

# **Analysis of Initiatives and Best Practices for Regional Green Infrastructure Visioning and Policy Setting**

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January 2003

***Prepared for***  
West Michigan Strategic Alliance  
Environmental Assets/Sustainable Environment Task Force  
Holland, Michigan  
*www.wm-alliance.org*

***Prepared by***  
Public Sector Consultants Inc.  
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# Introduction

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This report was prepared in the hope that it may be useful to western Michigan as that region launches a task force to address environmental assets and sustainable environment—the green infrastructure. However, it is anticipated that the report may be useful to other regions of the state as well.

In 2000, the West Michigan Strategic Alliance was launched by a diverse group of community leaders from businesses, institutions, and governmental units of the greater Grand Rapids, Muskegon, and Holland area to be a catalyst in encouraging cooperation and collaboration that will address quality of life in the region and respond to global economic competition.

One of the first actions after the preparation of the Alliance's first published report, *Common Framework*, was the decision to create an action-oriented Environmental Asset/Sustainable Environment Task Force.

The purpose of the Task Force is to develop a 25-year vision, including goals and strategies for the environment/green infrastructure with specific short-term priority actions. While the goals will be regional in scope, the activities must be locally implemented. The vision will include policy guidelines for green infrastructure that have broad community support and that help local decision makers achieve sustainable balance. The environmental/green infrastructure vision and report will then be used in the overall Alliance regional vision and coalition-building process.

In order to develop this 25-year green infrastructure vision, some vital pieces of information must be gathered. This report supplies the Task Force with the following required information:

- Analysis of regional green infrastructure initiatives within western Michigan and secondarily, statewide analysis
- Analysis of relevant green infrastructure best practices across the nation, with emphasis on the Midwest

Public Sector Consultants performed a literature scan on both topics and conducted a limited number of interviews in order to facilitate the information gathering. PSC began by interviewing key people around the state to ensure that initiatives and best practices were identified. Working from the resulting list, PSC gathered information about selected initiatives and practices. PSC added to this information through the independent literature scans.



# Green Infrastructure

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During the past decade, the concept of “green infrastructure” has begun to surface among planners and natural resource professionals. Mark Benedict and Edward McMahon of The Conservation Fund define green infrastructure as “our nation’s natural life support system—an interconnected network of waterways, wetlands, woodlands, wildlife habitats, and other natural areas; greenways, parks, and other conservation lands; working farms, ranches, and forests; and wilderness and other open spaces that support native species, maintain natural ecological processes, sustain air and water resources, and contribute to the health and quality of life for America’s communities and people.”<sup>1</sup> They argue that like gray infrastructure (road, water, sewer, etc.), green infrastructure needs to be planned for the long term. Green infrastructure differs from traditional conservation in that green infrastructure plans for conservation in relation to land development, growth management, and traditional, gray infrastructure.

Benedict and McMahon lay out seven principles that are essential for successful green infrastructure initiatives. These seven principles are a good summary of the major components of most successful and dynamic green infrastructure programs in the United States and can be found in the case studies reviewed.

1. *Green infrastructure should function as the framework for conservation and development.* The problem with traditional conservation is that it often results in isolated islands of protected lands that do not allow wildlife communities to flourish and migrate. By making green infrastructure the framework by which a community conserves land and wildlife, communities can identify their “islands of nature” and link them with other important ecological areas. This leads to an interconnected system of greenspaces that allow for sounder development and conservation policies.
2. *Design and plan green infrastructure before development.* Restoring natural areas touched by human development is far more expensive than preserving undeveloped land. Since green infrastructure provides an ecological framework for conserving lands, it is essential that communities protect sensitive ecological areas before development occurs.
3. *Linkage is key.* Linkages are important in two ways for green infrastructure. First, for green infrastructure to be successful in a community there must be a network of important ecological areas throughout a region. Second, there must be linkages between all levels of government and nongovernmental organizations to ensure that a green infrastructure initiative has sufficient scope to be successful.

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<sup>1</sup> Benedict, Mark and Edward McMahon. 2002, Autumn. *Green Infrastructure: Smart Conservation for the 21<sup>st</sup> Century*, 6. Sprawl Watch Clearinghouse Monograph Series. Washington D.C.: The Conservation Fund. [Online, cited 12/24/02] Available: <http://www.sprawlwatch.org> (click on: “Green Infrastructure: Smart Conservation for the 21<sup>st</sup> Century Report.pdf”). All future references to Benedict and McMahon are from the same source.

4. *Green infrastructure functions across jurisdictions and at different scales.* A truly successful green infrastructure program is one that builds a network of greenspaces across urban, suburban, and rural jurisdictions and also incorporates parcels that are owned by private interests and local, state, and federal governments.
5. *Green infrastructure is grounded in sound science and land-use planning theories and practices.* Green infrastructure initiatives should incorporate expertise from professionals in fields that can contribute to successful planning and implementation of a program. These professionals come from such diverse fields as landscape architecture, geography, civil engineering, conservation biology, landscape ecology, and urban and regional planning.
6. *Green infrastructure is a critical public investment.* Green infrastructure needs to be funded in the same way that the nation's highways are funded: as primary budgetary items to spread the costs of construction and maintenance across a large pool of users and to ensure that all parts connect to achieve maximum functionality.
7. *Green infrastructure engages key partners and involves diverse stakeholders.* Successful green infrastructure initiatives are ones that involve diverse stakeholders and forge alliances between public and private organizations.

# Western Michigan Regional Green Infrastructure Initiatives Summary

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The initial desire of the Alliance was to compile information on other initiatives in western Michigan in the hope of finding notable examples of work related to green infrastructure. It was also decided to include a scan of relevant efforts in other regions across the state. PSC began this review by a series of interviews<sup>2</sup> with key stakeholders in western Michigan to identify initiatives already underway. When the scope of the review turned statewide, there were still only a handful of regional initiatives to learn from, and nothing as comprehensive as proposed for the Task Force.

In western Michigan, many smaller programs and projects are being implemented. This offers the Alliance an opportunity to work with groups that are already active in this arena and to use resources that are already available. Individual summaries of many western Michigan initiatives along with a few key endeavors in other parts of the state follow this general summary section. This should by no means be interpreted as an exhaustive list of green infrastructure initiatives, but rather as a sampling of information that is diverse in terms of both project type and location. In addition to these specific initiatives, most local units of government within the region also support parks and recreation and/or trails programs. These were not included.

The review of what is occurring both regionally and statewide reflects the variety of techniques used to plan for, establish, enhance, and protect green infrastructure. The techniques are broken into four, generally descriptive categories: planning, location incentives, pure conservation, and business-oriented efforts.<sup>3</sup>

Under planning fall such methods as setting growth policy (i.e., master and/or land use plans) and implementing it through zoning ordinances. Other strategies include setting growth boundaries in an area. Indeed, many non-planning initiatives are also based upon some sort of plan that includes policy, protocol, and priorities.

Many governments are turning to location incentives to help protect green infrastructure and steer development in appropriate directions. These include transfer of development rights (TDR), purchase of development rights (PDR), and utility service districts. TDR programs protect land by transferring density from a greenfield to an already built area. PDR programs place development restrictions on properties after their development rights are sold. Utility service districts provide boundaries for public services such as water and sewer that development must fit within to promote cost efficiency.

Pure conservation strategies to protect green infrastructure would include purchasing property and placing easements (restrictions of use) on property. Also included in this category of techniques are traditional funding mechanisms to support land conservation, such as millages or designated local sales tax, and other, less common methods of

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<sup>2</sup> Persons interviewed regarding specific projects are identified in the project description. A complete list of contact information for all projects is provided in the Appendix.

<sup>3</sup> For a more complete listing and description of land-use tools and techniques, the Planning and Zoning Center's *Planning and Zoning News* (May 1994, 18–19) provides a good overview.

supporting green infrastructure, such as through county drain commissions. New, innovative funding ideas such as a countywide tax increment financing plan will be increasingly important in today's economy. A countywide tax increment financing plan would capture a percentage of the growth in tax revenue (the tax increment) for protection of farmland, forestland, and environmental and open space. This revenue could also be used to leverage further matching funds from other resources, including state sources from oil and gas leases. It is imperative to consider funding mechanisms as a part of conservation strategies.

Finally, green business practices provide a unique green infrastructure technique that adds enhanced benefits to communities. These include everything from building developments or individual structures in a sustainable manner to using recycled paper in workplaces.

## **PLANNING TECHNIQUES**

### ***Community Foundation for Muskegon County***

Interview: Arnold Boezaart, Assistant to the President, (231) 722-4538

The Community Foundation for Muskegon County (CFMC) has been instrumental in a process to help protect watersheds in Muskegon County by building citizen interest and capacity. The CFMC has used similar processes in three Muskegon County watersheds: Muskegon River, White River, and Mona Lake. With help from other foundations (primarily within each watershed), each initiative began with a scientific inventory and assessment of resources in the watershed. Those resources are mapped using GIS (geographic information system) technology to help explain their importance to citizens. Through this process, citizens become actively engaged in restoration or enhancement of the watershed and its natural attributes. Typically an endowment is established so that the engaged citizens have resources to continue their important work. The Muskegon River watershed initiative is in its third year, the White River watershed project is in its second, and the Mona Lake watershed project is in its first.

### ***Macatawa Watershed Project***

Interview: Susan Higgins, Executive Director, Macatawa Area Coordinating Council, (616) 395-2688

The Macatawa Watershed Project is approximately halfway through its ten-year mission of reducing phosphorus content in the watershed by 70 per cent. Funded through local, state, and federal grants, the project includes water sampling efforts, biological inventories, demonstration projects, and an education component. The project also includes an endowment to ensure long-term protection of the resource.

Partnership has been a valuable asset to the project. Eighteen farmers have voluntarily instituted best management practices on their farms. A storm water committee comprised of all units of government has been formed to investigate cooperative solutions to meet pending storm water regulations.

The Community Outreach Plan laid the groundwork for several successful education efforts with a primary message that no one person is responsible for the watershed's degradation, but all citizens are responsible for its recovery and protection. Two children's books with local authors and illustrators were widely distributed. Many students have been able to learn about watershed issues using tabletop watershed models, purchased under the project. In addition, workshops have been held with homebuilders to discuss how development impacts the watershed.

Two demonstration projects are underway as a result of this project. The first project, wetland with flood control measures, has been built on Zeeland Public Schools property. An education campaign surrounding this wetland and its capabilities is underway, as well as a watershed class that has been formally accepted by the public school system in its curriculum. The other, a joint project between Hope College and the City of Holland, will begin construction in spring 2003 to install flood control devices (rain gardens) to mitigate parking lot runoff.

### ***The Metropolitan Development Blueprint Report*** **Grand Valley Metropolitan Council (GVMC)**

In 1990, the Grand Rapids Chamber of Commerce and several local government leaders formed the Grand Valley Metropolitan Council (GVMC), an alliance of governmental units in the Grand Rapids area that plan for the growth and development, improvement of the quality of life, and coordination of governmental services in their communities.

In 1994, the GVMC approved the *Metropolitan Development Blueprint Report*, a region-wide master plan that calls for a different strategy for preserving open space, using water and sewer services to direct development and establishing compact business centers and neighborhoods served by mass transit. The report took 18 months of collaborative work by citizens, planners, and consultants to develop a community-wide consensus for managing future economic growth, while preserving and enhancing the social, physical, and natural environment. Redirecting growth and development in compact centers of economic activity and livable communities framed by a network of greenways and open lands is the preferred future outlined in the report.

Steps are currently being taken to implement the recommendations of the report, including seeking area governmental unit support, developing funding for implementation, organizing a greenways network process, forming a land-use advisory committee, and appointing a Blueprint Commission to:

- Complete an inventory of natural assets
- Define a metropolitan network of open lands/green spaces
- Design a transit system based on concepts in the report
- Define current regional employment centers/locate probable future centers
- Review water/sewer utility services and the way they serve land use patterns
- Form a committee of public and private professionals to devise ways to encourage compact/livable communities

- Create/encourage sub-regional planning alliances to address specific issues<sup>4</sup>

### ***Muskegon Area-wide Plan***

#### **West Michigan Shoreline Regional Development Commission**

In 1996, a group of local governments, businesses, planning offices and consulting firms, law firms, and environmental and conservation organizations formed the Land Use Task Force. The Land Use Task Force was one of several committees established under the Muskegon Economic Growth Alliance Environmental Coordinating Council to work on environmental issues that affect the quality of life in Muskegon County.

The Land Use Task Force believes that a comprehensive discussion of land use issues by all stakeholders will result in improved land use decisions that will meet the goal of sustained economic development while protecting Muskegon County's natural resources and quality of life. It is this belief that led to the formation of the Muskegon Area-wide Plan (MAP) project.<sup>5</sup>

The MAP project is designed to educate, advance, promote, and facilitate the identification of a vision and goals for managing land use and future growth within Muskegon County. The project is facilitated by a 40-member steering committee representing local government, businesses, community organizations, and the West Michigan Shoreline Regional Development Commission. The MAP project seeks to build consensus, make strategic plans, promote intergovernmental cooperation, and provide information on a broad range of topics related to the regional quality of life. The end result will be a land use plan guiding growth in Muskegon County.

### ***New Designs for Growth***

#### **Traverse City Area Chamber of Commerce**

New Designs for Growth is a committee of the Traverse City Area Chamber of Commerce. New Designs for Growth has just completed a corridor study of M-72 near Traverse City in order to improve land use planning in four Grand Traverse Bay-area townships. While this isn't exactly a green infrastructure initiative, it is a unique approach to accomplishing some of the same planning objectives included in green infrastructure projects by focusing on a roadway corridor. The study's objectives are threefold: a land plan, public education, and planning models.

Each municipality along the corridor participated in crafting a long-range vision of land use and development patterns. Key focus areas included: farmland and open space preservation, transportation, scenic viewsheds, and watershed protection. The local units of government will be able to use the end product in their own planning endeavors.<sup>6</sup>

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<sup>4</sup> Grand Valley Metropolitan Council. [Online, cited 12/26/02] Available: <http://www.gvmc.org>.

<sup>5</sup> West Michigan Shoreline Regional Development Commission. 2002. Muskegon Area-wide Plan Project Fact Sheet (November/December). Muskegon, Mich.: West Michigan Shoreline Regional Development Commission.

<sup>6</sup> New Designs for Growth. 2002, August 28. *West Traverse M-72 Corridor Study*. Traverse City, Mich.: New Designs for Growth.

***Protecting Watershed and Traffic Sheds: Using Stream and Road Capacity to Better Manage Growth at the Rural/Urban Fringe, Huron River Watershed***  
**Huron River Watershed Council**

The Huron River Watershed Council and the Livingston and Washtenaw County Road Commissions are combining forces to create a model to better manage growth at the rural/urban fringe. Measures of impervious surface and traffic shed capacity will be used to develop defensible performance zoning standards that accommodate new growth without unacceptable impacts on headwaters or the rural road system. These performance-based standards can be incorporated into model, local, zoning ordinance language so that the carrying capacity of both gravel roads and water bodies are not exceeded as new development occurs. A guidebook and training program will be pilot tested, then shared in rural areas throughout the state. The project is just in its beginning stages.

***Regional Growth: Choices for Our Future***  
**Tri-County Regional Planning Commission**

The Tri-County Regional Planning Commission is working to develop a shared vision of regional growth in Clinton, Eaton, and Ingham Counties, which surround the Lansing metropolitan area.<sup>7</sup> The purpose of this endeavor is to:

- Develop a shared regional vision of land use and future development patterns
- Establish an action plan to address urban sprawl, which will guide public and private investment decisions for the next two decades

The mission of the project is to actively engage the citizens of the region to examine the implications of regional land use and other growth trends on the region's future and to formulate consensus on a shared vision of regional growth in order to assure improved future regional quality of life and economic competitiveness for area citizens and businesses. The project's goals are to

- collect and objectively evaluate regional land-use and other growth trend information (project managers assembled all local government master or land-use plans, layered, and analyzed them);
- actively engage local governments, citizens, and stakeholder groups in examining implications of these trends on the region's future (in addition to stakeholder meetings, technical team meetings, and steering committee meetings, there was a series of town hall meetings to reach out into the communities for citizen input);
- identify and evaluate alternatives to these trends, as appropriate (these were presented to the public for review);
- formulate consensus on a shared regional vision about a preferred alternative;

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<sup>7</sup> [Online, cited 12/24/02] Available: [http://www.tri-co.org/tricounty\\_website/index.htm](http://www.tri-co.org/tricounty_website/index.htm) (click on "Project Overview").

- develop tools, techniques, and action strategies to implement the shared vision and preferred alternative (initial review of the project reveals two or three areas of common ground—including a nonmotorized trail system); and
- establish a regional process for monitoring and evaluating success at implementing these strategies.

Some of the strategies will require implementation by all 78 individual local governments, while others may require implementation or action from government agencies, the private sector, utilities, school districts, transit agencies, or other community organizations. A review of similar efforts nationwide by TCRPC revealed two key determinants of success: consensus and identification of specific responsibilities (who is to do what, how, and by when).

### ***Rouge River National Wet Weather Demonstration Project*** **Wayne County Department of Environment**

Local communities in the Rouge River watershed banded together, at the urging of the court, to respond to and resolve storm water problems in the Rouge River. The effort extended to include a unique partnership of local agencies and communities, state agencies, nonprofit organizations, businesses, and citizens. While it is not a green infrastructure initiative per se, it does involve many of the same components. The Rouge Project is focused on managing wet-weather pollution to restore the water quality of the Rouge River. This cooperative watershed management effort began in 1992 and is supported by multi-year federal grants from the U.S. Environmental Protection Agency and local communities.

While the Rouge Project began the restoration of the Rouge River by focusing on a primary pollutant source—combined sewer overflows (CSOs)—it quickly expanded in recognition of the fact that CSO control alone would not provide sufficient water quality improvement because other nonpoint source pollutants (i.e., storm water runoff, illicit connections, failing septic systems, stream bank erosion) would continue to degrade the river.

The entire Rouge River watershed was broken into seven more manageable subwatersheds. Each subwatershed had to produce a subwatershed pollution prevention initiative (SWPPI) and each community in the program produced a public education program. The Rouge Project management strategy required comprehensive sampling, various water quality and water quantity modeling tools, data management, and GIS. According to the project's website, "The seven subwatershed plans have identified alternative steps needed to address remaining problems associated with storm water, combined and sanitary sewers overflows, failing septic systems, and nonpoint sources. Communities and agencies have already taken actions to address concerns from excessive runoff caused by new development and are planning projects to correct existing flow problems in already developed areas impacting habitat and riparian properties in the watershed. Specific measures have been identified that will help determine whether or not the actions underway and planned will achieve the short-term goals. It is fully

expected that achieving the long-term goals for full restoration of the Rouge River will require a series of iterative steps over several years.”<sup>8</sup>

### ***United Growth for Kent County***

Interview: Kendra Wills, Project Coordinator, (616) 458-6805

United Growth for Kent County is a collaborative project between Michigan State University, Michigan State University Extension, and Michigan State University’s Center for Urban Affairs to create a sustainable, citizen-based organization that promotes smart growth in Kent County.<sup>9</sup> The objective is to create by early 2005 an organization that unites the residents, stakeholders, and organizations of Kent County to advocate for positive land use. The project recognizes the importance of geographical diversity by supporting both a rural and an urban component. The rural component educates landowners and township officials on the costs of low-density development and the benefits of compact development design, while the urban component assists central city neighborhoods in identifying and mitigating the effects of sprawl and underutilized infrastructure.

### ***U.S. 31 Corridor Study***

Interview: Tom Bailey, Executive Director, Little Traverse Conservancy, (231) 347-0991

The U.S. 31 Corridor Study is in its third year of five-year programming. The goal of the study is to provide balance in how this particular corridor, which runs from Petoskey to Acme, is developing and to establish growth in open space and parks simultaneously with that of development. While the Little Traverse Conservancy works in Emmet and Charlevoix Counties, its partner, the Grand Traverse Land Conservancy, guides the project in Antrim and Grand Traverse Counties. More than \$2.6 million in land acquisition and conservation easements has come from state and local governments and charitable organizations to help maintain this scenic corridor that is so vital to the area. Five miles of frontage along the U.S. 31 corridor have been preserved for agriculture, forestry, and scenic viewsheds.

The process began with an inventory of scenic resources that may be valuable to the area, quickly followed by the development of a map of key target parcels. From there, partnering has been the main focus: seeking relationships with key stakeholders who can accomplish a common goal through independent and collective activities. The process is described as flexible and opportunistic, similar to most land transactions. Having an array of partners to call upon if an opportunity presents itself to make the goal achievable has been the foundation of this program.

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<sup>8</sup>[Online, last updated 11/20/01, cited 12/25/02] Available: <http://rougerivercom.readyhosting.com/geninfo/rougeproj.html>.

<sup>9</sup>Michigan State University Extension. [Online, cited 12/26/02] Available: [www.msue.msu.edu/unitedgrowth](http://www.msue.msu.edu/unitedgrowth).

## LOCATION INCENTIVE TECHNIQUES

### ***Ada Township Open Space Program***

Interview: Jim Ferro, Planning Director, (616) 676-9191, Ext. 31

The November 2002 elections brought a narrow (52-48) victory to land conservationists in Ada Township, located in Kent County. A ballot initiative was passed that will raise the township millage to 0.4 mills over the next 15 years for the purchase of parks and open space. The increased millage is expected to generate \$250,000 in its first year. Park land is designated and prioritized for purchase through the community's recreation plan. Open space is designated and prioritized through the Open Space Preservation Plan, adopted in 2000, by two means: specific sites and general purpose lands (floodplains, farmland). Township officials expect approximately one year of priority setting before the program is fully functional.

### ***Alpine Township Transfer of Development Rights (TDR) Study Project***

Interview: Frank Walsh, Planner, (616) 784-1262

In 2000, Alpine Township received a grant to study the feasibility of a TDR program in the township. A group of active citizens including farmers, environmentalists, academicians, business leaders, and others interested in land use issues was convened to form the Citizen Action Committee. Using GIS, the committee explored where TDR might occur within the township and after six months of review, recommended that it would be a viable option for the community. It was also learned that there is a tolerance for such a program within the township. In 2001, Alpine Township received a second grant to further test a TDR program for implementation. This study explored what the impacts in its urban areas might be and also tested ratios for transferring. It found that there are 420 sites available to participate in a TDR program in the township.

While much background work has been completed, the township has adopted no formal TDR policy. Once other priority issues are undertaken, it is hoped that the township can pick up where it left off with respect to a TDR program.

### ***Grand Rapids Urban Service Boundary***

According to the *Great Lakes Bulletin*, "The city of Grand Rapids, which serves about half the families and businesses in the metropolitan region, began in 1997 to negotiate new water and sewer contracts with the 14 communities that are its customers. Together they drew an actual line on the map and decided how far to extend water and sewer lines to provide enough service for growth over the next generation without encouraging sprawl. So far five communities have agreed to the 'urban service boundary,' the first of its kind in the Midwest and one of the few in the nation. The others are expected to sign on as their old contracts expire."<sup>10</sup>

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<sup>10</sup> Sometimes Up, Sometimes Down, But Grand Rapids Is Moving Forward. *Great Lakes Bulletin* 4 (2, Spring 1999), 15. [Online, cited 12/26/02] Available: <http://www.mlui.org/pubs/glb/glb99/glb-sp9915.html>.

### ***Kent County Purchase of Development Rights (PDR) Program***

Interview: Kendra Wills, Project Coordinator, (616) 458-6805

Late in 2002, Kent County approved the Purchase of Development Rights program, which allows all farmers in Kent County who wish to place a development-restrictive easement on their property to participate in the program. The ordinance establishes the Agriculture Preservation Board, a seven-member group that will set the application criteria, rank properties, and forward recommendations to the state for funding consideration through the statewide PDR program. Kent County will not have funds available for programming. The goal of the program is to conserve 25,000 acres of the remaining 183,000 acres of farmland in the county. The program will be formally reviewed every five years.

### ***Ottawa County Planning and Grants Department/Blendon Township Smart Growth Initiatives***

Interview: Paul Sachs, Land Use Planner, Ottawa County Planning and Grants Department, (616) 738-4852

Working with the Ottawa County Planning Commission, the Ottawa County Planning and Grants Department made presentations to every local unit of government in its jurisdiction to explain planning tools available to further smart growth and offer its assistance in their endeavors.

Blendon Township was one locality interested in smart growth initiatives and involved in a master planning process at the time of the Ottawa County Planning and Grants Department's presentation. As a result of their partnering, Blendon Township was able to implement several smart growth initiatives. Blendon Township's first step was to adopt a master plan. A key component of this was the inclusion and adoption of a smart growth zoning ordinance that included four innovative planning devices: a transfer of development rights (TDR) program, designated agricultural districts to protect farmland from development, transportation overlay districts, and open-space cluster-development density bonuses. By adopting this plan, Blendon Township became the first locality in the state to adopt a formal TDR program.

## **PURE CONSERVATION TECHNIQUES**

### ***Lake Michigan Federation***

Interview: Jaime Morton, Volunteer Coordinator, (616) 850-0745

The Lake Michigan Federation is currently doing work in several arenas related to green infrastructure. It recently completed a land use survey of Lake Michigan communities to assess the level of protection offered to Lake Michigan through community programs and policies. The Lake Michigan Federation worked with the City of Spring Lake to adopt a wetland ordinance designed to protect and enhance wetlands. The federation is also

instrumental in an education campaign to protect Lake Michigan sand dunes from development and mining, particularly in Ottawa County.

### ***Land Conservancy of West Michigan***

Interview: Julie Stoneman, Executive Director, (616) 451-9476

The Land Conservancy of West Michigan (LCWM) is the only nonprofit land trust dedicated solely to the permanent protection of important natural lands and open space in West Michigan. LCWM protects lands that (1) contribute to the distinctive character and quality of life in West Michigan, (2) are important for their value as habitat for native plants and animals, (3) act as centers for study and quiet recreation, and (4) are elements of scenic beauty and rural character. To date, the LCWM has permanently protected more than 1,400 acres of West Michigan's forests, fields, wetlands and dunes in a service area that includes all or parts of Allegan, Kent, Ottawa, Newaygo, Muskegon, Oceana and Lake Counties.

LCWM protects high-priority lands by several means. LCWM acquires natural land through donations or purchases for the purpose of creating nature preserves, which are open to the public. LCWM assists local governments with identifying important natural areas, preserving lands, and creating community parks. LCWM also works with landowners and developers in constructing protective easements, which are voluntary legal agreements between a landowner and a land conservancy or government agency that permanently limit development of the property in order to protect the conservation values of the land. The land remains in private ownership and can continue to be used by the landowner.

### ***Macatawa Greenway Partnership***

Interview: Ken Freestone, Executive Director, (616) 396-2353

The Partnership's Upper Macatawa Conservation Project is a dual-purpose initiative. It provides trail systems along the Macatawa River and protects land for enhanced water quality. The Partnership works with willing landowners to purchase property along the Macatawa or Black River to permanently protect the rivers and provide a trail system. The goal is to protect 600–700 acres. The Partnership recently cooperated with Ottawa County Parks and Recreation Department to purchase 325 acres along the Macatawa River. Once the land is purchased it is taken out of active use and best land management practices are applied to the land. In addition to its park and open space value, the area could provide important water quality benefits, help with storm water management, and provide much-needed wildlife habitat.<sup>11</sup>

In addition to this project, the Partnership also works to place easements on parcels for trail systems. It has been successful in placing 50 easements on 50 parcels to provide 8.5 miles of trailway along the Macatawa River from Holland, through Holland Township, to Zeeland.

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<sup>11</sup> [Online, cited 12/24/02] Available: <http://www.co.ottawa.mi.us/parks/projects.htm>.

### ***Meridian Township Greenways Plan***

Located just east of East Lansing, Meridian Township has had a Pathways Millage in place for 18 years. The millage, which provides \$250,000 annually for the construction of nonmotorized trails along major roadways, has installed 57 miles of trailway. Another millage, passed in 2001, will make 0.75 mills available for open space preservation. The township is currently constructing a Greenways Master Plan to help guide the purchase of these lands. This plan will identify optimal purchases in order to link to regional systems and community services (schools, libraries, parks, stores) and preserve agricultural land, water body buffers, open space, wildlife corridors, recreation trails, and greenways.<sup>12</sup>

### ***The Nature Conservancy: Toward a New Conservation Vision for the Great Lakes Region: A Second Iteration***

Interview: John Legge, Program Director, (616) 776-0230

In 2000, The Nature Conservancy (TNC) produced an updated document containing what it views as the critical areas for preserving biodiversity for the Great Lakes region.<sup>13</sup> TNC first identified what should be conserved, or what types of species and how many of them should be protected. TNC considered areas with special uses like migratory bird stopovers. After setting goals for biodiversity, TNC then convened scientists and natural resource managers to evaluate the goals and mapped locations to further refine targets. This initiative is expected to be a work in progress and will continually be updated. The report identifies 135 aquatic and terrestrial sites within Michigan that display significant biodiversity, four of which are located in western Michigan.

In addition, TNC has compiled a biodiversity inventory for one of Michigan's largest remaining intact tracts in the Lower Peninsula at Camp Owasippe—a 4,900-acre area known for being the oldest continuously operated Boy Scout camp in the nation. The value of the biodiversity of this site had previously not been known. Many threatened and endangered species were identified, making this site a prime example of an area worth conservation. The future of the site is not known at this time.<sup>14</sup>

### ***Ottawa County Parks and Recreation Commission***<sup>15</sup>

#### ***Grand River Greenway***

In 1995, the Ottawa County Parks and Recreation Commission invited landowners, area governmental units and the general public to join them in an ambitious project to study the feasibility of establishing a greenway along the Grand River. This meeting led to the formation of the Grand River Greenway Advisory Group, which is working with the Commission to create a greenway master plan for the Grand River. As a step toward that

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<sup>12</sup> Townsend, Gene. 2000. Greenways Pacesetters. *The Source* (December 2002-February 2003, 7). Lansing, Mich.: Mid-Michigan Environmental Action Council.

<sup>13</sup> The Nature Conservancy Great Lakes Program. 2000. *Toward a New Conservation Vision for the Great Lakes Region: A Second Iteration (Revised September 2000)*. Chicago, IL: The Nature Conservancy Great Lakes Program [Online, cited 12/24/02] Available: <http://www.conserveonline.org/2001/06/b/Summdoc>.

<sup>14</sup> Nature Conservancy press release, November 27, 2002. [Online, cited 12/24/02] Available: <http://nature.org/wherewework/northamerica/states/michigan/press/press874.html>.

<sup>15</sup> [Online, cited 12/24/02] Available: <http://www.co.ottawa.mi.us/parks/projects.htm>.

goal, the Parks Commission completed *A Natural and Cultural Features Inventory of the Grand River Greenway Corridor* in Ottawa County in 1998. This inventory provides an in-depth review and assessment of the river corridor's existing natural lands, historic sites, and other significant resources. Acquisition of key lands along the Grand River is underway, with 562 acres already acquired.

### *Pigeon River Greenway*

Long-range planning is underway for a greenway along the Pigeon River corridor from Lake Michigan to areas east of 120th Avenue. In 2000, the Ottawa County Parks and Recreation Commission approved the Pigeon River Greenway Master Plan. The plan specifically focused on properties west of U.S. 31 that were acquired by Ottawa County since 1997, including eight properties comprising 239 acres. These lands, which are home to 554 species of vascular plants, stretch 1.5 miles along the north side and about one mile on the south side of the Pigeon River.

Plans call for parking, picnic sites, a pedestrian bridge over the Pigeon River, extensive hiking and cross-country ski trails, canoe/kayak launch, a nature center building, and the renovation of a 100-year-old historic building that will be available to the public for meetings, reunions, and other functions as well as for parks programs. Interpretive walks, signs, and displays will explain the natural and cultural history of the area. The target date for opening this new park is summer of 2003.

Several other initiatives are underway to permanently preserve land, not only for park purposes. The *2000 Ottawa County Parks, Recreation and Open Space Plan* also identifies the Parks Commission's priorities and projects for the next five to ten years and outlines the direction for Ottawa County Parks in the areas of park expansion, improvements, new park development, establishment of greenways, and other key initiatives. A complete inventory of all local and state park and recreation facilities is included.

### ***Southeast Michigan GreenWays Initiative***

Interview: Tom Woiwode, Executive Director, Southeast Michigan GreenWays Initiative of the Community Foundation for Southeast Michigan, (313) 961-6675

The goal of the GreenWays Initiative is to change the way that people view the landscape in the seven counties typically described as southeastern Michigan: Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties. The foundation for the initiative is a 1998 report, *Vision for Southeast Michigan Greenways*, which describes and maps a system of green infrastructure for the area. The goal of the initiative is to generate \$25 million in five years for the implementation of this green infrastructure system. The initiative already has raised \$21 million toward its target. It is important to note that everyone involved in the initiative understands that these funds won't change the physical landscape appreciably, but will leverage other state and federal funds toward the same goal.

The process began with the compilation of data for the 1998 vision report and contacting people to gather information. This activity spurred interest in a region-wide vision for green infrastructure both from stakeholders and from potential funding sources. This

activity was also important because it produced a region-wide map of the vision, giving it a tangible shape accessible to all. Two groups were formed to discuss the outcome of the document and map: a stakeholder group and an advisory group made up primarily of funders. After a series of meetings, the stakeholder group agreed upon five actions necessary to make this dream a reality:

- Securing funding
- Creating a forum for jurisdictional outreach
- Communicating that this effort is more than just parks, that it encompasses the region's quality of life
- Staffing the effort
- Incorporating review by an independent party who could view regional efforts as a whole

The advisory group filtered the needs of this stakeholder group, formulated the structure that everyone agreed upon, and ultimately guided the initiative to where it is today. The final structure and program that could meet all five criteria and satisfy both stakeholders and the advisory group is housed at the Community Foundation for Southeast Michigan.

Throughout this process, four keys to success were quickly discovered. First, there was a physical representation (the report and map) of what could be done that everyone agreed to and that wasn't viewed as a prescriptive plan. Second, an institution that could reach across all jurisdictions and social boundaries to partners who felt comfortable working with it was critical. Third, a major driving funder was involved to help leverage other funds. Lastly, someone who could move within different sectors easily, comfortably, and with trust needed to take responsibility for the effort.

### ***The Tollgate Drainage District Sewer Separation Project***

Ingham County Drain Commission

In 1997, Lansing Township petitioned the Ingham County Drain Commissioner to find an alternative method of relieving storm water and flooding in a watershed of 234 acres with more than 550 residential homes, more than 10 commercial properties, over 1,000 apartment units, and 4 governmental agencies. The Tollgate Drainage District Sewer Separation Project became the solution, separating a combined sewer system and creating a 20-acre wetland detention basin for storm water.<sup>16</sup> The wetland serves as a wildlife refuge and a community learning center.

The project faced many challenges during all phases, including timing and coordination of schedules for this massive effort, holding public meetings involving reluctant stakeholders, managing inter-governmental agency conflict resolution, and refuting general misinformation. Not only did the system need to manage storm water quality and quantity, it also had to accommodate golfing and low-impact recreation and serve as wildlife habitat. Finally, financial backing had to be established.

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<sup>16</sup> [Online, cited 12/31/02] Available: <http://www.lib.msu.edu/turf/mtc2001/11.pdf>.

Traditional methods to alleviate storm water problems for this area would have cost \$23–\$30 million, but this approach cost roughly \$6 million—saving about \$18 million. For the storm water fix, Lansing Township paid 15 percent, the City of Lansing paid 6 percent, and the Ingham County Road Commission paid 30 percent. The remainder of the cost, roughly half, was assessed to property owners within the drainage district. The average cost to a homeowner was \$3,000 over a 20-year period, an annual cost of \$150. The City of Lansing paid the \$3 million bill for the sanitary water remedy and financed the rebuilding of the golf course through a revenue bond.

Other challenges came with the implementation of a public outreach program to educate the residents and use the wetland as a teaching resource. Information sessions were held, partnerships were made with local and regional environmental groups in order to reach a broader audience, and partnerships with local teachers and university professors were made to write a curriculum for students. Brown bag lunch sessions and tours facilitate education of service groups.

The new drainage system on the front half of the Groesbeck Municipal Golf Course is designed to store, manage, move, and clean storm water from a neighboring subdivision in a natural manner. One of the three ponds used for irrigation on the golf course is tied into the wetland system. Pond water nutrient levels are tested before irrigation and factored into the overall fertilizer application budget. This practice reduces nutrient loading into the ponds and decreases golf course maintenance costs. The golf course holding ponds are essential to keep the fairways from flooding in times of high rain, which in effect keeps the course open longer and attracts more golfers.

### ***West Michigan Trout Unlimited***

The West Michigan Trout Unlimited chapter was founded in 1962 to protect the health of local streams and the wild trout that live in them. The West Michigan Trout Unlimited chapter has been involved with many activities that fall under the green infrastructure umbrella, such as stream monitoring, bank stabilization, and fish and invertebrate studies. The West Michigan Trout Unlimited chapter works specifically on the Pere Marquette, Rogue, Muskegon, Au Sable, and Coldwater Rivers.<sup>17</sup>

### ***Western Michigan Trails and Greenways Coalition***

Interview: Annamarie Bauer, Coordinator, (616) 784-8020

In 2000, a group of organizations and agencies interested in trails and greenways set out to collaborate efforts in Comstock Park. Local governments (county, township, city), land conservancies, and volunteer trail groups convened to form this coalition, whose mission is to connect the trails and greenways efforts of each partner to form a regional network of trails and greenways. The coalition identified a regional trail network of 500 miles through 20 counties and hopes to implement the connections over the next seven years. Roughly 300 miles, or 60 percent of the goal, can be accomplished through old railroad rights-of-way. In addition, the group is supportive of endeavors that utilize passive

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<sup>17</sup> [Online, cited 12/26/02] Available: <http://www.wmtu.org/about.html>.

recreation activities on properties, especially if they are located adjacent to the regional trail network.

The coalition also works with developers to incorporate trail and greenway easements into the design phase of developments.

## **BUSINESS-ORIENTED TECHNIQUES**

### ***Green Building Initiatives***

Interview: Guy Bazzani, Principal, Bazzani Associates Inc. (616) 774-2002

Bazzani Associates Inc. has renovated a historic property to LEED standards. Leadership in Energy and Environmental Design (LEED) is an initiative to build and restore commercial properties in an environmentally sensitive manner. Principles of this endeavor include using no products (such as glues and paints) that contain volatile organic compounds; using recycled or recyclable materials; and using products from sustainable-yield forests. The LEED program is sponsored by the U.S. Green Building Council, a coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable, and healthy places to live and work. LEED is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.<sup>18</sup>

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<sup>18</sup> [Online, cited 12/14/02] Available: [http://www.usgbc.org/LEED/LEED\\_main.asp](http://www.usgbc.org/LEED/LEED_main.asp).

## ***Green Built Program***

### **Home and Building Association of Greater Grand Rapids**

The Green Built Program is a nationwide initiative on the part of the National Association of Home Builders to incorporate environmentally sensitive principles into building design. It encompasses such aspects as waste management, indoor air quality, water conservation, and energy efficiency among others. While it is similar to LEED in principle, these standards are for residential properties only.

The Home and Building Association of Greater Grand Rapids recently formed a task force to design a Green Built Program for its service area.<sup>19</sup>

## ***West Michigan Sustainable Business Forum***

Interview: Tom Leonard, Ex-Oficio Secretary/Treasurer, (616) 451-3051

Approximately ten companies chartered the West Michigan Sustainable Business Forum a decade ago; now there are 80-85 members, mostly comprising the main manufacturers in the region. Members meet monthly to network and gain technical knowledge relating to their business and the environment. For example, pollution-prevention management and design, marketing and public relations, or transportation may be the topic of presentations. As a result of this initiative, several companies have used unique approaches to help improve environmental business practices.

Herman Miller, an office furniture manufacturer, has partnered with local area farmers to put their wastes to good use. Working closely with the Michigan Department of Environmental Quality to ensure safety, they combine sawdust and manure to create compost.

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<sup>19</sup> Home & Building Association of Greater Grand Rapids. *Green Building: A Blueprint for the Future*. [Online, cited 12/24/02] Available: [http://www.ggrhba.com/about\\_issues\\_green.htm](http://www.ggrhba.com/about_issues_green.htm).





# Green Infrastructure Best Practices Summary

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PSC also examined regional green infrastructure programs in other states to produce a set of best practices that the Alliance can use in devising its own regional, green infrastructure recommendations.<sup>20</sup> What follows is a summary of best practices from examined programs, with an emphasis on the Midwest. Programs in Minnesota, Illinois, Wisconsin, and Ohio were the first to be reviewed. A brief description of each reviewed plan follows this summary section.

While a deliberate focus on the Midwest was the target for this summary of best practices, there were two noteworthy outliers: Maryland and North Carolina. Maryland is unique because it is the only statewide initiative, and in light of its other smart growth initiatives, is a definite trendsetter. While in its formative program stages, North Carolina's research triangle of Raleigh, Durham, and Chapel Hill resonated very closely with the western Michigan Triplex region. There are about a dozen other regional, green infrastructure programs across North America in metropolitan areas that are notable but beyond the scope of this report. They include Seattle, Washington; St. Catharines, Ontario; Kinston-Lenoir, North Carolina; Pittsford, New York; Topeka, Kansas; Denver, Colorado; as well as the Cattooga region in North Carolina, South Carolina, and Georgia; Massachusetts; and Florida.

Each plan, in its goals and strategies, uses many of the principles of green infrastructure laid out by Benedict and McMahon. However, each plan has different focuses and strengths.

A case study similar to the present report, conducted by the Trust for Public Land, reveals key elements that lead to success in watershed land conservation and also reinforce Benedict and McMahon's green infrastructure principles. While the Trust for Public Land report addresses watershed land conservation only, the lessons learned are relevant to the green infrastructure challenge before the Alliance:

- *Projects are driven by several motivations.* For example, while the primary interest of one group may be water quality enhancement, plans recognize other parallel and complimentary goals, like wetland or wildlife habitat protection. By combining goals with similar outcomes under one umbrella, the stakeholder audience is broadened and strengthened at the same time.
- *Decisions about land acquisition and public investment are based on credible scientific or economic information.* In the absence of sophisticated information, decisions are based on simpler models of cost-effectiveness and multiple benefits of land conservation.
- *Public education on the many values of watershed protection must occur.*

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<sup>20</sup> For a review of best practices on a local level in Southeast Michigan, the Southeast Michigan Council of Government's *Best Practices for Sustainable Development* (March 1999) provides a good overview.

- *Unique partnerships that are multi-jurisdictional, cross professional disciplines, and share a common set of goals are preferred.* It is important to involve all levels of government (local, state, and federal).
- *Land acquisition programs require local funding through voter-approved bond sales or taxes.* This helps ensure community support, investment, and involvement.
- *Successful land acquisition often takes place within a strong regulatory framework and alongside other land protection tools.*<sup>21</sup>

It became clear, quite quickly, that the other regions in the country that PSC examined share the same goals and are engaging in activities similar to those the Alliance is currently pursuing. They, too, cite the same primary incentives for wanting a uniform, shared vision: improved quality of life and regional or global competitiveness. There also appears to be a common process to these regional plans, as depicted in the exhibit on page 23. They begin with networking and discussing the idea of green infrastructure, followed by consensus or coalition building and sometimes organization forming.

Each initiative has a lengthy list of partners and cites this as a key to its success. Whether the initiative is coalition led or government guided, inclusive participation is essential. Chicago Wilderness involved 88 groups across three states; the open space assessment in North Carolina's research triangle was crafted by 140 professionals and experts.

Another element of the partnerships that program stakeholders cite as important is some level of state involvement and/or sponsorship. For initiatives that involve purchasing property, many say that they could not have met their objectives without state funds. Maryland's Greenprint plan, unlike others referenced, is a statewide initiative. Its strength is substantial backing by state government: the program is funded by the state and carried out by two state agencies. The lesson from this plan is the importance for any green infrastructure program, state- or region-wide, to have designated government funding.

Once a shared vision is in place, data gathering begins, followed by analysis of the data. This step is important because it shows the stakeholders what further information is needed in order to make sound decisions. From the interviews PSC conducted, it appears that western Michigan may have an advantage over other regions because there are already many inventories of various types of resources (habitat, trails, natural areas) available. The challenge then becomes gathering all of these inventories in one repository and standardizing the data. From here, analysis can be done in order to recognize gaps in data.

The next step is setting priorities for the region through a *regional* lens. Once the priorities are set, groups must implement initiatives, educate, and act. All of the case studies reviewed emphasize the need to educate the public about their program. Education is key and cannot be overstated. In part, public education helps the process become more participatory. Education should lay the groundwork for explaining why and

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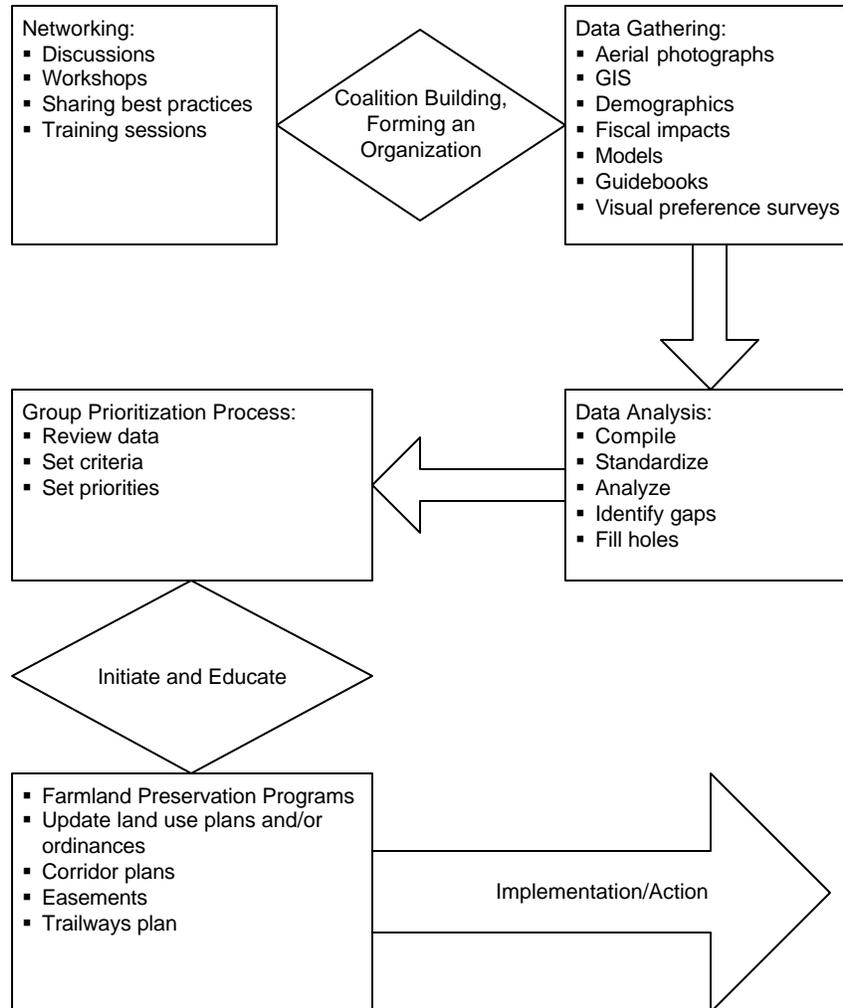
<sup>21</sup> The Trust for Public Land. 1999. *Building Green Infrastructure: Land conservation as a watershed protection strategy*. San Francisco, Cal.: The Trust for Public Land. [Online, cited 12/24/02] Available: <http://www.tpl.org> (click on "Publications"). Italics added for emphasis.

how the plan will implement its strategies and, in theory, help facilitate meeting the goals. One challenge of education is the broad nature of green infrastructure.

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### Common Process for Green Infrastructure Planning

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SOURCE: Public Sector Consultants.

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Indeed, a myriad of topics are included under the umbrella of green infrastructure. Many of these initiatives have several common components, including greenways, trails, water quality, farm and forestland, existing land uses (i.e., transportation, commercial, residential, and industrial areas), parks, natural areas, waterways, corridors/connectors/links, open or greenspace, and wildlife habitat. This analysis is limited to green infrastructure plans that are broad in scope. Topics such as watershed management, agricultural preservation, groundwater or lake protection, and land use planning, while important and part of green infrastructure, would have broadened the scope of the review to unwieldy proportions.

Some initiatives, however, are topic focused, meaning that although they are considered green infrastructure plans, they emphasize one particular area. For example, Chicago has a biodiversity plan, Raleigh-Durham-Chapel Hill has an open space plan, and Minneapolis-St. Paul has a floodwater prevention plan. While these plans typically have all the common components listed above, their recommendations focus on ways to enhance or protect biodiversity, open space, and floodwater prevention explicitly through green infrastructure.

Minneapolis-St. Paul's Metro Greenprint program builds on the tradition of jurisdictions in the Twin Cities region working together to solve regional issues. While a tradition of regionalism is not required for a successful program, logic dictates that a regional green infrastructure program would be easier to implement in a region with a history of cooperation than a region without such history. The lesson to be learned here is to work from previous successes. If communities in a region have a history of working well together on a specific topic, start there and broaden consensus.

Finally, one element of these plans that did not receive the emphasis that it should have is evaluation of the projects and plans. It is crucial to set goals and objectives that have measurable outcomes, especially if public funds are going to be used in the process. Hard numbers are vital: for example, "2,200 acres at a price of \$2 million were saved" or "long-term cost savings to taxpayers will be \$4 million over ten years." Minnesota and Ohio are examples of building a strong foundation for success using verifiable outcomes.

## **MARYLAND'S GREENPRINT PROGRAM**

Maryland has gotten much favorable press coverage over the past few years for its progressive efforts to bring about a smart growth approach to development. Therefore, it is no surprise that Maryland has one of the most promising and dynamic green infrastructure programs in the country. Maryland's statewide initiative, called the GreenPrint program, has a threefold purpose: (1) identify the most important unprotected natural lands in the state, (2) link or connect these lands through a system of corridors, and (3) save these lands through targeted acquisitions and easements.<sup>22</sup>

Two Maryland state agencies, the Maryland Department of Natural Resources (MDNR) and the Maryland Agricultural Land Preservation Foundation (MALPF), are authorized to identify and protect important ecological lands. In 2002, these two agencies were authorized to spend \$145 million dollars, 75 percent from the MDNR and 25 percent from the MALPF. The MDNR identifies lands for acquisition through its Program Open Space, while MALPF uses its share to protect properties within its agricultural districts that contain important green infrastructure lands.<sup>23</sup>

In addition to substantial state backing and funding, Maryland's GreenPrint program incorporates other public and private sector land-use tools, including open space bonds,

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<sup>22</sup> Maryland Department of Natural Resources. 2001, Spring. *Maryland's GreenPrint Program: Summary of Methods to Identify and Evaluate Maryland's Green Infrastructure*. Annapolis, Md.:MDNR. [Online, cited 12/24/02. Available: <http://dnrweb.dnr.state.md.us/download/grantsandloans/gpevaluation.pdf>

<sup>23</sup> Maryland Department of Natural Resources. 2000. *Maryland's GreenPrint Program, GreenPrint Program Implementation*. [Online, cited 12/24/02] Available: <http://www.dnr.state.md.us/greenways/greenprint/gi.html>.

conservation easements, zoning, and subdivision set-asides,<sup>24</sup> to accomplish its objectives.

The goal of the GreenPrint program is to identify areas of ecological importance, while taking into consideration the following factors:

- A variety of natural resources
- How a given parcel fits in a larger system
- Ecological importance of open space
- Importance of coordinated state and local planning
- Need for a regional-level view for wildlife conservation<sup>25</sup>

Maryland's Greenprint program classifies land types into two groups: green hubs and green links. Green hubs are large (average size of 2,200 acres), contiguous areas that contain one or more natural features, such as forestland, wetlands, wildlife habitat, streams, or rivers. Green links are linear areas that connect green hubs together into a network that allows natural migration between green hubs, which helps nurture ecologically healthy habitats. Green links typically follow existing ecological routes, such as streams, ridgelines, or forested valleys.

Once the state identifies lands for protection, local units of government must concur before action is taken. After consensus is reached and verification of parcels is complete, the MDNR ranks the hubs and links by relative ecological importance within regions. Green hubs and links are also ranked within their regions by relative risk of loss to development. The ranking system is further refined based on local unit of government input and fine-scale examination before proceeding. Finally, the state calculates the cost of purchasing the hub and link lands and proceeds to acquire the parcels.

## **METRO GREENPRINT— MINNEAPOLIS-ST. PAUL, MINNESOTA**

Communities in the Minneapolis-St. Paul region have had a tradition of working together to set aside land for nature. In 1974, the Metropolitan Council worked with local counties to produce a regional park system that now includes 45,000 acres of parkland and 80 miles of public trails. It is also important to note that the Minneapolis-St. Paul region is the only metropolitan region in the United States that has a property-tax revenue-sharing agreement among all the local communities in the seven counties that make up the metropolitan region.

In the 1990s, the citizens of Minneapolis-St. Paul began to realize that the natural resources that made the region such an attractive place to live were disappearing under

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<sup>24</sup>The Conservation Fund. *Common Ground: Maryland Creates GreenPrint Program*. [Online, cited 12/26/02] Available: [http://www.conservationfund.org/pdf/ground12\\_4.pdf](http://www.conservationfund.org/pdf/ground12_4.pdf).

<sup>25</sup>Maryland Department of Natural Resources. *Maryland's GreenPrint Program, Green Infrastructure Planning*. Annapolis, Md.: MDNR. [Online, cited 12/26/02. Available: <http://www.dnr.state.md.us/greenways/greenprint/gip.html>.

development due to population growth. A group of concerned citizens formed the Greenways and Natural Areas Collaborative. This group's goal was to develop a vision and plan that would save and preserve the Minneapolis-St. Paul region's important ecological areas while at the same time allowing for the continuation of needed development.

The result of the meetings of the Greenways and Natural Areas Collaborative was the report, *Metro Greenprint: Planning for Nature in the Face of Urban Growth*,<sup>26</sup> which outlines three major building blocks of a green infrastructure network (natural areas, open spaces and greenways) and identifies goals and strategies for achieving a region-wide green infrastructure network.

Natural areas are sites untouched by human activity. These sites represent the healthiest pieces of land in a metropolitan region, which means they include many species and allow for wildlife habitat.

Open spaces are classified as undeveloped sites, but are not natural areas because they have been affected by human activities. The Greenprint report identifies these sites as areas potentially providing human food, buffering natural areas, or creating a sense of community. Examples of open spaces include golf courses, farmland, and high-use parks.

Greenways are continuous areas of vegetation that allow the movement of humans and wildlife, unlike roadways that only allow for primarily motorized human movement. Greenways serve as linkages that increase habitat availability and connectivity. For human movement, they provide alternative transportation choices and increased business development by connecting business and community centers.

The goals and strategies outlined in the report are as follows:

- Create and manage a greenways and natural areas network.
- Conserve and restore natural areas to maintain a dynamic, functioning natural landscape that provides ecological, aesthetic, and economic benefits while allowing for adaptation to future environmental changes.
- Connect and enhance existing open spaces, outdoor recreational amenities and cultural resources to the regional greenways and natural areas network.
- Ensure that the greenways and natural areas network serve all metropolitan residents.
- Build public and private support for the greenways and natural areas network.
- Fund the creation and maintenance of the regional greenways and natural areas network through public and private resources.

The overall recommendation of the Greenways and Natural Areas Collaborative was to stimulate interest in their greenspace initiative among the general public. As many green infrastructure plans recognize, public involvement is key for success. The plan also calls

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<sup>26</sup> Greenways and Natural Areas Collaborative. 1997, December. *Metro Greenprint: Planning for Nature in the Face of Urban Growth*. St. Paul, Minn.: Greenways and Natural Areas Collaborative. [Online, cited 12/26/02] Available: <http://files.dnr.state.mn.us/assistance/fad/greenways/greenprint.pdf>.

for strengthening relationships among all the federal, state, and local governments who have a stake in a regional green infrastructure plan. Another important next step it describes is developing a database that will allow a regional greenspace group to evaluate and rank potential sites.

## **CHICAGO WILDERNESS—CHICAGO, ILLINOIS**

Chicago Wilderness is a coalition of 88 organizations that share a common interest in protecting and enhancing the Chicago metropolitan region's biodiversity. The area that Chicago Wilderness covers spans northeastern Illinois, southeastern Wisconsin, and northwest Indiana. Represented among the 88 member organizations are local, regional, state, and federal governments, conservation groups, and educational and research organizations. The element that distinguishes Chicago Wilderness from other prominent green infrastructure programs is its focus on biodiversity. While Chicago Wilderness advocates the use of many of the same land use tools and techniques favored by other programs, Chicago Wilderness is first and foremost concerned with biodiversity. Chicago Wilderness focuses on two actions to protect and recover biodiversity: enlarging natural areas by protecting the land and managing the land to sustain native ecological communities.

The overall goal of Chicago Wilderness is to "...protect the natural communities of the Chicago region and to restore them to long-term viability, in order to enrich the quality of life of its citizens and to contribute to the preservation of global biodiversity."<sup>27</sup> To reach this goal, Chicago Wilderness has identified the following objectives:

- Involve the citizens, organizations, and agencies of the region in efforts to conserve biodiversity.
- Improve the scientific basis of ecological management.
- Protect globally and regionally important natural communities.
- Restore natural communities to ecological health.
- Manage natural communities to sustain native biodiversity.
- Develop citizen awareness and understanding of local biodiversity to ensure support and participation.
- Foster a sustainable relationship between society and nature in the region.
- Enrich the quality of the lives of the region's citizens.

In its plan, Chicago Wilderness presents several recommendations to achieve the overall goal of protecting and strengthening biodiversity in the metropolitan area:

- *Preserve more land with existing or potential benefits for biodiversity.* The plan calls for giving high priority for protection of important, but unprotected, natural communities that are threatened by development, through the expansion of nature preserves, public acquisition, or through actions of qualified private owners.

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<sup>27</sup> Chicago Wilderness. 1999, September. *Biodiversity Recovery Plan: Final Draft for Public Review*, 6. [Online, cited 12/26/02] Available: <http://www.chicagowilderness.org/pubprod/brppdf/chapter1.pdf>.

- *Manage more land to protect and restore biodiversity.* It is not enough to just protect land; it must be managed once it is placed under protection. There is mounting evidence that nature preserves, if left alone, will degrade because of interruption of natural processes due to external influences. Therefore, the Chicago Wilderness plan gives the highest priority to establishing programs to maintain the health of natural communities
- *Protect high-quality streams and lakes through watershed planning and mitigation of harmful activities to conserve aquatic biodiversity.*
- *Continue and expand research and monitoring.* Chicago Wilderness believes that a regional monitoring program, along with a prioritized research agenda, will produce significant contributions to its efforts to conserve biodiversity.
- *Apply both public and private resources more extensively and effectively to inform the region's citizens of their natural heritage and what must be done to protect it.* Without support from a large segment of the population, there would be no way to achieve any of the goals of any endeavor the size and scope of Chicago Wilderness. Therefore, as a precondition for success, the general public must be educated and informed about biodiversity and the efforts to preserve it.
- *Adopt local and regional development policies that reflect the need to restore and maintain biodiversity.*

## **MILWAUKEE WATERSHED CONSERVATION PLAN— MILWAUKEE, WISCONSIN**

Watercourse studies for three metropolitan Milwaukee rivers indicate that projected demographic trends will intensify existing flood problems in the Milwaukee watershed area. The Milwaukee Metropolitan Sewerage District (MMSD) is implementing a program called the Conservation Plan to combat this problem.<sup>28</sup> The MMSD provides wastewater treatment and flood management services to 1.2 million people in 28 southeastern Wisconsin communities.

A conservation plan was developed for three watersheds that identify parcels that need to be protected or restored for conservation purposes as floodplains, riparian habitats, environmental corridors, or isolated natural resource areas within the watersheds. The purpose of the plan is manifold:

- Identify undeveloped private properties potentially at risk for development that could provide future flood-reduction benefits.
- Assess through a survey for MMSD opportunities to partner with public, private, or nonprofit entities that would assist with the acquisition, management, and maintenance of identified properties.
- Assess mechanisms and strategies to leverage MMSD funding for this effort.

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<sup>28</sup> The Conservation Fund et al. 2001, October 31. *Milwaukee Watershed Conservation Plan*. Chicago, Ill: The Conservation Fund. [Online, cited 12/26/02] Available: <http://www.conservationfund.org/page/spinner.asp?article=2541&back=true> (click on “Executive Summary”).

- Provide recommendations for the acquisition of specific parcels (or easements on those parcels) at risk for development.
- Consider how the ecological restoration of identified parcels could reduce future flooding.

The conservation plan and accompanying documents provide information that can be used for various land acquisition (easement or purchase) strategies. Each site is ranked in order of projected value for reducing future flooding risks. The following is a hierarchical approach for targeting parcels for acquisition.

1. Target all anchor parcels within each of the 42 high-priority sites. An anchor parcel is defined as the parcel with the greatest storage potential within each site.
2. Once the anchor parcel for a site is acquired, highly ranked parcels adjacent to anchor parcels should be targeted.
3. Non-anchor parcels within highly ranked sites in which the anchor parcel has not been acquired might be considered for acquisition if certain conditions apply.
4. Parcels within low-priority sites should be considered after exhausting the above strategies.

This study initially identified 199 sites totaling 17,146 acres for further investigation. Thirty-four sites totaling 2,418 acres were eliminated during field visits because they were developed. Forty-two sites totaling 7,066 acres were identified as high-priority sites. The remaining sites (7,663 acres) were identified as low to medium priority for acquisition due to limited flood protection benefits, an impractical configuration for acquisition, or an excessive number of parcels.

Results from activities to date are as follows:

- Many high-priority sites for potential storage have been lost or altered since 1995.
- Sixty-one percent of the available high-priority sites have entities that are “definitely” interested in partnering with MMSD.
- Approximately \$15 million is earmarked for project costs. Due to variable land costs, an accurate estimate of the amount of land that might be purchased with money earmarked for this project is difficult to ascertain.
- The cost per acre-foot of flood storage within restored wetland habitat is much less than the cost per acre-foot using traditional detention facilities.
- MMSD is presently contacting each landowner in the 42 highest-priority sites to determine whether they are willing to sell a conservation easement on their development rights or sell their property outright. MMSD will partner with local governments and/or land trusts to provide management on the properties it has acquired.

## **CUYAHOGA COUNTY GREENSPACE PLAN— CUYAHOGA COUNTY, OHIO**

Cuyahoga County will soon become the first “built-out” county in Ohio, as nearly 90 per cent of its land had been developed by 1990. Recognizing that the future health of the county will be based upon its attraction as a sustainable, desirable, and healthy place to work, live, and play, the County Planning Commission (CPC) embarked on an effort to secure that future with a greenspace plan. Through planning, creating, and managing greenspaces, the CPC hopes to shape a future for Cuyahoga County as a place where:

- Natural places are an integral part of daily life
- Natural processes are visible and instructional
- Waterfronts are cared for and accessible

The intent of the Greenspace Plan is to promote a broad comprehensive vision for greenspace protection and restoration within Cuyahoga County. The plan is also intended to promote complementary development and establish a common agenda and direction for the varied efforts of the many stakeholders.<sup>29</sup>

Working with greenspace professionals, community leaders, and residents, the CPC has developed a greenspace vision for Cuyahoga County that:

- Builds off of the county’s unique geography and natural history
- Emphasizes the environmental, community, and economic importance of greenspace
- Will inspire decision makers to make greenspace a priority in the community
- Promotes connecting neighborhoods in the county to greenspace and the county’s natural resources
- Encourages the “regreening” of the more urban portions of the county to make them more desirable places to live

To develop the Greenspace Plan, natural and man-made features of the county were mapped. Ideas from the county’s municipal master plans, recreation plans, environmental plans, and a series of public meetings were also reviewed. The information was combined and synthesized to develop an open space plan for Cuyahoga County that comprises the following elements:

- A system of natural corridors
- A countywide trail system
- Preservation of scenic views
- Protection and restoration of critical natural areas
- Greening of neighborhoods and property stewardship
- Public awareness and education

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<sup>29</sup> Cuyahoga County Planning Commission. *Cuyahoga County Greenspace Plan*. Cleveland, Ohio: Cuyahoga County Planning Commission. [Online, cited 12/16/02] Available: <http://planning.co.cuyahoga.oh.us/green/index.html>.

After the basic elements of the plan were developed, opportunities for open space protection and trail connections were more closely identified through another process. The Cuyahoga County Greenprint is a vision for Cuyahoga County that serves as an organizing framework, linking communities to each other and to the environment. It builds on previous planning efforts, ideas from other planning studies, and from the series of Greenspace public meetings. The Greenprint provides a direction for cooperation among communities and for more localized and detailed open space planning. In addition to making connections within Cuyahoga County, the Greenprint attempts to identify connections to surrounding counties. The Greenprint identifies existing green and gray infrastructure and identifies potential connectors for both nature (environmental management, open space protection and restoration) and humans (community centers and institutions).

The Cuyahoga County Open Space Inventory, conducted in the mid-1990s, found 32,200 acres of private and publicly protected open space in the county. Based upon the opportunities identified within the Greenprint, a goal of preserving and restoring approximately 20,000 acres (about 6.6 percent of total county land area) of additional open space has been established. While there are approximately 115 miles of existing trails within Cuyahoga County, a goal of an additional 330 miles of new trails has been established, based upon opportunities identified in the Greenprint.

In addition to the above goals, the Greenspace Plan recommends the following actions:

- Construct 20 major scenic overlooks
- Create 25 tributary watershed plans
- Suffer no net loss of wetlands from the county
- Add 200 acres of wetlands,
- Create 5 bird sanctuaries
- Inventory the county's natural features
- Develop public sector leadership
- "Green-up" 405 miles of roads and rights-of-way
- Establish an Urban Land Conservancy
- Double the number of community gardens
- Actively engage owners of half of the county's 500,000 parcels

## **TRIANGLE GREENPRINT — RALEIGH-DURHAM-CHAPEL HILL, NORTH CAROLINA**

The Triangle GreenPrint is in the infancy of development. The GreenPrint is a project to facilitate development of a regional vision for open space in the Triangle. It will provide information and tools to help stakeholders identify and protect a regional network of greenspace. The first task accomplished under the GreenPrint is a regional, GIS, open

space assessment developed by more than 140 open space professionals and local experts.<sup>30</sup>

The regional open space assessment was born out of partnerships between local units of government, not-for-profits, and councils of government and forms the basis for the Triangle GreenPrint plan. It includes parks, greenways, historic areas, natural areas, water quality, and farm and forestland elements. The group developed criteria for prioritization of open space and also identified data gaps. It is recognized that this is a first step and a work in progress. Reasons for developing the assessment include needing a regional approach because open space spans many jurisdictions and there are unique resources within the region that may not be recognized as valuable until viewed regionally.

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<sup>30</sup>North Carolina Department of Environment and Natural Resources, Triangle Land Conservancy, Triangle JCOG. Triangle GreenPrint. [Online, cited 12/26/02] Available: <http://www.trianglegreenprint.org>.

# Conclusion

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The Alliance, by appointing the Task Force, is embarking on a process with which others have had initial success and are proceeding in a similar manner for similar reasons. With all of the seven principles for success outlined by Benedict and McMahon either possible or incorporated through the Alliance's regional vision-setting process, there appears to be a framework for success. The following specific insights and/or recommendations have been gained as a result of the preparation of this report.

1. *Western Michigan is an area that is rich in activity relating to green infrastructure.* Many different groups are doing many positive things in the green infrastructure arena. From trails to countywide planning, TDR, PDR, and innovative business practices, the diversity of activities is impressive. The challenge of the Alliance will obviously be to synthesize and capitalize on them.
2. *One of the keys to success is bringing together many stakeholders into the process.* Fortunately, there is already much collaborative work being accomplished in the region and many of the necessary stakeholders are already engaged in some green infrastructure initiative. The region appears to be well connected, at least within topic areas (e.g., most of the groups involved in establishing trails know of one another and/or are working together). The business community appears to be particularly active in environmental issues. It also appears that the region's stakeholders work closely and well with political leaders—an advantage to any effort. The Alliance has an advantage in that many of the necessary coalitions have been or are being established. One area for development is relationships with state and federal players.
3. *The extent of existing collaboration within the region provides a platform for future success.* Starting new collaborative efforts from already existing common ground lessens the amount of input needed to bring a group together, provides a solid foundation to work from, and increases the likelihood of success.
4. *Information and data management and dissemination will be a challenge.* There appear to be a number of inventories and studies available. The Annis Water Resource Institute at Grand Valley State University has compiled relatively current land use data for Kent, Muskegon, Newaygo, and Ottawa Counties based on aerial photograph interpretations. While this is generally a very positive outcome, there are a few challenges associated with it. The data must be brought together in one central location and standardized for multiple-user platforms. Second, stakeholders must be able to access and utilize this vital information. One reason why information and data management and dissemination are so critical is that in the planning process, data and information gaps must be uncovered and rectified. Another reason for their importance is that sound, justifiable data or logic models must form the backbone of any action taken.
5. *Three items are critical to the ultimate planning process and future success of any new initiative of this type: public education, evaluation, and fundraising.* Even though these activities aren't fully developed until later in the process it is

important to begin thinking of how to incorporate them into the plan now, or even let them drive some goal setting. When priorities are discussed, it will be an efficient use of time to also consider the public education that will have to accompany them. Strong, measurable goals will be a component of a successful evaluation, and if this is considered during the goal-setting process, the chances of a successful outcome increase. The same can be said for fundraising, when thinking through how the goals will be implemented.

6. *Begin changing the land and community planning process by incorporating green infrastructure plans alongside or in advance of gray infrastructure, traditional land use, or master planning.* If our air, water, and land are valuable resources, their protection and enhancement must be a part of the planning equation, right alongside our plans for the built environment. Planning gray and green infrastructure in tandem sets forth the vision of how a region will grow.

Make this document breathe and let this be the starting point. While it can certainly be expanded upon, there is much useful information about projects and programs in this report. In fact, many of the interviewees were interested in what the Alliance and other groups are doing in the region. This information should be shared with all stakeholders, including those interviewed; perhaps making this information available on the Alliance website would be a first step. This web-platform would be easy to update over time and a forum where stakeholders could update and/or add programming news could supplement the page and disseminate the information to a large audience. Another option for expanding the work of this document is to formally survey the various stakeholders in order to compile a complete list of current projects.

# Missing Pieces

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As with any inventory, there are pieces of the puzzle that go uncollected. This report is no different. While the goal was to gather samplings of green infrastructure initiatives in the western Michigan region by topic and geographical location, there are a few missing pieces that need further investigation:

1. Several county and township programs have been identified that preserve open space and/or agriculture. A healthy green infrastructure plan may also include initiatives within already developed areas, especially if they impact surrounding jurisdictions.
2. One of the conclusions of this report is that both state and federal stakeholders could be better involved in the regional effort. One such group is the Natural Resource Conservation Service (NRCS). While regional office staff could not be reached to discuss current, key programming in the region, countywide NRCS offices provide a range of green infrastructure services, including forestry management programs and buffer strip and wetland enhancement programs on farms to protect water quality, among others. In addition, NRCS agents are generally well connected with the agricultural community.
3. Another valuable aspect of green infrastructure is air quality. While it may be difficult to relate air quality protection and enhancement initiatives to on-the-ground work, they are important to the discussion of green infrastructure, especially as an evaluation tool for measuring impacts and certainly as part of an education campaign. For example, explaining the positive benefits that an interconnected regional trail system as an alternative (walking, biking) transportation mode can have on regional air quality is important. Toward that end, the following three air quality initiatives are mentioned.
  - The Great Lakes Renewable Energy Association was founded in 1991 to promote the design, construction, manufacture, marketing, sales, use, and education of the general public in the practices of renewable energy sources in the Great Lakes region. Its focus since then has been to promote, educate, and advocate for
    - solar, wind, hydro, biomass, and other clean, sustainable energy technologies;
    - energy-efficient materials and practices;
    - passive solar building design;
    - public awareness of alternative fuel vehicles; and
    - distributed generation utilizing clean fuels, particularly hydrogen.<sup>31</sup>
  - The Ozone Action Program is a joint effort of the Macatawa Area Coordinating Council, Grand Valley Metro Council, and the West Michigan

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<sup>31</sup> Great Lakes Renewable Energy Association. 2002. [Online, cited 12/26/02] Available: [http://www.glrea.org/about\\_hist.html](http://www.glrea.org/about_hist.html).

Shoreline Regional Development Commission. The Ozone Action Program has designed a public alert system to tell citizens when ozone action days (days when ozone levels are elevated) are in effect and what activities should/should not be avoided.

- The West Michigan Clean Air Coalition is a program of the Grand Valley Metro Council. The Coalition works with businesses, governments, and education groups to promote awareness of air quality, including ozone action days and activities citizens can participate in to lessen their impact.

## Appendix:

# Organizations and Contact Information

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Name, Title	Organization	Phone Number	Address
Jim Ferro Planning Director	Ada Township	(616) 676-9191 Ext. 31	P.O. Box 370 Ada, MI 49301
Frank Walsh Planner	Alpine Township	(616) 784-1262	5255 Alpine Ave. NW Comstock Park, MI 49321
Rod Denning Research Associate	Annis Water Resources Institute	(616) 331-3793	125 Lake Michigan Center 740 West Shoreline Drive Muskegon, MI 49441
Guy Bazzani Principal	Bazzani Associates Inc.	(616) 774-2002	P.O. Box 68745 Grand Rapids, MI 49516
Henry Hofman Supervisor	Blendon Township	(616) 875-7707	7161 72nd Ave. Hudsonville, MI 49426
Tom Woiwode Director GreenWays Initiative	Community Foundation for Southeastern Michigan	(313) 961-6675	333 W. Fort St. Suite 2010 Detroit, MI 48226
Andy Bowman	Grand Valley Metro Council	(616) 776-3876	40 Pearl St. NW Suite 410 Grand Rapids, MI 49503
	Home and Building Association of Greater Grand Rapids	(616) 281-2021	2021 44th St. SE Grand Rapids, MI 49508
Kris Olsson Watershed Ecologist	Huron River Watershed Council	(734) 769-5123	1100 N. Main St. Suite 210 Ann Arbor, MI 48104
Patrick Lindemann Ingham County Drain Commissioner	Ingham County Drain Commission	(517) 676-8395	700 Buhl Ave. P.O. Box 220 Mason, MI 48854
Jaime Morton Volunteer Coordinator	Lake Michigan Federation	(616) 850-0745	161 Muskegon Mall Suite 502 Muskegon, MI 49440
Carol McGeehan	Lakeshore Environmental Action Council	(616) 392-9436	568 West 31st St. Holland, MI 49423
Julie Stoneman Executive Director	Land Conservancy of West Michigan	(616) 451-9476	1345 Monroe Ave. NW Suite 324 Grand Rapids, MI 49505
Tom Bailey Executive Director	Little Traverse Conservancy	(231) 347-0991	3264 Powell Rd. Harbor Springs, MI 49740
Susan Higgins Executive Director	Macatawa Area Coordinating Council	(616) 395-2688	400 136th Ave. Suite 416 Holland, MI 49424
Ken Freestone Executive Director	Macatawa Greenway Partnership	(616) 396-2353	75 E. 8th St. Holland, MI 49424
	Meridian Township	(517) 349-1200	5151 Marsh Rd. Okemos, MI 48864

Andy Guy	Michigan Land Use Institute	(616) 308-6250	528 Bridge St. NW Grand Rapids, MI 49504
Keith Charters Project Coordinator	New Designs for Growth of the Traverse City Area Chamber of Commerce	(231) 947-7566	P.O. Box 5316 Traverse City, MI 49696
	Ottawa County Parks	(616) 738-4810	12220 Fillmore St. West Olive, MI 49460
Paul Sachs Land Use Planner	Ottawa County Planning and Grants Department	(616) 738-4852	12220 Fillmore St. West Olive, MI 49460
Larry Falardeau	Planning and Economic Development Services of Oakland County	(248) 858-5438	County Service Center 1200 North Telegraph Rd. Building 34 East Pontiac, MI 48341
Mark Wyckoff President	Planning and Zoning Center	(517) 886-0555	715 N. Cedar St. Lansing, MI 48906
Arnold Boezart Assistant to the President	The Community Foundation for Muskegon County	(231) 722-4538	425 West Western Ave. Suite 200 Muskegon, MI 49440
John Legge Program Director	The Nature Conservancy: West Michigan Program Office	(616) 776-0230	456 Plymouth SE Suite A Grand Rapids, MI 49505
Jon Coleman Executive Director	Tri-County Regional Planning Commission	(517) 393-0342	913 W. Holmes Rd. Suite 201 Lansing, MI 48910
Carla Gregory Regional Administrator	USDA Natural Resources Conservation Service	(616) 942-4111 Ext. 3	3001 Coolidge Rd. Suite 250 East Lansing, MI 48823
Kendra Wills Project and Rural Component Coordinator	United Growth for Kent County	(616) 458-6805	MSU-West 110 Commerce Bldg. 5 Lyon St. NW Grand Rapids, MI 49503
Kelly Cave	Wayne County Department of Environment	(313) 224-8282	415 Clifford St. Detroit, MI 48226
Darrell Robinson	West Michigan Clean Air Coalition	(616) 776-3876 Ext. 609	40 Pearl St. NW Suite 410 Grand Rapids, MI 49503
Martha Lore	West Michigan Group of the Sierra Club	(616) 682-1316	0-10794 2nd St. Talmadge, MI 49544
Kathy Evans	West Michigan Region of Environment Network		1899 Barnes Rd. Muskegon, MI 49442
Erin Kuhn	West Michigan Shoreline Regional Development Commission	(231) 722-7878 Ext. 18	Terrace Plaza Building 316 Morris Ave. Suite 340 Muskegon, MI 49440
Tom Leonard Ex-Oficio Secretary/ Treasurer	West Michigan Sustainable Business Forum	(616) 451-3051	1514 Wealthy St. SE Grand Rapids, MI 49506
Annamarie Bauer Coordinator	West Michigan Trails and Greenways Coalition	(616) 784-8020	6655 Alpine Ave. NW Comstock Park, MI 49321
	West Michigan Trout Unlimited	(616) 752-8596	P.O. Box 230094 Grand Rapids, MI 49523

