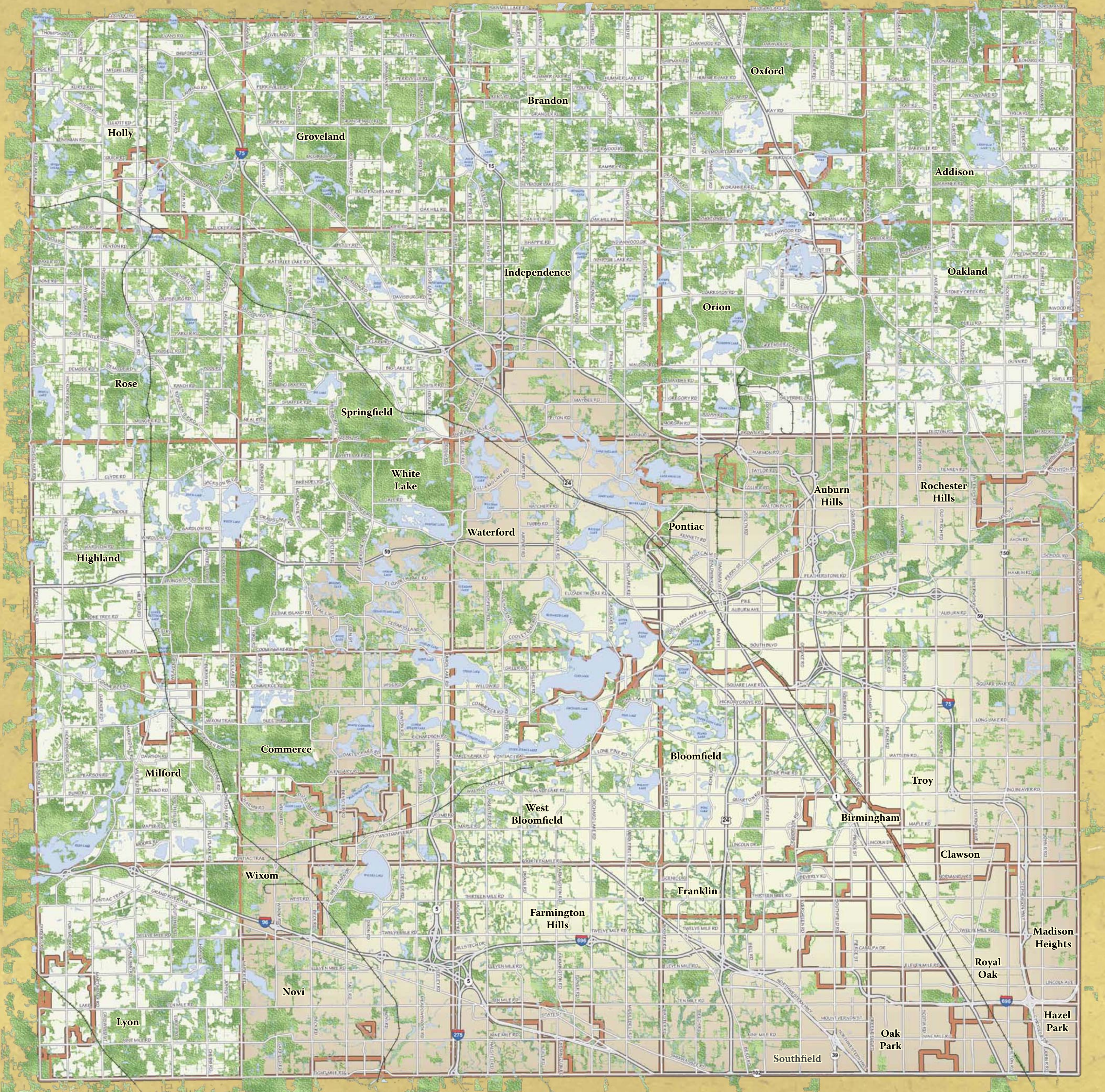# Green Infrastructure Vision
Oakland County, Michigan

Mark A. Benedict and Edward T. McMahon, of the Conservation Fund, defined the term green infrastructure as:
"an interconnected network of green space that conserves natural ecosystem values and functions and provides associated benefits to human populations."

green infrastructure spans across urban, suburban, and rural landscapes

Natural Areas
Rose Township

Lakes, Rivers, & Streams
Oxford Township

Recreational Opportunities
Independence Township

Trail Connections
City of Rochester Hills

Native Landscaping
City of Farmington Hills

Green Roofs
Addison Township

Conservation Development
Springfield Township

Schoolyard Habitats
Village of Milford

Street Trees
City of Ferndale

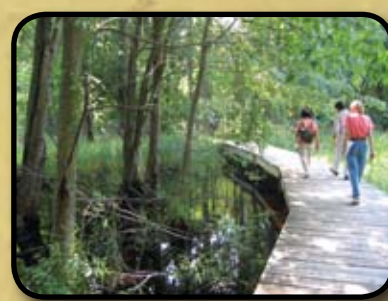**Lakes & Rivers:** Oakland County has over 1,400 natural lakes.

Green Infrastructure Vision: Hubs, sites, and links make up this network of connected open space.

Urban Boundary: Green Infrastructure in the urban landscape takes on a different look and feel. By integrating techniques like rain gardens, green roofs, street trees, and pervious pavement, a community can help to reduce stormwater runoff and improve air quality.

Municipal Boundary: There are 61 local units of government in Oakland County.

Linking and integrating the natural environment with the human environment

experience green infrastructure first hand

Nature Walk
Oakland Township

Fishing the Clinton River
City of Rochester Hills

Nature Exploration
Rose Township

Kayaking the Rouge River
City of Southfield

Native Plant Garden
City of Pontiac

Scenic Overlook
Addison Township

Rain Garden
City of Rochester Hills

Ellis Barn
Springfield Township

What is Green Infrastructure?

The building blocks for Green Infrastructure are hubs, sites, and links. The following definitions were used throughout the Oakland County Green Infrastructure community work sessions and visioning process:

Hub These large, contiguous areas are the foundation of the network and contain a large amount of core habitat for plants and animals. Hubs act as origins and destinations for a wide variety of living things, are typically greater than 250 acres in size, and include at least one Priority One Potential Natural Area.*
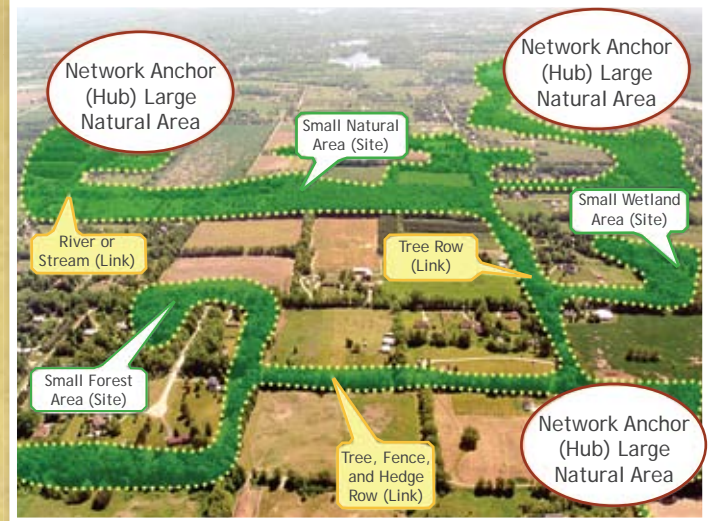
Due to a community's individual level of development, some hubs may be smaller in size and may not include Potential Natural Areas.

Site These areas are smaller than hubs in size and contain less core habitat; however, they are an essential component to the natural network. These areas include smaller wetland complexes, small woodlots, and other open space.

Link The linear connections between hubs and sites are a vital component to the functionality of the entire network. Without linkages, the hubs and sites, in essence, become fragmented islands within the landscape.

Not all Green Infrastructure projects have the same goals and each project may include a variety of land types containing a mixture of ecological values. Using the Vision will place these projects in context and encourage environmental thinking that crosses political boundaries.

The County's Role Understanding the value of Oakland County's natural heritage and developing a shared long term preservation vision is a critical first step in preserving our natural assets. Oakland County's Green Infrastructure Vision is this long term, interconnected vision created at the local level by engaged communities. At a series of work sessions, facilitated by Oakland County between 2005 and 2009, community participants inventoried existing natural features, established collaboration opportunities, and considered how to set and achieve future conservation goals. Programs and strategies, which both support the environment and recognize the demands of the economy, provide a balanced and sustainable approach to land use planning. The County provides Green Infrastructure capacity building assistance to local governments, businesses, work groups, and individual citizens in both urban and rural areas.

Your Role Within this Green Infrastructure planning effort, all stakeholders should have the opportunity to create and implement their unique piece of the shared vision. No one is more familiar with your community than you. As a resident, business, non-profit organization or elected official, you are in a unique position to lead in raising awareness about the need for locally based Green Infrastructure. You have the ability to influence and promote proactive conservation that fosters sustainable environmental, social, and economic health within your community. Use the County's Green Infrastructure Vision to help start the discussion, form partnerships, and place your projects within a larger planning context.

What are the benefits?

Taking a comprehensive, integrated approach to Green Infrastructure creates a multitude of environmental, social, and economic benefits that foster healthy and sustainable communities. When considering associated Green Infrastructure benefits, it's important to keep in mind that even seemingly small projects, when taken together, have a meaningful impact. By highlighting the connection between the environmental, social, and economic benefits associated with Green Infrastructure, we support a strong sense of place and create the basis for innovative solutions that support all stakeholders.

Natural Assets = Higher Property Values

In 2007, Michigan State University's Land Policy Institute conducted a study that focused on the valuation of Green Infrastructure in Michigan. Results of the study indicate that, specific to Oakland County, Green Infrastructure amenities contribute significantly to residential property values.

These findings highlight the property value implications of Green Infrastructure assets and the increased tax benefits that local governments accrue due to those assets.

Water Resources
Property within 50 feet of a body of water has a 21.5% property value increase.

Trail/Path Network
Property within a half-mile to a mile of trails has a 6.3% property value increase.

Natural Areas/Open Space
Property within 50 feet of recreational lands has a 3.1% property value increase.

The Land Policy Institute (www.landpolicy.msu.edu) provides science-based information to inform policy-making at the state and local level.

Environmental Benefits
- Provides habitat and biodiversity
- Reduces air, noise, and water pollution
- Safeguards natural and historic assets
- Manages stormwater
- Helps mitigate the effects of climate change

Social Benefits
- Helps to build a sense of place
- Provides outdoor learning environments
- Creates recreational opportunities
- Improves health and wellness

Economic Benefits
- Supports business attraction
- Helps to increase and maintain property values
- Provides free services (water filtration, groundwater recharging, stormwater control)
- Improves local and regional tourism

Our Roots Run Deep…
Over Thirty Years of Natural Resource Identification & Preservation

1974 — The Model Environmental Ordinance to Protect Woodlands provides language for local community planning and zoning documents.

1980 — Conserve Oakland County's Natural Resources looks at ways to conserve natural resources through community land use planning.

1987 — Identifying Our Natural Heritage explores and identifies Oakland County's existing, intact natural areas that contain high quality, relatively undisturbed natural communities.

2000 — The Shiawassee & Huron Headwaters Resource Preservation Project delineates significant natural resource systems and focuses on planning related strategies to protect the identified resource systems.

2002 — The 2002 Oakland County Potential Conservation/Natural Areas Report identifies and ranks potential natural areas in Oakland County.

2004 — The 2004 Oakland County Potential Conservation/Natural Areas Report is an update to the 2002 document, and it also identifies and ranks potential natural areas in Oakland County.

2007 — Planning for Green River Corridors is designed as a guide for community leaders and stakeholders to identify the resources associated with riparian areas and maximize those resources as community assets.

2009 — The Oakland County Green Infrastructure Vision highlights the network of connected open space and the associated benefits in Oakland County.

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connecting communities   **natural networks**

Multi-Scale Approach

Using a multi-scale approach to Green Infrastructure planning helps to create a meaningful context from which to plan and implement a variety of conservation related projects. Scale allows for the consideration of green infrastructure to encompass natural assets of different sizes, ranging from backyard rain gardens to intact forests. By linking local plans to the overall County Vision, we help support the integrity of the larger resource network and create opportunities for coordination between conservation efforts.

The County's Vision is intended to not only provide a basis for the overall interconnected system of open spaces and natural areas, but to encourage and support the integration of best land management practices into the local project design.

Examples of various levels of detail and scale can be described as:

- **Project Scale** (highly specific) Examples include: green buildings, rain gardens, and natural landscaping
- **Community Scale** (specific) Examples include: conservation developments, parks, and local zoning ordinances
- **Landscape Scale** (general) Examples include: an interconnected network of open spaces, natural areas, and waterways

Green Infrastructure actions should span multiple scales, but it's at the local level where most of the on-the-ground implementation takes place.

Commerce Work Session

The key to a successful, comprehensive Green Infrastructure approach is looking for multi-scale opportunities. From protecting large blocks of high quality natural areas to tending an urban garden, all contribute to the overall Vision and will ultimately help make it a reality.

Natural Area Meeting

Natural Area Advisory Group

Formed in 2004, the Oakland County Natural Area Advisory Group brings together a variety of organizations and individuals interested in advancing Green Infrastructure efforts throughout Oakland County. The Natural Area Advisory Group also played a major role in developing the Green Infrastructure process and guiding the countywide visioning effort.

Conservation approaches that focus on individual pieces of land without considering surrounding landscapes are limiting their potential success. Conservation efforts can be maximized by being proactive in the planning process and taking advantage of potential partnerships. The Natural Area Advisory Group meetings provide an excellent opportunity to highlight a multitude of potential land and partnership opportunities that reach far beyond the actual project site. Meetings are held quarterly and are open to anyone interested in sharing, learning, and collaborating on various conservation topics related to multi-level Green Infrastructure efforts.

Vision
To become an informed, coordinated, collaborative body that adds value to preservation efforts that contribute to Oakland County's Green Infrastructure.

Mission
To collaborate, coordinate, and support initiatives that preserve natural lands and resources in order to enhance the quality of life for the residents of Oakland County.

Goals
1. Pursue establishing partnerships in both the public and private sector
2. Facilitate the development of a joint county conservation (Green Infrastructure) vision
3. Explore funding mechanisms

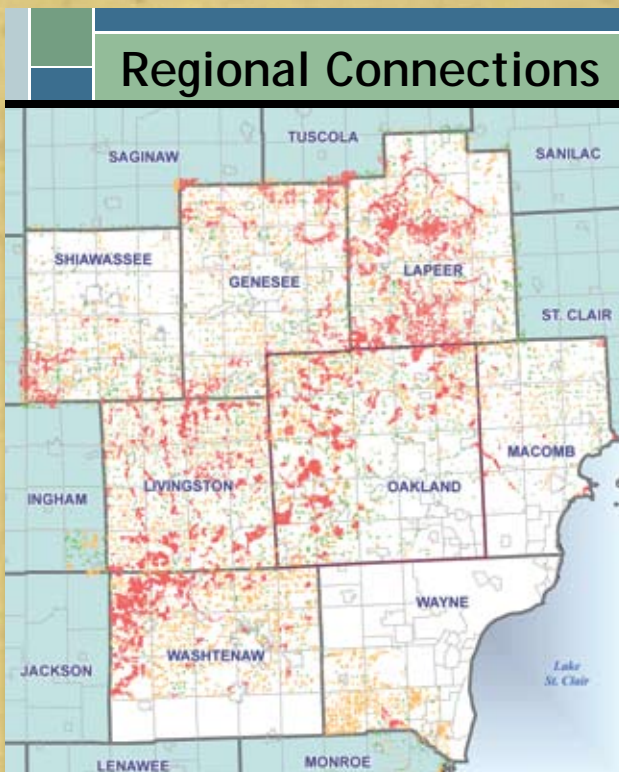**«regional focus»**   **«landscape focus»**   **site focus»**

Green Infrastructure efforts around the State of Michigan:
- Wild Link Conservation Resource Alliance
- West Michigan Strategic Alliance
- Growing Greener in Southwest Michigan
- Saginaw Bay Greenways Collaborative
- Greening Mid-Michigan
- Genesee, Lapeer, & Shiawassee Green Links
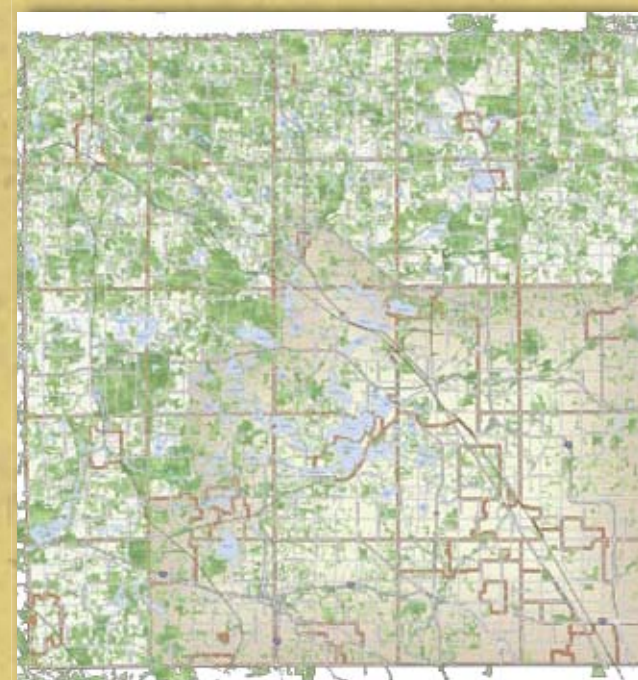- Oakland County Green Infrastructure Vision
- Macomb County

Statewide Efforts

Regional Connections

Many organizations within southeastern Michigan have identified potential natural areas based on the Michigan Natural Features Inventory (MNFI) model. The MNFI is an organization that maintains a continuously updated database of Michigan's endangered, threatened, or special concern plant and animal species, natural communities, and other natural features.

Oakland County's collaborative community-based Green Infrastructure Vision:
- acts as the foundation for an integrated conservation network
- builds on individual community efforts
- promotes collaboration
- helps to sustain our cities, townships, and villages

Local Opportunities
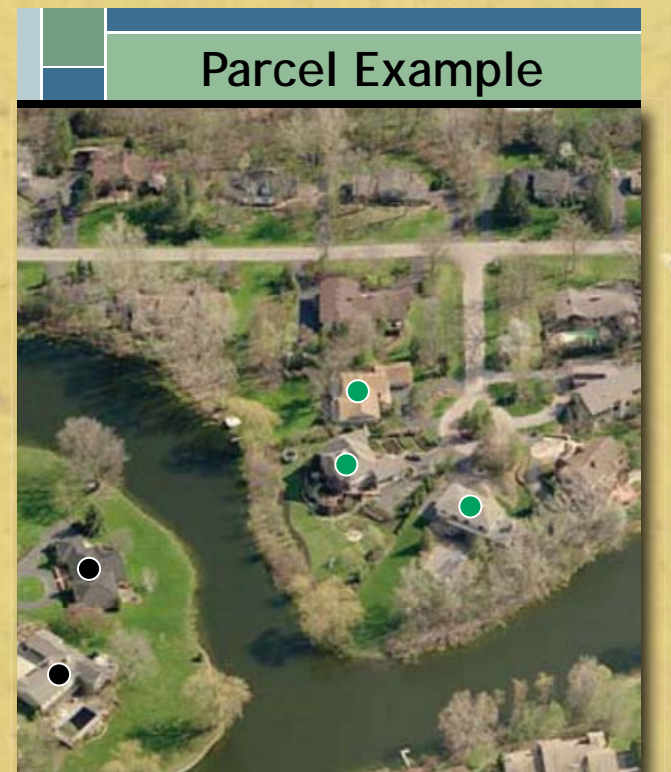

Detailed local scale Green Infrastructure maps:
- show location of hubs, sites, links, restoration areas, and special places
- build on existing local efforts
- highlight connected open space extending beyond community boundaries
- place local efforts into a larger context

County Vision

Green Infrastructure components in the urban landscape can include:
- Trail Connections
- Green Infrastructure Links
- Rain Garden
- Green Building
- Stream Buffer
- Native Landscaping
- Restoration Opportunities

Urban Example

Parcel Example

A community can create buffer requirements in the local zoning ordinance to help stabilize and protect river banks and lake shores.
- Homes built in the 1960s did not include a vegetated buffer at the water's edge
- Homes built in the 2000s incorporated a vegetated buffer

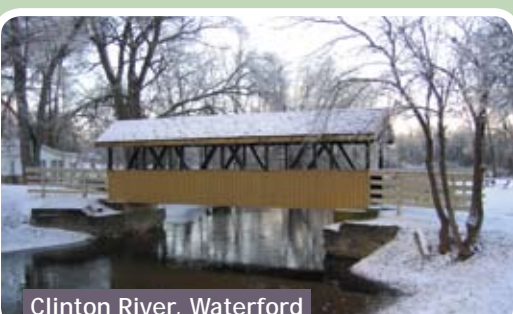**built from the bottom up**   **based on science**

Independence Work Session

Waterford Oaks County Park

Kresge Foundation, Troy

Clinton River, Waterford

Green Infrastructure Vision
Oakland County, Michigan
Preserving Our Natural Legacy

Green Infrastructure is an interconnected network of open spaces, natural areas, and waterways. The main focuses are on conservation values, the services provided by natural ecosystems, and integrating them into the built environment. Not all Green Infrastructure projects have the same goals and each project may include a variety of land types containing a mixture of ecological values. If you live, work, or play within Oakland County, you are a stakeholder when it comes to Green Infrastructure. From saving money, adding recreational opportunities, attracting businesses, and providing wildlife habitat, Green Infrastructure creates a framework for sustaining a wide-ranging quality of life.

Rose Oaks County Park

For more information, call (248) 858-5447

Oakland County is blessed with an abundance of healthy and unique natural resources. This natural advantage contributes to the environmental and economic quality of life for our residents and businesses. Our Green Infrastructure Vision was created to recognize opportunities for people to connect to the land through trails, parks, and waterways. Through planning, we can help decrease the costs of public infrastructure and public services such as stormwater management and water treatment systems. Our collective foresight and ability to work together on these complex planning issues help secure Oakland County's livability, prosperity, and continued status as a world-class business leader.

"I recognize the right and duty of this generation to develop and use the natural resources of our land; but I do not recognize the right to waste them, or to rob, by wasteful use, the generations that come after us."
–Theodore Roosevelt

Conservation Stewards Class

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Bald Mountain State Recreation Area