Chapter Three: The Umbrella of Protection for the Watershed

Photo 3–1: Students in Northeast Michigan work with community partners and the Great Lakes Stewardship Initiative on real-world watershed monitoring projects.

This section discusses the roles of individuals and the many organizations involved in the protection of water resources. Generally, individuals are property owners, businesses, and corporations. Organizations include units of government at the local level; agencies at the county or regional, state, and federal levels; and nonprofits. You may want to familiarize yourself with these roles as many also provide opportunities for help with the efforts of your community to protect water quality.

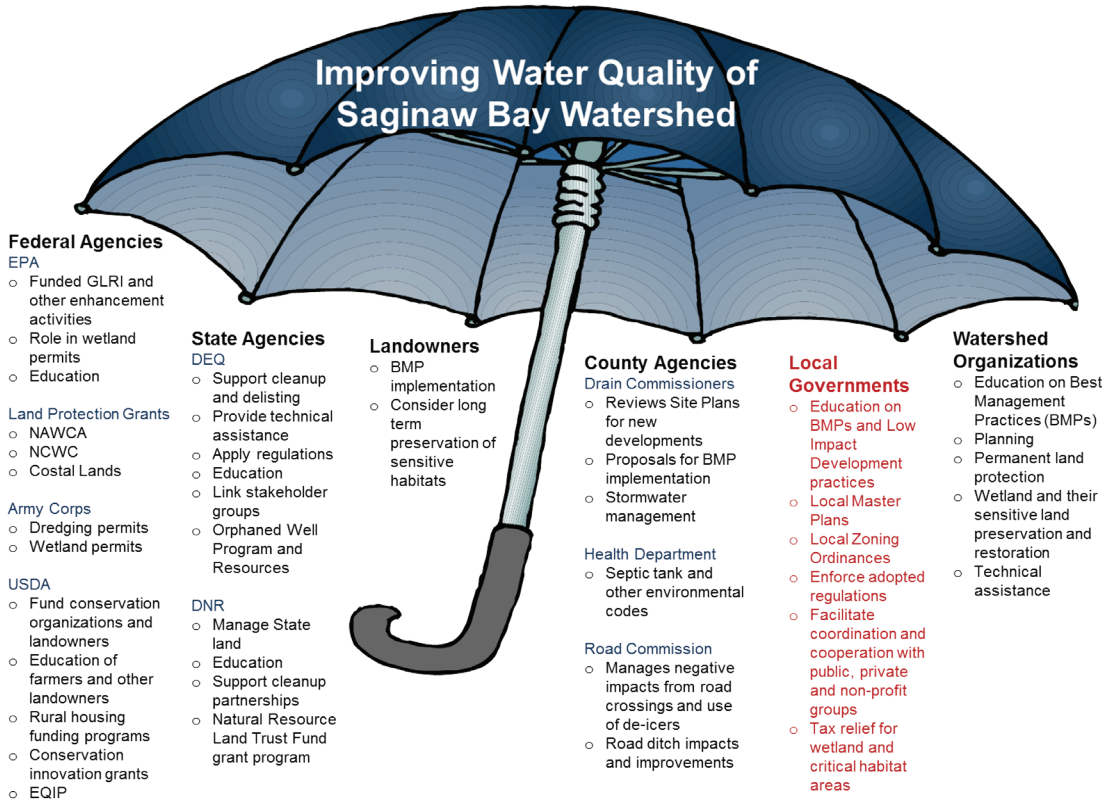
INTRODUCTION

This section discusses the roles of individuals and the many organizations involved in the protection of water resources. Generally, individuals are property owners, businesses, and corporations. Organizations include units of government at the local level; agencies at the county or regional, state, and federal levels; and nonprofits. You may want to familiarize yourself with these roles as many also provide opportunities for help with the efforts of your community to protect water quality. Figure 3–1 illustrates many of these entities and the key roles they play.

ROLE OF PROPERTY OWNERS AND BUSINESSES

Seventy percent of the land in the United States is privately owned, making stewardship by private landowners absolutely critical to the health of our nation's environment (NRCS website, 2011). What property owners do on the land is closely tied to whether nearby waterbodies and groundwater are healthy enough for people to drink, to swim in, to fish from, and to use for other purposes. Thus, the activities of businesses, property owners,

Figure 3-1: Individuals and Organizations with the Capacity to Improve Water Quality



Source: Planning & Zoning Center, Land Policy Institute, Michigan State University.

organizations, and citizens individually, as stakeholders, and as public entities affect the quality of their water. Recognizing this relationship between land use activities and water quality, people have given government some power to regulate those activities in order to protect water quality and prevent water pollution. But there is much property owners can do on their own without waiting for the government to act.

Best Management Practices Implementation

Property owners can apply best management practices (BMPs) to protect the quality of water that collects on their property and the water that flows off into the community. The BMPs include many different techniques for filtering pollutants from stormwater runoff, for reducing the force of stormwater runoff as it flows across the ground or in local drains and streams, for preventing bacteria and chemical contaminates from entering the water system, and other protective approaches. These are discussed in more detail in Chapter 4, and information about BMPs are available from many of the resources listed in this guidebook.

Long-Term Preservation of Sensitive Habitats

Certain landscapes, such as large wetlands, steep slopes, and river and lake shores, are especially valuable as natural areas and they benefit society. Some, such as wetlands and shorelands, produce a rich variety of plants and animals that support tourism, hunting, and fishing economies. Steep slopes are subject to erosion and collapse, which runs up the bill for communities to dredge sediment or repair

Photo 3–2: A natural shoreline can contribute to the quality of Michigan scenery.

collapsed infrastructure, homes, and businesses. Wetlands and floodplains store floodwaters, helping reduce or eliminate flood damage to communities. Communities and individual property owners benefit from preserving these areas. Long-term preservation often comes in the form of conservation easements. These agreements run with the land and are often secured through land conservancies, like the Saginaw Basin Land Conservancy.

Where a Property Owner Can Go for Help

The property owner has a many places to go for help. These include nonprofit conservation organizations, local government, county and state agencies, and some branches of federal agencies. A list of agencies in Michigan, including regional, district, and central offices serving the Saginaw Basin is included in a separate directory, which can be accessed at:

http://www.landpolicy.msu.edu/modules.php?name=Documents&op=viewlive&sp_id=1825.

A discussion of the roles of some of these agencies that help provide the umbrella of protection make up the remainder of this chapter.

THE ROLE OF CONSERVATION ORGANIZATIONS, OTHER COMMUNITY ORGANIZATIONS, FOUNDATIONS, AND EDUCATIONAL INSTITUTIONS

Nonprofit organizations, foundations, and educational institutions have an important role to play in the protection of water quality. Although some are property owners, or owners of habitat protection easements, most are in a position between the property owner and regulatory agencies. These organizations include water quality nonprofits like the Partnership for the Saginaw Bay Watershed, the Saginaw Bay Coastal Initiative, and the Saginaw Bay Watershed Initiative Network (WIN); and conservation organizations like hunt clubs, local chapters of the Audubon Society, and land conservancies. Farm and forest organizations, soil organizations, and foundations support conservation of sensitive lands with unique natural features. Among the roles of these organizations are the following.

Education on Best Management Practices

Educational institutions are often viewed as independent and, thus, credible sources of educational materials and programs on water resource protection. These include websites, printed materials, not-for-credit and for-credit courses and certificate programs, workshops, demonstrations, and hands-on training

programs in subjects as diverse as wetland plant identification, water quality testing, and stream bank restoration. Most of the organizations in this category engage in stakeholder education.

Planning

Nonprofits can be helpful to communities in supporting the development of community Master Plans, and in planning for special projects to protect water quality. They often have specialists trained in the topic area who can help guide the community and individuals in the best approaches to water quality protection.

Permanent Land Protection

A number of conservation organizations and foundations engage in purchasing sensitive lands to protect habitat and water quality, or in purchasing the development rights or conservation easement to those lands. Generally with such a purchase, the conservation organization or foundation enters into an agreement about what level of public access there will be on the land; what level of development will be permitted, if any at all; how the land will be maintained in the future; and who will do the maintenance.

Wetland Preservation and Restoration

Some nonprofit organizations, such as The Nature Conservancy, purchase wetlands or other sensitive lands in order to help protect them. Often such groups serve as a holding agent until other groups, local communities, or other governmental agencies can complete a final purchase and management plan. These plans often focus on short-term restoration activities, as well as long-term preservation.

Technical Assistance

Many nonprofit or educational institutions can provide technical assistance to property owners and local units of government regarding planning for and managing lands for water quality protection.

THE ROLE OF COUNTY, TOWNSHIP, CITY, AND VILLAGE PLANNING AND ZONING

As conflicting demand for use and consumption of our natural resources has increased, so too has the need for regulatory intervention to protect them. It is clear that each level of government has an interest and legal responsibility to preserve Michigan's natural resources and protect its environment. However, it is equally clear that no single level of government can do it alone. In keeping with Michigan's tradition of Home Rule, local governments are increasingly being asked to take the reins to fill in regulatory gaps on many natural resource and environmental protection issues.

There is a long-standing statutory basis for this authority. As early as the City and Village Zoning Act of 1921, local governments have had the authority to implement local regulations that will foster the health and well-being of their communities. Language added to this statute in 1978 *requires* local officials to adopt zoning based on a plan, which serves to "conserve natural resources and energy."[2] It also permits adoption of, "land development regulations and districts, which apply only to land areas and activities, which are involved in a special program to achieve land management objectives and avert or solve specific land use problems."[3] These provisions were retained with the consolidation of city, village, township, and county zoning statutes in 2006.

Current statutory authority for municipal planning and zoning is derived from two laws: the Michigan Zoning Enabling Act (P.A. 110 of 2006) and the Michigan Planning Enabling Act (P.A. 33 of 2008). For communities expecting to engage in the planning process and enforce zoning throughout their jurisdiction, provisions from these State laws must be met in order to achieve authority under the Acts. Statutory compliance under the Enabling Acts is very important, as being "out" of compliance may put into question the legitimacy of the municipality's authority to engage in Zoning Ordinance enforcement. In the worst case scenario, an indefensible ordinance may be struck down in court and leave the municipality with a heavy, yet altogether avoidable legal burden.

For local officials dealing with many permit applicants, heated zoning debates and a multitude of State and federal agencies, life is not always a picnic. However, the different levels of government in the context of environmental protection policy interact similarly to an organized picnic where everyone is supposed

2. City and Village Zoning Act, Act 207, 1921.

3. Section 3 of Township, City, and City-Village Zoning Enabling Acts. Public Acts 184, 285, and 207, as amended.

to bring something. In this instance, the federal government brings the blanket, serving as part of the regulatory foundation on water quality for state and local governments. The State adds to that foundation by providing the necessary utensils. But a critical component, the food, is provided by localities. They complete the scenario by deciding what everyone will eat. As is true for environmental policy, local governments determine how much effort they put into the end result. They can invest in making something really delicious for everyone, or do the required minimum by simply bringing a bag of chips. Although it may be possible to compensate for deficiencies initially, without coordination or contributions among all the participants in either scenario, the success of the real event—environmental protection—is threatened.

Note that generally, local government regulation is limited to new uses and new development. This is very important, because existing structures and uses, like agriculture cannot be retroactively regulated. The principal of nonconforming uses protects them.

Local units of government can also provide education on BMPs and LID practices, and include goals, objectives, and strategies for them in local Master Plans, local Zoning Ordinances, and should facilitate coordination and cooperation with private and nonprofit groups, as well as with federal and state agencies.

It is also the responsibility of local governments to enforce adopted regulations.

COUNTY AGENCIES

One of the primary county agencies with the capacity to work to protect water quality in rural areas is the Drain Commission, through the County Drain Commissioner. County Health Departments, or multi-county Health Departments also play a role, but are discussed later under State agencies.

Drain Commissioners

The County Drain Commissioner (DC) is an elected official who has jurisdiction over all established county drains. He/she performs the duties set forth in the Drain Code, which is to administer the establishment, construction, maintenance, and improvement of county drains. The DC is responsible for the assessment of the costs of administering county drains. Drain projects seek to prevent flooding, decrease soil erosion and the sedimentation of drains, and provide better drainage for agricultural and developed lands. A "drain" may include roadside ditches, agricultural drains, tiling, and other enclosed systems, such as some creeks, rivers, and lakes.

How Does a Drain Project Begin? Drain Commissioners respond to requests by property owners for assistance with a problem associated with water. The DC can only do work on officially established drains, so solving a water-related problem may require a first step of establishing an official drainage district. A drainage district is the area of land that benefits from the drain.

For work on an existing drain, a petition must be signed by at least five property owners whose land is located in the drainage district. These property owners would also be liable to be assessed for a portion of the project costs. A petition can be filed by property owners in the Drainage District; a township, city, or village; the County Road Commission; or the Michigan Department of Transportation. A Board of Determination rules on the necessity of the project.

For a new drain, an application to establish a drainage district must be signed by at least 10 property owners in the township—five of whom must own land in the drainage district. An engineer determines the area that would be drained by and receive benefit from the new drain. If determined practical, the DC then formally establishes the drainage district boundary. A separate petition is needed to locate, establish, and construct a new drain, and which must be signed by 50 percent of the owners whose property would include the new drain.

If the Board of Determination determines a drain project is necessary, the Drain Commissioner decides how to solve the problem. He may contract out various parts of the project, including engineering analysis, project management, and construction.

Land owners and municipalities within a given Drainage District share the cost for drain projects within the district. This includes townships, cities, and villages, because of the public health benefits. County Road

Commissions may also share the costs due to benefits to county roads. If the project is large, it may be financed by the issuance of notes or bonds, with the assessments spread out over many years.

The Michigan Drain Code allows the DC to expend, without petition, up to $5,000 per mile per drain.

Drain Commissioners can also:

- Review site plans for new developments.
- Review proposals for BMP implementation.
- Review stormwater management plans.
- Coordinate with the Health Department on septic tank and other environmental codes.
- Coordinate with the Road Commission.
- Manage negative impacts from road crossings and use of de-icers.

Source: **Citizen Guide to the Drain Code**, Ottawa County Drain Commissioner's Office.

THE ROLES OF FEDERAL GOVERNMENT

The federal government sets the stage for contemporary national air, water, and related environmental standards with the adoption of the National Environmental Policy Act (NEPA) of 1969. The Act was the first federal legislation to identify an environmental protocol to follow. The U.S. Environmental Protection Agency (EPA) was created as the regulatory authority to oversee the provisions of the Act. The purposes of NEPA are to:

- Declare a national policy that will encourage productive and enjoyable harmony between humans and the environment;
- Promote efforts that will prevent or eliminate damage to the environment and biosphere, and stimulate the health and welfare of humans;
- Enrich the understanding of the ecological systems and natural resources important to the Nation.

Source: **The National Environmental Policy Act of 1969**, as amended. (Pub. L. 91–190, 42 U.S.C. 4321–4347, January 1, 1970, as amended by Pub. L. 94–52, July 3, 1975, Pub. L. 94–83, August 9, 1975, and Pub. L. 97–258, § 4(b), Sept. 13, 1982).

Throughout the 1970's, more sweeping federal legislation was adopted that set standards for clean water, clean air, drinking water, industrial pollutants, and pesticide use. As a result, states were required to adopt language protecting air, water, and land resources that were at least as stringent as the federal standards.

Today, the federal government is linked to land use policy primarily through the development of quantifiable standards for protecting ecosystem health, such as water quality monitoring. Federal agencies also provide educational and technical assistance, such as outreach programs and data sharing. Additionally, the federal government maintains grant programs, like those administered by the Michigan Coastal Management Program that, in turn, provide funding opportunities for local initiatives. With the exception of management of federal lands and buildings, military bases, and nuclear power plants, the federal government does not usually have jurisdiction over local land use planning or zoning decisions.

U.S. Environmental Protection Agency

The mission of the U.S. Environmental Protection Agency is to protect human health and the environment. The EPA's purpose is to ensure that:

- All Americans are protected from significant risks to human health and the environment where they live, learn, and work.
- National efforts to reduce environmental risk are based on the best available scientific information.
- Federal laws protecting human health and the environment are enforced fairly and effectively.
- Environmental protection is an integral consideration in U.S. policies concerning natural resources, human

health, economic growth, energy, transportation, agriculture, industry, and international trade; and these factors are similarly considered in establishing environmental policy.

- All parts of society—communities, individuals, businesses, and state, local, and tribal governments—have access to accurate information sufficient to effectively participate in managing human health and environmental risks.
- Environmental protection contributes to making our communities and ecosystems diverse, sustainable, and economically productive.
- The United States plays a leadership role in working with other nations to protect the global environment.

The EPA Develops and Enforces Environmental Protection Regulations

When Congress writes an environmental law, the EPA implements it by writing regulations. Often, the EPA sets national standards that states and tribes enforce through their own regulations. If they fail to meet the national standards, the EPA can help them. The EPA also enforces its regulations, and helps companies understand the requirements.

Role in Wetland Permits

The Clean Water Act is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States. Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. In Michigan, wetland permitting authority is delegated by the EPA to the Michigan Department of Environmental Quality (MDEQ).

Role in Water Quality Protection

The EPA has a number of programs to protect or restore water quality, and that are working to protect or clean up water in Michigan. These include the following:

- Great Lakes Restoration Initiative, which includes monitoring polluted Great Lakes Areas of Concern and funding to help clean up AOC sites and the polluted waters flowing into the Great Lakes that contribute to those sites not attaining water quality standards. Nearly half of the EPA budget goes into grants to state environmental programs, nonprofits, educational institutions, and others. They use the money for a wide variety of projects, from scientific studies that help us make decisions to community cleanups and habitat restoration.
- Nonpoint Source Pollution Discharge Elimination System (Clean Water Act Section 402), which requires states to eliminate pollution from nonpoint sources to public waters. This program is administered in Michigan by the MDEQ with federal oversight.
- Partnerships with other federal agencies and tribes to protect water quality by working to make agricultural, transportation, and construction activities use BMPs and LID practices that protect water quality.

Education

The EPA provides a variety of educational programs, including programs for youth and schools, and training programs for professionals involved in air quality, pollutant clean-up, and watersheds. Many of these programs are online and self-paced. The website for the watershed training program is at: **http://water.epa.gov/learn/training/wacademy/index.cfm**.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (ACOE) has been involved in regulating certain activities in the nation's waters since 1890. Until 1968, the primary thrust of the Corps' regulatory program was the protection of navigation. As a result of several new laws and judicial decisions, the program has evolved to one involving the consideration of the full public interest by balancing favorable impacts against detrimental impacts. This is known as the "public interest

review." The program is one that reflects the national concerns for both the protection and utilization of important resources. The ACOE is involved in regulation and permitting of:

- Dams or dikes in navigable waters of the United States (Part 321);
- Other structures or work, including excavation, dredging, and/or disposal activities, in navigable waters of the United States (Part 322);
- Activities that alter or modify the course, condition, location, or capacity of a navigable water of the United States (Part 322);
- Construction of artificial islands, installations, and other devices on the outer continental shelf (Part 322);
- Discharges of dredged or fill material into waters of the United States (Part 323), and the regulation and permitting of other activities the ACOE deems it can administer through a national, "general permit;" and
- Protection of coastal wetlands through wetland permits (Section 404 of Clean Water Act).

U.S. Department of Agriculture

In rural areas particularly, the U.S. Department of Agriculture (USDA) can support local efforts to protect water quality. The mission of the USDA is to provide leadership on food, agriculture, natural resources, and related issues based on sound public policy, the best available science, and efficient management.

The USDA provides programming to protect water quality. Among its programs related to water are the Natural Resources Conservation Service, the Forest Service, and the Water and Environmental programs (WEP). The NRCS's National Water Management Center serves as the production support center and provides leadership, direct assistance, information, and technology on water-related issues for natural resources conservation. Water is one of the most important natural resources flowing from forests. The Forest Service manages the largest single source of water in the U.S., with about one-fifth originating from 193 million acres of land. Additionally, the USDA's Water and Environmental Programs provide loans, grants, and loan guarantees for drinking water, sanitary sewer, solid waste, and storm drainage facilities in rural areas, and cities and towns of 10,000 or less. Public bodies, nonprofit organizations, and recognized Indian tribes may qualify for assistance. The WEP also makes grants to nonprofit organizations to provide technical assistance and training to assist rural communities with their water, wastewater, and solid waste problems.

Photo 3–3: A number of agencies work to keep our waters safe.

U.S. Natural Resources Conservation Service

In this guidebook, we focus mainly on the U.S. Natural Resources Conservation Service (NRCS) as one of the most useful arms of the USDA in helping protect water quality in rural areas. The NRCS is a division of the USDA. The NRCS science and technology experts from many disciplines are involved in helping landowners conserve land, water, and other natural resources in efficient, smart, and sustainable ways. The NRCS works directly with landowners, providing technical assistance and conservation planning. According to the USDA, "NRCS's natural resources conservation programs help people reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters. Public benefits include enhanced natural resources that help sustain agricultural productivity

and environmental quality, while supporting continued economic development, recreation, and scenic beauty" (NRCS website, 2011).

The NRCS has field offices at USDA Service Centers in nearly every county in the nation. The local presence gives NRCS employees an understanding of local resource concerns and challenges. The NRCS also works through partnerships, including individual farmers, landowners, local conservation districts, government agencies, tribes, volunteers, and other committed natural resource groups.

The NRCS has signed an interagency agreement with EPA for approximately $34 million to fund GLRI conservation work in priority watersheds within Great Lakes states. The purpose of the agreement is to provide funding to NRCS to implement priority programs, projects, and activities to protect, restore, and maintain the Great Lakes ecosystem, as identified in the GLRI Action Plan. Among the NRCS priority programs are the following:

"Conservation Technical Assistance Program

Conservation technical assistance is the help NRCS and its partners provide to land users to address opportunities, concerns, and problems related to the use of natural resources and to help land users make sound natural resource management decisions on private, tribal, and other non-federal lands. This assistance can help land users:

- Maintain and improve private lands and their management;
- Implement better land management technologies;
- Protect and improve water quality and quantity;
- Maintain and improve wildlife and fish habitat;
- Enhance recreational opportunities on their land;
- Maintain and improve the aesthetic character of private land;
- Explore opportunities to diversify agricultural operations; and
- Develop and apply sustainable agricultural systems.

This assistance may be in the form of resource assessment, best management practice design, resource monitoring, or follow-up of installed practices. Although the Conservation Technical Assistance Program (CTAP) does not include financial or cost-share assistance, clients may develop conservation plans, which may serve as a springboard for those interested in participating in USDA financial assistance programs. The CTAP planning can also serve as a door to financial assistance and conservation easement programs provided by other federal, state, and local programs."

Emergency Watershed Protection Program Floodplain Easement

Section 382 of the Federal Agriculture Improvement and Reform Act of 1996, Public Law 104–127, amended the Emergency Watershed Protection Program (EWPP) to provide for the purchase of floodplain easements as an emergency measure. Since 1996, the NRCS has purchased floodplain easements on lands that qualify for EWPP assistance. Floodplain easements restore, protect, maintain, and enhance the functions of the floodplain; conserve natural values, including fish and wildlife habitat, water quality, flood water retention, groundwater recharge, and open space; reduce long-term federal disaster assistance; and safeguard lives and property from floods, drought, and the products of erosion.

The NRCS may purchase EWPP easements on any floodplain lands that have been impaired within the last 12 months or that have a history of repeated flooding (i.e., flooded at least two times during the past 10 years).

Under the floodplain easement option, a landowner voluntarily offers to sell to the NRCS a permanent conservation easement that provides the NRCS with

the full authority to restore and enhance the floodplain's functions and values. In exchange, a landowner receives the lowest of the three values established for the NCRS Wetlands Reserve Program as an easement payment:

- A value based on a market analysis;
- A geographic rate established by the NRCS State Conservationist; or
- The landowner offer.

The easement provides the NRCS with the authority to fully restore and enhance the floodplain's functions and values to natural conditions to the greatest extent practicable. The NRCS may pay up to 100 percent of the restoration costs. The NRCS actively restores the natural features and characteristics of the floodplain through re-creating the topographic diversity, increasing the duration of inundation and saturation, and providing for the re-establishment of native vegetation. Landowners retain several rights to the property, including:

- Quiet enjoyment;
- The right to control public access; and
- The right to undeveloped recreational use, such as hunting and fishing.

At any time, a landowner may obtain authorization from the NRCS to engage in other activities, provided that the NRCS determines it will further the protection and enhancement of the easement's floodplain functions and values. These compatible uses may include managed timber harvest, periodic haying, or grazing. The NRCS determines the amount, method, timing, intensity, and duration of any compatible use that might be authorized. While a landowner can realize economic returns from an activity allowed for on the easement area, a landowner is not assured of any specific level or frequency of such use, and the authorization does not vest any right of any kind to the landowner.

Environmental Quality Incentives Program

The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial and technical assistance to agricultural producers through contracts up to a maximum term of 10 years in length. These contracts provide financial assistance to help plan and implement conservation practices that address natural resource concerns, and for opportunities to improve soil, water, plant, animal, air, and related resources on agricultural land and non-industrial private forestland. In addition, a purpose of EQIP is to help producers meet federal, state, tribal, and local environmental regulations.

Owners of land in agricultural or forest production, or persons who are engaged in livestock, agricultural, or forest production on eligible land, and that have a natural resource concern on the land may participate in EQIP.

The EQIP provides financial assistance payments to eligible producers based on a portion of the average cost associated with practice implementation. Additional payments may be available to help producers develop conservation plans that are required to obtain financial assistance.

Historically underserved producers (limited resource farmers/ranchers, beginning farmers/ranchers, socially disadvantaged producers, tribes) may be eligible for a higher practice payment rate for the implementation for conservation practices and conservation plans.

Producers may use a certified Technical Service Provider (TSP) for technical assistance needed for certain eligible activities, services, and the development of conservation plans. Historically underserved producers may also be eligible for advance payments up to 30 percent of the cost needed to purchase materials or contracting services to begin installation of approved conservation practices.

The NRCS works with the producer to develop a plan of operations that:

- Identifies the appropriate conservation practice or measures needed to address identified natural resource concerns.
- Implements conservation practices and activities according to an EQIP plan of operations developed in conjunction with the producer that identifies the appropriate conservation practice or measures needed to address identified natural resource concerns. The practices are subject to NRCS technical standards adapted for local conditions.

Participants may not receive, directly or indirectly, payments that, in the aggregate, exceed $300,000 for all EQIP contracts entered into during any six-year period. Participants whose projects the NRCS determines to have special environmental significance may petition the NRCS Chief for the payment limitation to be waived to a maximum of $450,000. Additional payment limitations apply to producers enrolled in the EQIP Organic Initiative.

Farm and Ranch Lands Protection Program

The Farm and Ranch Land Protection Program (FRPP) provides matching funds to help purchase development rights to keep productive farm and ranchland in agricultural uses. Working through existing programs, the USDA partners with state, tribal, or local governments and non-governmental organizations to acquire conservation easements or other interests in land from landowners. The USDA provides up to 50 percent of the fair market easement value of the conservation easement.

To qualify, farmland must:

- Be part of a pending offer from a state, tribe, or local farmland protection program;
- Be privately owned;
- Have a conservation plan for highly erodible land;
- Be large enough to sustain agricultural production;
- Be accessible to markets for what the land produces;
- Have adequate infrastructure and agricultural support services;
- Have surrounding parcels of land that can support long-term agricultural production; and
- Depending on funding availability, proposals must be submitted by the eligible entities to the appropriate NRCS State Office during the application window.

Wildlife Habitat Incentives Program

The Wildlife Habitat Incentive Program (WHIP) is a voluntary program for conservation-minded landowners who want to develop and improve wildlife habitat on agricultural land, nonindustrial private forest land, and tribal land.

The Food, Conservation, and Energy Act of 2008 reauthorized WHIP as a voluntary approach to improving wildlife habitat in our nation. The NRCS administers WHIP to provide both technical assistance and financial assistance to establish and improve fish and wildlife habitat. The WHIP cost-share agreements between the NRCS and the participant generally last from one year after the last conservation practice is implemented, but not more than 10 years from the date the agreement is signed.

In order to provide direction to the state and local levels for implementing WHIP to achieve its objective, the NRCS established the following national priorities [for its 2011 program—other national priorities may be set in subsequent years]:

- Promote the restoration of declining or important native fish and wildlife habitats.
- Protect, restore, develop, or enhance fish and wildlife habitat to benefit at-risk species.

- Reduce the impacts of invasive species on fish and wildlife habitats.
- Protect, restore, develop, or enhance declining or important aquatic wildlife species' habitats.
- Protect, restore, develop, or enhance important migration and other movement corridors for wildlife.

The agreement also supports the participation of the NRCS staff in Lakewide Management Planning activities.

STATE AGENCIES

There are several State agencies in Michigan that have programs aimed at helping protect water quality, and that work with local units of government and property owners. These include the Michigan Department of Environmental Quality, the Michigan Department of Natural Resources, the Michigan Department of Community Health, the Michigan Department of Agriculture and Rural Development, and the Michigan Department of Transportation.

Prior to the National Environmental Protection Act of 1969, Michigan included environmental protection and natural resource management language in Article IV of the State Constitution. This provision serves as the basis for all of Michigan's subsequent environmental and natural resource management laws.

- **Section 52: Natural resources; conservation, pollution, impairment, destruction.** The conservation and development of the natural resources of the State are hereby declared to be of paramount public concern in the interest of the health, safety, and general welfare of the people. The legislature shall provide for the protection of the air, water, and other natural resources of the State from pollution, impairment, and destruction.

  Source: Sec. 52. History: Const. 1963, Art. IV, § 52, Eff. Jan. 1, 1964.

Michigan's primary environmental legislation is contained in the Michigan Natural Resources and Environmental Protection Act (NREPA), Public Act 451 of 1994, as amended. This statute codified hundreds of separate natural resources and environmental protection acts into a single act. Each "Section" or "Part" of the Act, has a different legislative history. As a result, each Part is written a bit differently, with different intended goals, and identifies different roles for local governments. Public Act 451 addresses shared natural resources, like air and water, sets minimum standards for environmental protection, and details State responsibilities to protect the air, water, and land from pollution, impairment, or destruction. The Act also defines the role of local governments in resource management. For the most part, local roles are voluntary and opportunities are slightly different depending on the resource.

Michigan Department of Environmental Quality

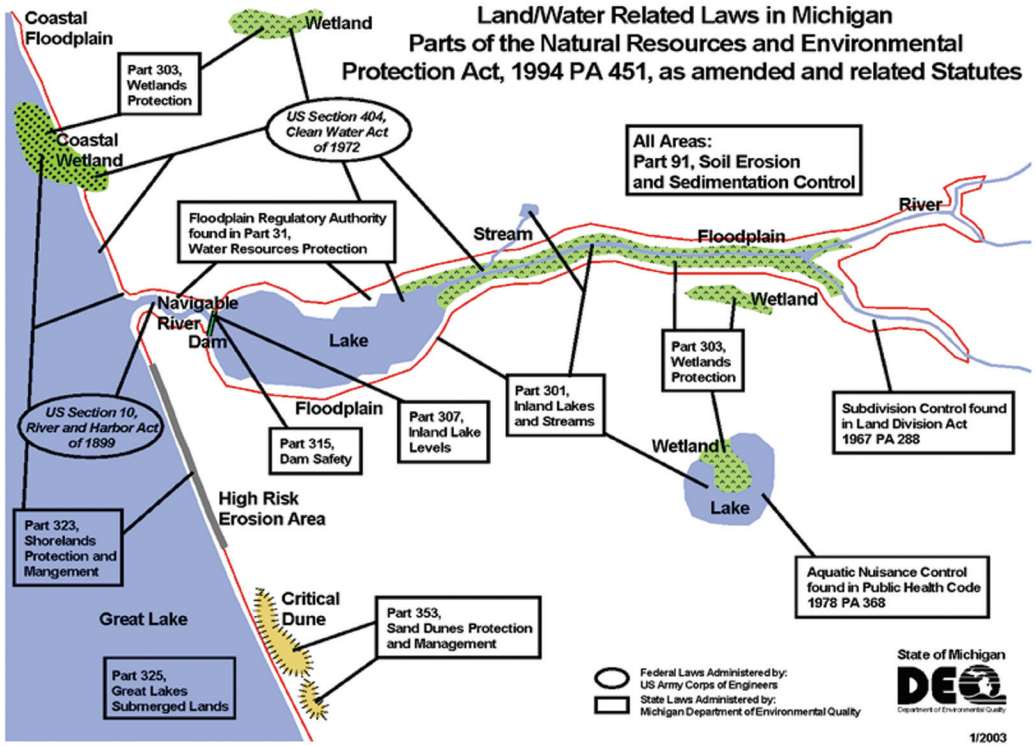
The Michigan Department of Environmental Quality (MDEQ) is the State agency that administers most of the provisions in P.A. 451.

Public Act 451 creates significant opportunities for localities to implement supplemental natural resource management techniques, but does not oversee land use planning at the local level. It is left to the discretion of each of Michigan's 1,800+ local units of government to determine how they will protect the environment through land use planning and local regulations. Therefore, each local government is responsible for helping protect Michigan's environment.

Figure 3–2 illustrates many of the natural features subject to P.A. 451 in Michigan. Notice that although specific features in the ecosystem require State oversight for land cover alteration, many of the areas connecting them do not. This level of land use oversight is left to the discretion of individual communities.

The MDEQ is a State agency dedicated to protecting and enhancing Michigan's environment and public health. According to its vision statement the MDEQ works to achieve an improved quality of life and a sustainable future. As a service to the public it administers programs and enforces laws that protect public health and promote the appropriate use of, limit the adverse effects on, and restore the quality of the environment. It preserves biologically diverse, rare, sensitive, or endangered

Figure 3-2: Land and Water Interface Issues



Source: "Filling the Gaps: Environmental Protection Options for Local Governments," 2nd ed, MDEQ.

plants, animals, and ecosystems through the identification, education, management, and public/private partnerships and initiatives. The MDEQ divisions directly dealing with water quality protection include the Office of the Great Lakes and the Water Resources Division.

The Office of the Great Lakes (OGL) was created by the Michigan Legislature in 1985 to be a one-stop shop for Great Lakes information and a unifying voice on Great Lakes issues. From protecting lake water levels, restoring contaminated areas, addressing the threat of aquatic invasive species, ensuring improving water quality, and supporting wise development of our coastal communities, the OGL is dedicated to the Great Lakes as a source of bounty for Michigan and the foundation of our future.

The Water Resources Division (WRD) was formed on July 26, 2010, from most of the former Water Bureau and the Land and Water Management Division. Its mission is to protect and monitor Michigan's waters—swimmable, fishable, fish safe to eat, and healthy aquatic ecosystems. The WRD has a number of tools to use to help protect water quality, which include the federal Clean Water Act and State statutes, Michigan water quality standards, permits, enforcement, monitoring, grants, and technical assistance.

Among its responsibilities the MDEQ administers:

- Permits for facilities proposing to discharge wastewater to surface waters or groundwaters.
- Enforcement actions where appropriate for noncompliance.
- Emergency response to spills to surface waters.
- Permit activities to control aquatic nuisance plants.
- Ambient water quality and biota monitoring.
- Preparation of plans for water bodies so they meet water quality standards.
- Programs to address nonpoint pollutants (unregulated sources, such as small farms, small construction sites, failing septic systems, etc.) through grants and technical assistance.
- Submerged lands dredging and disposal.
- Nonpoint source pollution permits.

Michigan Department of Natural Resources

The Michigan Department of Natural Resources (MDNR) is committed to the conservation, protection, management, use, and enjoyment of the state's natural and cultural resources for current and future generations. It works on natural resource issues both on land and in the water. Among other priorities, it seeks to:

- Increase participation in outdoor recreation, and reverse the decline in hunting and fishing participation.
- Foster the growth of Michigan's natural resource-based economy.

The MDNR has management, education, and law enforcement programs dealing with fisheries, wildlife, parks and recreation, and forest, mineral, and fire management, each of which can have an effect on the quality of water. The MDNR supports cleanup partnerships with service organizations and youth groups. The MDNR also enforces laws pertaining to water quality.

Michigan Department of Community Health

Public Act 368 of 1978, established Michigan's public health code. It is administrated primarily by the Michigan Department of Community Health (MDCH).

The MDCH administers regulation of and examination of plans for swimming pools, bathing beaches, and sewer and water systems. It also provides for the certification of well-drillers and performs inspections of groundwater supply development or abandonment, and has the right of entry for inspection. The MDCH also makes rules on standards for development or abandonment of wells. The MDCH also permits local Health Departments to regulate public and private sewage treatment systems, including innovative or alternative systems, and develops rules for storage and disposal of medical wastes.

Michigan Department of Agriculture and Rural Development

The mission of the Michigan Department of Agriculture and Rural Development (MDARD) is to protect, promote, and preserve the food, agricultural, environmental, and economic interests of the people of Michigan. While it primarily helps the farm community produce food for society, it also helps farmers learn about, develop plans for, and—in some cases— receive certification for environmental and public health practices. These include a variety of Generally Accepted Agricultural and Management Practices (GAAMPs) dealing with water quality, such as nutrient management, waste management, soil erosion, and chemical and pesticide containment.

The Right to Farm Act (Act 93 of 1981) was passed to reduce the burden on farming operations where non-farm land uses come in conflict with farming operations, such as plowing, spraying, and harvesting. The Act permits farms to engage in agricultural activities that comply with GAAMPs, and precludes local units of government from passing laws that limit farming activities on farms.

Photo 3–4: Water views can be appreciated both from on land and on the water.

Michigan Agriculture Environmental Assurance Program

According to the MDARD, the Michigan Agriculture Environmental Assurance Program (MAEAP) is a voluntary, pro-active program designed by a coalition of farmers, agricultural commodity groups, State and federal agencies, and conservation and environmental groups to reduce producers' legal and environmental risks. It teaches effective land stewardship practices that comply with State and federal regulations, and shows producers how to identify and prevent agricultural pollution risks on their farms. Public Acts 1 and 2 of 2011, codify the MAEAP into law. The program encompasses three systems designed to help producers evaluate the environmental risks of their operation. Each system—livestock, farmstead,

and cropping—examines a different aspect of a farm, as each has a different environmental impact. Through each phase, producers will develop and implement economically feasible, effective, and environmentally sound pollution prevention practices. Within each system there are three phases that must be completed in order to become verified. These phases are:

- **Education:** involves farmer attendance at a qualified MAEAP educational session. Held across the state, these sessions introduce farmers to the MAEAP and update them on new and emerging regulations and opportunities affecting agriculture.
- **On-Farm Risk Assessment:** focuses on evaluating environmental risks and devising farm-specific and economically viable solutions. Each MAEAP system implements a unique risk assessment tool developed to address the environmental impacts of that system.
- **Third-Party Verification:** is where the MDARD verifies the farm after the requirements of Phase 1 and 2 are met, the State's GAAMPs are being followed, and the farm has implemented practices specific to system requirements. When verification requirements are successfully met, producers receive recognition for their accomplishments and access to incentives.

Photo 3–5: Good farming practice can both provide the food we need and protect the quality of our water.

Michigan Department of Transportation

The mission of the Michigan Department of Transportation (MDOT) is to provide the highest quality integrated transportation services for economic benefit and improved quality of life. The MDOT maintains over 10,000 miles of roads and their associated drainage systems. While this transportation network supports extensive commerce and travel, it also accumulates contaminants from vehicles, road construction, and maintenance. Common contaminants include sediment, oil, grease, and fertilizer. In response to this issue, the MDOT has developed a Storm Water Management Plan (SWMP). The SWMP is designed to enhance the way the MDOT does business so that stormwater pollution is reduced or eliminated. Solutions in the SWMP are as simple as good housekeeping, or as complex as building new stormwater management structures. Just as the agency is paying closer attention to its practices, the MDOT encourages residents to educate themselves and do the same.

A National Pollutant Discharge Elimination System (NPDES) Permit (No. MI0057364, hereinafter referred to as the Permit) was issued by the MDEQ for the MDOT-operated separate storm sewer systems throughout the State of Michigan. Procedures developed to comply with each of the six minimum measures stated in the Permit include the following:

- Education and outreach on stormwater impacts – Public Education Program.
- Public involvement/participation.
- Illicit Discharge Elimination Program.
- Post Construction Stormwater Management Program for new development and redevelopment projects.
- Construction stormwater runoff control that includes many of the low impact development techniques described in Chapter 4 of this Guidebook.
- Pollution prevention/good housekeeping for the MDOT operations.