greenway plan into respective recreation plans and future park improvements. Also discussed was greenway design standards to accommodate a variety of recreational uses.

October 16, 1997 - Focus Group III - Environmental/Conservation

Location: Livingston County Planning Department

This meeting was attended by representatives from Huron River Watershed Council, Livingston Land Conservancy, SIERRA Club, and local environmental review boards. The discussion focused on identification of primary conservation corridors that should be protected for their associated benefits of water quality protection (ground and surface), wildlife habitat, and scenic viewsheds.

October 28, 1997 - Focus Group IV - Livingston County Road Commission

Location: Livingston County Road Commission

Discussions were focused on ways to incorporate the greenway plan into local transportation plans and road improvement projects.

January 22, 1998 - Workshop IV

Location: Green Oak Township Hall

After making revisions to the conceptual plan based on input from the focus group meetings, it was time to discuss changes with the full steering committee. The following topics were addressed:

- Approval of conceptual Greenways Plan.
- Explore strategies for presenting plan to public.
- Begin selection process for the greenways demonstration corridor.

Drafts of the Southeast Livingston Greenways Plan were distributed and made available for review at all township/city halls. It was decided that a presentation to the executive board of each municipality would be appropriate to confirm the direction of the greenway project.

March-May - Township/City Board Meetings

Location: Township/City Halls

Meetings were held at Genoa and Brighton Townships and the City of Brighton to present the greenway plan and seek additional input. Hamburg Township did not require a presentation since they were already moving ahead with the greenway project.

June 30, 1998 - Workshop V

Location: Livingston County Planning Department

The following topics were discussed:

- Results from meetings with township boards and city council
- Status of greenways in Hamburg Township
- Update of proposed greenway demonstration project
- Presentation of draft Greenway Action Plan
- Formation of subcommittee of community reps to help carry out the greenway plan

August 11, 1998 - Implementation Subcommittee Meeting

Location: Hamburg Township Hall

Discussion focused on strategies for incorporating the greenway plan into local planning and zoning efforts through the following:

Community Master Plans and Strategic Plans

Recreation Plans

Zoning Ordinances - overlay zoning, open space zoning, and P.U.D. regulations

Transportation Plans

Appendix 3: Steering Committee

The following people have participated on the Steering Committee and Focus Groups during the course of the project:

Mike Archinal – Assistant City Manager, City of Brighton
Marianna Bair – Brighton Area Historical Society
David Beschke – Equinox
Vernon Boyajian – Resident
Lisa Brush – Huron River Watershed Council
Aaron Burk – Livingston County Planning Department*
Carla Chapman – Clerk, Brighton Township
Dan Davenport – The Michigan Group
Larry Deck – Rails-to-Trails Conservancy*
Vipul Desai – Boss Engineering
Susanne Dye-Rose – Livingston Land Conservancy
Bill England – England Real Estate
Jim Fackert – Green Oak Township Environmental Council
Darrell Fecho – Manager, Brighton Township Hall
Evelyn Gallegos – Planning Commissioner, Brighton Township
Ron Gamble
Richard Gienapp – City Council, City of Brighton
Emily Gobright
Jerry Janiga
Jim Johnson
Dean June
Sue Kelly – Sierra Club
Bob Kennedy
Dennis Knapp – Michigan United Conservation Club
Paul Knopp, Zoning Administrator, Brighton Township
Jim Braus – Ore Lake Preservation Association
Jim Kropp – Huron-Clinton Metropolitan Authority
Carol Kull – Livingston County Home Builders
Jon LaBossiere – MDNR, Pinckney Recreation Area
Anita Lamour
Rick Little – Livingston County Road Commission
Jerry Macks – Green Oak Township Historical Society
Leslie Meyer – Zoning Administrator, Hamburg Township*
Dan Morris – Pinckney Pedalers
Steve Morgan – Boss Engineering
Betsy Neil – Genoa Township Resident
Ralph Neri – Hamburg Township Resident
Joseph Oberlee – Michigan United Conservation Clubs
Kris Olsen – Huron River Watershed Council
Jan Plas – Supervisor, Green Oak Township
Tom Rafferty – Prudential Preview
Dan Reinders – Mallard Equipment Sales, Inc.
Simon Ren, Hamburg Environmental Review Board
Sally Reader – President, American Title Company
Joyce Roges – Director, Brighton Chamber of Commerce
Brian Schorkey – Livingston County Planning
Polly Skolarus – Clerk, Genoa Township
Mike Slaton – Brighton Township

Bob Steeh – Executive Director, Southeast Livingston Recreation Authority
Joanne Stritmatter, MDNR Parks and Recreation, Brighton Recreation Area
Sara Thomas
Coy Vaughn – Assistant Director, Livingston County Planning*
Christopher Ward, Clerk, Brighton Township
William Wagoner – Director, Livingston County Planning
Richard Wallace
Chuck Weiss – MDNR, Parks and Recreation, Brighton Recreation Area
Richard Wolinski – Applied Science and Technology
Paul Yauk – Michigan Department of Natural Resources

* These people have changed position since their work on the Steering Committee.

Appendix 4: Additional Resources

Of Special Local Interest:

A Vision for Southeast Michigan Greenways, Prepared by Rails -to-Trails Conservancy. 1998. 84 pages. Available from the Michigan Field Office of the Rails -to-Trails Conservancy (517) 485-6022. Defines the greenway vision for the seven counties of Southeast Michigan and includes a wealth of information on greenways and resources.

Livingston County Greenway Initiative, Prepared by Livingston County Planning Department, 1995, 99 pages. One of a series of planning guidebooks that provide an excellent summary of greenway practice and potential applications in Livingston County

Open Space Planning, Prepared by Livingston County Planning Department, 1996, 221 pages. One of a series of guidebooks, this one includes techniques, design guidelines, case studies and an model ordinance for the protection of the environment, agriculture, and the rural landscape in Livingston County

Nonmotorized Facility Design:

AASHTO Guide for the Development of Bicycle Facilities, Published by the American Association of State Highway and Transportation Engineers 1999. Available from the same at (202) 624-5800. An excellent summary of the best practices in planning, design of on and off-road bicycle facilities.

Bicycle Facility Planning, By Suzan Anderson Pinsof & Terri Musser. 1995. 41 pages. Available from American Planning Association (312) 786-6344. An excellent resource book for local governments.

Improving Conditions for Bicycling and Walking: A Best Practices Report. Prepared for the Federal Highway Administration by Rails -to-Trails Conservancy and the Association of Pedestrian and Bicycle Professionals. 1998. 48 pages. Available from FHWA (202) 366-5007. Provides information on outstanding pedestrian and bicycle projects that have been recognized for increasing walking and bicycling and improving user safety in communities across the United States.

Selecting Roadway Design Treatments to Accommodate Bicycles, U.S. Department of Transportation, Federal Highway Administration Document #FHWA-RD-92-073. Available from FHWA (202) 366-5007.

Greenway Development:

Greenways for America. By Charles Little. 1990. 237 pages. Available through bookstores or from the Conservation Fund (703) 525-6300). Discusses the history of the greenways movement. Describes the benefits of greenways. Features a number of greenway projects across the country.

Greenways: A guide to Planning, Design, and Development. By Charles Flink and Robert Searns; edited by Loring Schwarz. 1993. 351 pages. Available from the Conservation Fund (703) 525-6300. Has a wealth of practical information. Covers topics such as planning, organizing, marketing, land acquisitions, trail design, development, maintenance, management, safety, and liability.

Greenways: The Beginning of an International Movement. Edited by Julius Gy. Fabos and Jack Ahern. 1996. 491 pages. Available by special order from the editors or from a library. Includes 26 papers on greenway history, theory, implementation and case studies. Originally published as a Special Issue of Landscape and Urban Planning Journal (Fall 1995).

Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors. Prepared by the National Park Service's Rivers, Trails, and Conservation Assistance Program. 1992. 140 pages. Available from the Conservation Fund (703) 525-6300. Discusses economic benefits such as increased property values, expenditures by trail users, tourism, business location decisions, and public cost reduction.

How Greenways Work: A Handbook on Ecology. By Jonathan Labaree. 1992. 48 pages. Prepared for the National Park Service (NPS) and the Atlantic Center for the Environment; available from the Conservation Fund (703) 525-6300. Outlines the ecological benefits of greenways, particularly in regard to wildlife corridors and protection of waterways. Describes how to design and manage greenways for maximum environmental benefit.

The Ecology of Greenways. Edited by Daniel Smith and Paul Hellmund. 1993. 238 pages. Available through bookstores. Provides detailed information about landscape ecology, wildlife issues, water resources, design, and management. (The less-technical book *How Greenways Work* draws upon the technical information in this book.)

Greenway Implementation in Metropolitan Regions: A Comparative Case Study of North American Examples. Donna L. Erickson and Anneke F. Louisse. 1997. 40 pages. Available from the NPS (330) 657-2378.

This report presents findings from research on strategies for implementing greenway systems. It compares greenway implementation in seven North American metropolitan regions.

Trails for the Twenty-First Century: Planning, Design, and Management Manual for Multi-Use Trails. Edited by Karen-Lee Ryan of Rails-to-Trails Conservancy (RTC). 1993. 213 pages. Available from RTC (202) 331-9696. Gives detailed information about how to build and manage trails along corridors such as abandoned railroads and canal towpaths.

Secrets of Successful Rail-Trails. Edited by Karen-Lee Ryan and Julie Winterich of Rails-to-Trails Conservancy. 1993. 178 pages. Available from RTC (202) 331-9696. Provides citizen advocates and government officials with information about how to organize, what to do, and how to work with public and private interests to acquire and build a rail-trail. Also gives technical information that trail advocates need.

Rail-Trails and Public Sentiment: A Study of Opposition to Rail-Trails and Strategies for Success. Prepared by the Rails-to-Trails Conservancy. 1998. 16 pages. Available from RTC (202) 331-9696. Conducted to document the extent of opposition to rail-trail projects, this report examines why some projects fail while others succeed. Also provides strategies for success.

Rail-Trails and Safe Communities: The Experience on 372 Trails. Prepared by the Rails-to-Trails Conservancy in cooperation with the National Park Service's Rivers, Trails, and Conservation Assistance Program. 1998. 28 pages. Available from RTC (202) 331-9696. Documents the extent of crime on rail-trails and reviews such crime in a broader perspective. Provides methods for addressing concerns and minimizing the potential for crime.

The Impacts of Rail-Trails: A Study of Users and Nearby Property Owners from Three Trails. Roger L. Moore, Alan R. Graffe, Richard J. Gitelson, and Elizabeth Porter. 1992. 100+ pages. Available from RTC (202) 331-9696. The Executive Summary is available at the following website: <http://www.cr.nps.gov/rtca/rtc/impact.htm> This study of trail users and neighboring property owners examined two rural trails (in Iowa and Florida) and one suburban trail (in California). The study had four objectives: (1) to explore social benefits and direct economic impact of the trails; (2) to examine the trails' effects on adjacent and nearby property owners; (3) to determine the types and extent of problems experienced by trail neighbors; and (4) to develop a profile of users. This was the first extensive study to examine both users and neighbors of the same trails.

Saving America's Countryside: A Guide to Rural Conservation. Samuel N. Stokes, A. Elizabeth Watson, Genevieve P. Keller, and Timothy J. Keller. 1989. 306 pages. Available at bookstores. A comprehensive guide to rural conservation at both the public and private levels. Include a list of federal and nonprofit assistance programs as well as an annotated bibliography and twenty-eight case studies.

Riverwork Book. Prepared by the National Park Service. 1988. 98 pages. Available from NPS (330) 657-2378. Describes a process for effective river conservation efforts. The process includes public involvement and the identification of resources, issues, goals, alternatives, and actions.

A Casebook in Managing Rivers for Multiple Uses. Prepared by the Association of State Wetland Managers, Association of State Floodplain Managers, and National Park Service. 1991. 79 pages. Available from NPS (330) 657-2378. Contains eight case studies, some of which discuss multi-use trail development as a component of river management and preservation.