Natural Resources

Summary

Wayne County is blessed with abundant natural resources (comprising 21 percent of the County) which help to define the rural landscape. As a result natural resources have been a major focus of the discussion and development of this Plan. This Element strives to conserve natural resources for use by future generations, as open space components, for resource production and to support recreation. The Land Use Plan specifically directs future development to Growth Areas as a means of conserving natural resources and protecting agriculture.

Planning Issues

*The following is an overview of natural resources-related planning issues. For a detailed discussion, please refer to the report **Planning Issues**.*

Natural resources are abundant in Wayne County and are highly treasured. But the environment has been affected by development and continued growth could do further harm if not managed properly. Water quality issues should be addressed through expanded or new sanitary sewer service. Soil limitations relative to on-site waste treatment and disposal must be more effectively addressed to protect public health, groundwater and soils. Development must continue to be sensitive to groundwater availability as well. Wetlands and woodlands should be protected wherever possible, and greenspace should be accessible.

Existing Conditions and Trends

*The following is an overview of existing conditions and trends. For a detailed discussion, please refer to the report **Existing Conditions and Trends**.*

Data sources for this assessment were principally from the Ohio Department of Natural Resources' (ODNR) Ohio Capability Analysis Program (OCAP), the agency's Natural Heritage Database and Wayne County Soil Survey. Natural resources play several important roles in Wayne County by providing wildlife habitat, supporting agriculture, providing building materials through quarries and by shaping development. Features include geology and soils, topography and slope, drainage, floodplains, groundwater recharge, woodlands, wetlands, species habitat and scenic views.

Natural constraints for development are extensive in Wayne County. Such constraints either make potential sites undevelopable, increase development costs for added infrastructure requirements or result in poor development sites. Relative to residential development for the entire County, these constraints include:

- Severe septic limitations which affect about 78 percent of total land area.
- Groundwater availability which affects about 37 percent (severe to moderate availability).
- Severe slope which affects about eight percent.
- Areas prone to flooding which affects about nine percent.

Geology and Soils

Wayne County is a place of topographical contrasts due to glacial activity which created postglacial lake beds, wetlands and hilly areas. Glacial moraines created the gently

sloping areas found in the northern two-thirds of the County, such as flat, prime farmlands consisting of poorly drained soils. The southern third of the County includes flat lowlands to the west which are surrounded by hilly areas. Bedrock outcrops are prominent in much of the hilly area, located near the southern border of the County.

Soils in Wayne County can generally be described as ideal for pasture land and the production of high yielding crops, especially when artificially drained. But erosion is found due to sloping in certain sections of the County and poor drainage from flat terrain. Much of the general soil composition in Wayne County is considered loamy to silty. The Wayne County Soil Survey lists soil types that are incompatible with development. In particular severe septic limitations affect about 78 percent of the County.

Agricultural Capability

Wayne County is blessed with highly productive farmland. The major portion of farmland supports primarily dairy and livestock enterprises. Most cropland is planted in corn, but specialized crops are also found. An agricultural capability analysis conducted by ODNR found that about two-thirds of Wayne County soil (239,797 acres, or 67.3 percent) has moderate limitations for agriculture. The data has been analyzed at planning area levels as well. Percentages of soil acreage within each class remained fairly consistent between the five planning areas of Wayne County.

Drainage

Wayne County is served by 52 watersheds according to ODNR, seven of which drain over 90 percent of the County. The following is a summary:

- The most substantial watershed, the Killbuck Creek spans across western Wayne County and drains 73,300 acres (20 percent of the County total).
- The Chippewa Creek and Sugar Creek watersheds located in the Northeast and Southeast Planning Areas, drain approximately 67,500 acres (19 percent) each.
- The Muddy Fork watershed, though predominantly located to the west in Ashland County drains roughly 43,500 acres (12 percent) within Wayne County.
- Approximately 26,000 acres (7.3 percent) are drained by Newman Creek in the eastern areas of the County.
- About 16,700 acres (4.7 percent) are drained by the Salt Creek tributary system located in the Southeast Planning Area.
- Apple Creek, a significant tributary of Killbuck Creek, drains over 35,200 acres (9.9 percent) in the Central and Southeast Planning Areas.

Floodplains

Floodplains are subject to flooding due to location adjacent to a body of water. Two floodplain classifications exist under the Federal Emergency Management Agency (FEMA): the 100-year and 500-year flood hazard areas (FHAs) - each with separate building standards. Floodplains are beneficial in that they may be used as areas for water retention and filtration, and gradual use for aquifer recharge. Development occurring in a floodplain, however, can be detrimental to the environment much less result in costly property damage. Agriculture, conservation and passive parkland are the most suitable uses for areas located within a floodplain.

The following results were determined by ODNR:

- The 100-year FHA constitutes 33,019 acres or approximately 9.3 percent of the County.
- The 500-year FHA is located on 373 acres or about 0.1 percent of total area.
- The remaining 323,026 acres or 90.6 percent of land is located outside of the FHA.

In the Northeast, 100-year FHAs are primarily situated along Chippewa and Little Chippewa Creeks, as well as along portions of Newman Creek. In the Southwest Planning Area, along Muddy Fork and the area to the immediate southeast of Muddy Fork, a fairly large 100-year FHA is located. Just to the east of Shreve is a second substantial 100-year FHA in the Southwest Planning Area. This FHA follows along Killbuck Creek, extends north towards Wooster and continues into the Northwest Planning Area through Congress Township. The FHAs are less extensive in the Southeast Planning Area, with the banks of Sugar Creek, Apple Creek and various other creeks and tributaries defined as a 100-year FHA.

The Central Planning Area has 100-year FHAs, with substantial areas located by Wooster and in the southern portion following Killbuck Creek. The 500-year FHAs of Wayne County are located in the Northeast Planning Area near Rittman. These areas are generally situated along the banks of the Chippewa and Little Chippewa Creeks, bordering the 100-year FHA.

Groundwater

Groundwater is a crucial resource to support development, both in supplying public water systems and meeting on-site needs. In general Wayne County offers adequate groundwater quality and yields throughout the County, although portions have experienced low flows (such as the West Salem area). An outstanding aquifer is found along the Killbuck. Groundwater constraints affect about 37 percent (severe to moderate availability) of total land area.

Groundwater recharge is important to maintaining aquifers and recharge ratios are an essential factor in the consideration of minimum lot size requirements on any given area in which well water is the source of water. Minimum lot sizes can be calculated based on the amount of acreage needed to supply sufficient groundwater recharge surface areas (the area required for recharge is that area above and beyond the minimum area needed for on-site septic systems).

According to preliminary groundwater recharge rates and an average household water consumption rate of 400 gpd, area recharge rates can require anywhere from 0.85 to 2.56 acres per dwelling unit. The following observations may be made in regard to development:

- Areas serviced by well water systems with lower groundwater recharge rates will require more acreage per dwelling unit than those with higher rates, hence lower-density development.
- Areas serviced by well water systems with higher rates of groundwater recharge require relatively less acreage per dwelling unit than those with the lower rates, hence higher-density development is possible.

Woodlands

Woodlands in Wayne County are generally dominated by hard and soft deciduous trees, yet the existence of conifers is not unusual. Woodlands are beneficial to the environment providing habitat and oxygen, assisting in the prevention of soil erosion and providing

aesthetic beauty and recreation. Water supply, soil conditions, fertility and topography can all play a role in the quality of woodlands.

Wayne County was at one time covered largely by forest land, predominantly comprised of hardwoods. It was determined by ODNR that 1995 land cover was 64,185 acres (18.0 percent of the County) of forest - shrub and brush rangeland, and deciduous and evergreen forest. The total deciduous forest land cover accounts for nearly 90 percent (57,633 acres), shrub and brush rangeland cover 10 percent (6,417 acres) and 0.2 percent (135 acres) is evergreen forest land.

The Northwest Planning Area is characterized by approximately 28 percent (18,097 acres) of the County's forest land. Within this planning area, a significant concentration of forest land is located along Killbuck Creek and portions of Little Killbuck Creek in Chester and Congress Townships. The Northeast and Southwest Planning Areas each have approximately 21 percent of forest land, estimated at 13,871 and 13,210 acres respectively. The Northeast Planning Area has some concentration in southeastern Chippewa Township, along the Chippewa Creek as well as in northern Baughman Township. Southeastern Franklin Township is also characterized by forest land concentration. Nearly 19 percent (11,906 acres) of Wayne County's forest coverage is located in the Southeast Planning Area, and the Central Planning Area contains just over one-tenth (7,101 acres). The forest lands are largely scattered across the latter two planning areas, as well as throughout much of the County.

Wetlands

Wetlands are those areas inundated or saturated by surface water or groundwater, at a frequency and duration sufficient to support (and that under normal circumstances do support) a prevalence of vegetation typically adapted for life in saturated soil conditions. Swamps, marshes, bogs, fens, potholes and vernal pools often characterize wetland areas. Wetlands are beneficial, frequently serving as natural water filtration systems which reduce pollutants from surface water, floodwater detention and support for fisheries.

A total of 5,175 acres of non-forested wetlands covered Wayne County in 1995. This accounts for 74.4 percent of the County's 6,951 acres of wetlands. The remaining 25.6 percent is comprised of 1,776 acres of forested wetlands. Wetlands account for approximately 2.0 percent of Wayne County's land cover. Approximately 63 percent (1,115 acres) of the County's forested wetland acreage is located in the Southwest Planning Area, predominantly along the eastern bank of the Killbuck Creek in Franklin Township, as well as near the Muddy Fork in Plain Township.

Species Habitat

Over 40 threatened or endangered species have been identified by ODNR in Wayne County. Many of the plants and animals identified are considered to be endangered or are threatened with statewide extinction. Noted habitats are indicated on the accompanying maps. Protection of these species or plant communities is therefore important. Any impact on the habitats of such species, thus, should be avoided or minimized.

Unique Natural Features

Several unique natural features are found in Wayne County and the following is a brief description.

- **Killbuck Marsh Wildlife Area -** The Killbuck Marsh Wildlife Area consists of 5,492 acres in Wayne County, and also continues into Holmes County. The area extends north from Holmesville to south of the

City of Wooster between SR 83 and SR 226. Purchase by Ohio of the land comprising the Killbuck Marsh Wildlife Area began in 1969. The area is to be expanded as funds become available.

The Killbuck is located in a U-shaped glacial outwash valley. Approximately 56 percent of the area consists of marsh which floods during some portion of the year. With the exception of the Lake Erie region, the Killbuck is Ohio's largest remaining marshland. Under a wildlife management plan, maintenance and protection of woodlands is provided for as well as crop rotation, improvement of open fields for nesting purposes, selective spraying and the establishment of food patches for the use of various wildlife. In addition, thousands of trees and shrubs have been planted to provide cover for wildlife.

The Killbuck Marsh Wildlife Area is used for hunting, trapping, fishing, canoeing, hiking and wildlife observation. County and township roads provide access to the area. Parking areas are located throughout the area.

- **Brown's Lake Bog National Natural Landmark -** Brown's Lake Bog is a national natural landmark in Wayne County. It is located in the Southwest Planning Area, about 2.5 miles west of Shreve, and encompasses 80 acres. The bog is a virgin boreal acid bog with wetland vegetation and swamp forest. It provides an ideal example of the stages of ecological succession of open water to swamp woodland occurring in a glacial depression. Furthermore, it has been protected from other wet areas within close proximity which have been altered. The bog is owned by The Nature Conservancy and is a dedicated nature preserve currently used for recreational and educational purposes.
- **Johnson's Woods Preserve** - Johnson's Woods is a state nature preserve located in the Northeast Planning Area. A path is currently being cleared for preparation of the construction of a boardwalk through the preserve. Johnson's Woods is presently open to the public and managed by ODNR.
- **Funk Bottoms -** Funk Bottoms is a large undeveloped area east of the hamlet of Funk, of which the State of Ohio has acquired about 830 acres. This is a large floodplain area with typical wetland plants. Its characteristics are similar to Killbuck Marsh.

Goals, Objectives and Strategies

Policies are the basis of the **Comprehensive Plan** and this section presents the Natural Resources Goal and eight objectives and related strategies. Together these policies are the driving force behind the Natural Resources Element. The Implementation Section presents actions for each objective. The Natural Resources Goal is:

Natural resources to be conserved.

The objectives and their respective strategies are:

Objective 1 - Inventory and Assessment - Complete an inventory of outstanding natural resources, by:

1.1 Undertaking an inventory of outstanding natural resources using existing state data bases (i.e.., Natural Heritage Data Base), local knowledge and field surveys.

1.2 Completing a simple database in the County's geographic information system that identifies resources by location and type, and which documents qualities.

1.3 Using the County's geographic information system and Ohio Capability Analysis Program data to evaluate development proposals at the County and local level.

1.4 Utilizing local experts and Ohio Department of Natural Resources staff to evaluate potential resource sites as needed.

Objective 2 - Preservation - Preserve outstanding natural resources, by:

2.1 Creating a nonprofit land trust to purchase or receive as a donation outstanding natural resources or to purchase or receive as a donation conservation easements over outstanding natural resources.

2.2 Ensuring sufficient funding to Wayne County Parks Board to acquire key natural resources as public preserves.

2.3 Supporting Ohio Department of Natural Resources' efforts to acquire additional floodplain along the Killbuck or Funk Bottoms, when willing sellers are involved.

2.4 Updating County Subdivision Regulations to require land dedication in platted subdivisions and target such dedications to outstanding natural resources.

2.5 Promoting a balance between development and the consumption of natural resources.

2.6 Promoting the preservation of wildlife habitat on public and private land.

Objective 3 - Mitigate Development Impacts - Evaluate development proposals and offer mitigation measures that conserve natural resources, by:

3.1 Preparing guidelines that provide for development while protecting natural resources and promoting guidelines to all units of local government.

3.2 Sponsoring an annual work session with local government officials, engineers, surveyors, developers, builders, etc. to review guidelines.

3.3 Utilizing County geographic information system and Ohio Capability Analysis Program data to evaluate development proposals at the County and local level.

3.4 Sponsoring an annual awards competition to recognize outstanding examples of development that is sensitive to the natural environment.

Objective 4 - Woodlands and Wetlands - Encourage conservation of woodlands and wetlands, by:

4.1 Discouraging development within woodlands and wetlands, and encouraging the use of open-space subdivisions to minimize impact on these resources.

4.2 Encouraging protection of outstanding examples through fee-simple or conservation easement acquisition or donation.

4.3 Adopting environmental assessment requirements in County Subdivision Regulations.

4.4 Promoting development guidelines (Objective 3).

Objective 5 - Stream Corridors - Encourage conservation of stream corridors, by:

5.1 Discouraging straightening of natural streams unless substantial property damage from potential flooding outweighs environmental concerns.

5.2 Encouraging wide wooded and vegetative buffers along all streams and tributaries following guidelines of the U.S. Natural Resource Conservation Service.

5.3 Discouraging development in the 100-year floodplain.

5.4 Encouraging preservation through proposed land dedication amendment to County Subdivision Regulations.

5.5 Discouraging the damming of the natural flow of streams and encouraging maintenance of all stream corridors.

Objective 6 - Water Quality - Improve surface water quality, by:

6.1 Encouraging construction of new and expansion/improvement of existing sanitary sewer systems.

6.2 Assisting in securing state funds to finance sanitary sewer system improvements and construction, and provide matching funds.

6.3 Studying current minimum health standards for on-site wastewater systems, make recommendations regarding appropriate lot size and study alternative technologies.

6.4 Encouraging combined septic systems in subdivisions to reduce maintenance and operation costs.

Objective 7 - Groundwater - Protect groundwater resources, by:

7.1 Discouraging inappropriate development over or adjacent to groundwater recharge areas and aquifers.

7.2 Adopting wellhead protection regulations to protect aquifers.

7.3 Conducting a countywide groundwater supply survey to delineate resources and identify pollution potential.

Objective 8 - Economic Considerations - Conserve natural resources important to Wayne County's economy, by:

8.1 Discouraging development of prime agricultural soils, timber production areas and sand and gravel locations.

8.2 Supporting timber production areas and sand and gravel operations that have approved state permits.

8.3 Encouraging appropriate land restoration programs of timber and sand and gravel operations.

Natural Resources Plan

The natural resource base is a system of unique habitats - woodlands, wetlands, streams, meadows, etc. Their conservation is important to ensuring adequate habitat for wildlife, managing climatic changes (stormwater runoff), providing recreational opportunities and supporting aesthetic values (i.e., rural landscape).

The Natural Resources Plan seeks to conserve this system and mitigate development impacts. The plan for natural resources is defined by a tiered approach to managing and conserving the County's abundant resources. This tier is:

Identifying Key Resources

The natural resource base is very extensive and a complete inventory does not exist. The accompanying Natural Resources maps identify the general location of deciduous forest, evergreen forest, shrub and brush rangeland, forested wetlands, non-forested wetlands, water and species habitats.

These resources should be evaluated on an ongoing basis to determine which should be protected, preserved, conserved or developed. The opportunities for doing so include:

- The County, working with park and recreation commissions, street tree commissions and private environmental groups can identify key resources prior to a threatening action, such as development.
- The inventory presented in the Plan and Existing Conditions and Trends Report is a very good starting point, as is the Planning Department's geographic information system (GIS). Species habitats are already identified by ODNR.
- As development proposals come before a County agency or local government, an evaluation should be made of existing environmental features on the subject site. As part of approval, mitigation measures should be taken to minimize negative impacts on the identified features.

Preserving Key Resources

Key natural resource assets should be preserved through ODNR, Wayne County Park District, local parks departments, nonprofit land trust or through subdivision approvals. This will require increased public funding of such activities and revision to County subdivision regulations. Several opportunities exist to offer protection. Funds must be secured, however, and funding options recommended in the Land Use Element is a local option. Issue 1 is a state program of limited park acquisition funds available on a competitive basis from ODNR.

Acquisition can take several forms:

- Fee-simple purchase, donation or combination thereof.
- Conservation easement purchase or donation.
- Privately-owned greenspace set aside in a platted subdivision.

The Plan does not recommend the use of eminent domain powers to acquire greenspace.

The Natural Resources Plan does not identify specific assets for acquisition. But the following criteria may be used as guidelines to evaluating a particular asset:

- Does the asset represent an outstanding example of its resource category (woodlands, wetlands, etc.)?
- Does the acquisition cost balance the property's value as greenspace?

- Is the acquisition accessible to the public, if the intent is for recreational or educational purposes?
- Who will manage the property? What are the maintenance and operation cost considerations?

Development Compatibility

Development should be compatible with natural conditions. Residential development lacking public utilities is especially affected by natural constraints. County development regulations should be strengthened to discourage such development from inappropriate locations because of the following natural constraints:

- Inadequate groundwater yields.
- Severe constraints for septic systems and leach fields.
- Prime farmland (class 1 and 2).
- Woodlands.
- Significant slopes (12 percent and higher).
- Floodplains (100-year FEMA boundaries, floodway and floodway fringe).
- Species habitats.

These same constraints affect compatibility of nonresidential development as well. However other factors, such as depth to bedrock will have a greater impact on larger structures. The County Soil Survey, OCAP and site engineering should be used to investigate a proposed development site.

The Wayne County Health Department should strengthen its rules to ensure that development approvals are decided based on community-wide benefits and not to accommodate individual property owners. In addition the Department should strengthen inspection of on-site systems during installation to ensure contractors are installing systems properly. Follow-up inspections should be scheduled on a regular basis to ensure systems are functioning as designed.

The County Subdivision Regulations should be revised to require subdividers to identify on preliminary and final plats soil types, proposed leach field locations and buildable lots based on soil constraints for septic systems. The County Planning Department should use the plat as a basis to review and approve septic system permit applications with the Health Department. Building permits should indicate the location of septic systems and buildable areas based on approved plats as well.

Mitigate Development Impacts

Development impacts should be mitigated by providing guidelines to ensure construction activity is sensitive to environmental features. Construction activity would include the building of residences and commercial structures, as well as public improvements such as roads, bridges, etc. Several outstanding sources of best management practices are available. The state has already enacted erosion controls on construction projects as mandated by the Federal government.

Relative to residential subdivisions (major and minor), County development regulations should be strengthened to discourage such development from inappropriate locations because of the natural constraints identified in the previous section. In particular:

- **Buffer Zones** - Buffer zones are a useful site planning tool to mitigate development impacts. If a development site includes an outstanding natural resource that is to be conserved, a minimum buffer should be

established between the development and the resource. Within this buffer no development activity would take place, including grading. Buffer widths can range from ten to 50 feet, depending on the resource in question.

- **Surface Drainage** - A secondary issue is ensuring that surface drainage patterns that are impacted by development do not alter the microclimate affecting a conserved resource. Changes in drainage could alter water levels that are necessary to a resource. Effective site planning can mitigate these impacts by ensuring surface water rates and directions don't change appreciably.

Improve the Quality of Resources

Pollution of natural resources should be reduced through various infrastructure improvements, including water and sewer services. The Utilities Element identifies water and wastewater systems that require improvement to accommodate future growth, as well as communities lacking such facilities. Reducing the number of single-family homes permitted to develop with on-site utilities would serve to prevent additional surface and groundwater pollution. The Health Board has identified areas where on-site systems have failed.

Conserve Productive Resources

Resources important to the local economy should be conserved, especially timber, gravel, coal and petroleum. Absent local zoning, these resources should be discouraged from development to ensure their long-term productive use. Land use should be managed where possible under current regulations to ensure that incompatible uses (such as single-family homes) are not permitted adjacent to resource production areas.

Implementation

Implementing the Natural Resources Plan will involve both short- and long-term activities. In the short-term an inventory and assessment of key resources can be completed. This will provide a suitable base of information from which to conduct long-term activities. In the long-term the County will be in a stronger position to ensure development is compatible with natural constraints, protect natural assets and improve the quality of natural resources.

Getting Organized

- **Database** - The key to getting organized is to gather the information necessary to structure and undertake the resource inventory. Excellent data is already in place in the County Planning Department's GIS system, including development capability, agricultural capability, land cover and species habitats. This base can be used to identify key resources and to conduct environmental assessments of development proposals. Field surveys necessary to further refine data should be undertaken with the assistance of university faculty and students, community organizations and volunteers.
- **County Park District** - Strengthening the Wayne County Park District is another important task. The Board must be financially secure and stable to assist in permanently protecting greenspace. This involves initial administrative funds to provide secure financial footing, which should be followed by a permanent funding stream. Recent ballot issues have failed, but additional efforts should be made to gain voter support.

- **Private Nonprofit Land Trust** - In addition to the Park District, a private, nonprofit land trust should be established. The trust would have responsibility to acquire or accept as donation either land or conservation easements. Trusts hold property as perpetual preserves and provide ongoing maintenance and management services. Land trusts have been very successful around the country. In Ohio they currently own and/or manage thousands of acres of greenspace.

Preserving Resources

If the Park District gains a secure financial footing, it should serve as the lead agency for park acquisition and development in the County. Efforts should then be undertaken to preserve key resources using the inventory prepared by the County Planning Department. Clearly some resources can be set aside as public parkland, while others may be held in perpetuity as nature preserves.

Other resources that should be protected include such productive resources as prime agricultural soils, quarries and prime timber. Public efforts should be made to dissuade development of these resources and to discourage adjacent noncompatible development. Prime agricultural soils could be protected if the Land Use Plan is implemented, thereby redirecting future development to cities, villages and hamlets and protecting agriculture. Adding a mandatory land dedication requirement to the subdivision platting process is another recommended mechanism to acquire and preserve greenspace.

Managing Development to Ensure Compatibility

The County development process should be strengthened so that residential development is properly managed to ensure it is compatible with natural constraints. As stated earlier Wayne County is impacted by several significant constraints for development, including limitations on septic systems, limited groundwater availability, severe slopes and areas prone to flooding. To increase accountability in the development process, the following activities should be undertaken:

- Strengthen Subdivision Regulations to include an environmental assessment at the preliminary plat stage.
- Requiring the identification of soil types, leach fields and buildable areas on plats, and ensuring compliance in health and building permit processes.
- Preparing development guidelines that encourage compatibility beyond regulatory standards.
- Strengthening Health Code standards relative to on-site wastewater and water systems.

Commercial and industrial development fall under state building permit requirements. The County should stress the importance of its environmental review process with the state to encourage wider promulgation of the standards and expectations.

Actions

A detailed set of recommended actions follows which provide direction relative to strategies presented in this chapter. Actions are intended to be very defined steps that are necessary to implement individual strategies. Parties are identified that are responsible for implementing individual actions. Recommended timeframes are also provided to measure success. A summary of all actions presented in the **Comprehensive Plan** is provided in the Implementation Element.