

CHAPTER **2**

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**NATURAL ENVIRONMENT**

PART I: COMMUNITY GOALS



## INTRODUCTION

This Natural Environment chapter addresses the natural features and systems found throughout Hancock County. The natural environment of Hancock County plays a significant role in determining development patterns. Particularly significant are rivers, streams and other drainage ways. It is important that the environmental systems at work in the county are recognized and accommodated during the development process.

This chapter is intended to provide a framework for addressing the county's environmental challenges. The goals and policies are designed to help the county balance the functional and aesthetic value of the natural environment with the impacts of growth. It focuses both on protecting persons and property and conserving the natural beauty of the county by appropriately managing development. The goals and policies are also intended to remain consistent with others found in the plan, as well as the needs of the larger regional environmental systems of which Hancock County is a part.

*Low-lying areas, such as this one where a creek flows through a stand of trees and under a road, should be protected from development.*



**Protect and enhance the county's land-based natural resources, such as floodplains, wooded areas, riparian areas, and soils.**

**Policy 1 Preserve the county's natural features and habitats.**

Many areas of the county contain significant environmental features that should be preserved from development. In many cases, development can be creatively designed to preserve these areas while still fulfilling the goals of the project. This approach should be encourage for new development in the county.

**Policy 2 Protect the county's floodways and floodplains from development impacts.**

Floodways and floodplains serve an important function in the effective drainage of water from land in the county. They cannot function efficiently if obstructions exist, impeding the natural flow of the water. The county must carefully manage growth in areas around these drainageways, and should seek opportunities to remove structures that may already be located in floodway and wetland areas.

**Policy 3 Seek opportunities to establish regional detention facilities.**

Throughout the county, drainage has become a major issue, and it is a key factor in every new development that is proposed. In some cases, a greater benefit would occur if multiple developments could connect to a single, regional drainage feature. The development of this type of facility should be explored in coordination with appropriate local and state agencies as well as private development.

**Policy 4 Appropriately manage riparian areas around the county's drainageways.**

Drainage problems are often caused by overgrown or obstructed drainage channels. Maintenance practices should strike a balance between providing a clear channel for drainage and selectively preserving desirable forested areas for habitat and erosion control purposes. Private property owners should be educated and encouraged to follow similar practices.

**Policy 5 Protect the county's forested areas.**

Despite the growth seen in recent years, there are still significant forested areas remaining in Hancock County. Preserving these areas can help to protect vital natural systems and habitats, as well as enhance the aesthetic value of the county. It is important that, as development occurs, the county's woodlands remain protected from growth.

*See the Floodplain Management Profile on page 2-5 for more information.*

*See the Riparian Area Profile on page 2-4 for more information.*

**GOAL ONE: LAND (CONT.)**

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**Action Step(s)**

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**1 Improve Local Understanding of Drainage Maintenance**

Make education material available that provides a practical understanding of best management practices for drainageways. It should provide information on proper techniques for keeping channels clear, as well as recommendations for appropriate trees and landscaping to plant along drainageways.

**2 Maintain an Inventory of Natural Features**

The County should create and maintain an inventory of significant environmental features. This includes those features that are most important for character and environmental quality. Such an inventory would be a component of the County's geographic information system, and could then be used by developers, the County, and the public as part of the development review process.

**What is a Riparian Area?**

Riparian areas are also known as streamside forests. They are the wooded areas along rivers and streams. These areas are a complex ecosystem vital to the protection of stream and river water quality. These areas include some of the richest varieties of plants and animals in most regions.

**Why are Riparian Areas Important?**

Land along waterways has significant ecological and aesthetic value that enhances the natural environment of a community. The presence of riparian areas also adds value to properties with water access, as they are often prime locations for development.

Many communities depend upon local rivers and streams for recreation, drinking water, and natural resource areas. The loss of riparian areas along such waterways is a major cause of decreases in water quality and loss of wildlife habitat.

**How are Riparian Areas Identified?**

Healthy riparian areas are typically composed of large trees, woody understory trees and shrubs, and smaller flowers, grasses, and groundcovers. Well maintained and managed riparian areas are able to influence the physical, chemical, and biological characteristics of the stream by:

- 1) Providing food, shelter and natural linkages for a wide variety of plant and animal communities.
- 2) Shading and cooling the stream to enhance aquatic habitats.
- 3) Filtering sediments and pollutants, preventing them from entering the stream or waterway.
- 4) Stabilizing river banks and reducing bank erosion.
- 5) Providing flood control.

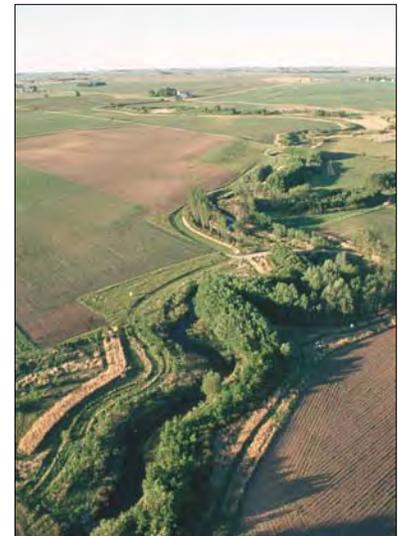
**Who Regulates Riparian Areas?**

In Indiana, the Indiana Department of Natural Resources has the authority to regulate riparian areas for water quality purposes. Local governments may regulate, to some extent, development or encroachment to riparian areas through planning and zoning controls.

The Natural Resource Conservation Service (NRCS) has developed Conservation Standards for Riparian Forest Buffers (Code 391). These standards are site specific and will vary depending on the size of the waterway and floodplain. Most standards address an area ranging from 35 to 150 feet on either side of the stream. The ideal riparian area includes three zones for management in which development should be restricted. These zones, listed in sequence from the edge of the stream, are as follows:

- 1) Undisturbed Forest - This zone is adjacent to the stream and is ideally 15' in width. Removal of vegetation is not permitted.
- 2) Managed Forest - This zone is ideally 60' in width and harvesting of older vegetation is encouraged to support better filtering/removal of nutrients through younger, faster growing vegetation.
- 3) Runoff Control - This zone is ideally 20' and may be pastured, farmed for hay or mowed for recreational purposes.

*A typical riparian forest along a stream surrounded by farmland.*



### **Why Is Floodplain Management Important?**

While many areas have flood problems, floodplain lands can be valuable community assets. The natural resources that are contained in these areas, as well as the natural functions of these resources, can contribute to the overall quality of life. When floodplain areas are left in or restored to a natural state, they can not only reduce the severity of flooding, but better handle stormwater runoff and help prevent pollution of the natural water system.

### **Floodplain or Floodway?**

The floodway is the channel of a river or stream and those portions of the land adjoining the channel which are reasonably required to carry and discharge the peak flow of the regulatory (100-year) flood. The areas adjoining the channel which have been or may be covered by the regulatory flood is the floodway fringe. The floodplain includes both the floodway and the floodway fringe districts. Generally, the floodway should be kept clear of structures and other impediments to drainage flow. Floodway fringe areas may have limited development, but it should be carefully managed to ensure minimum impact on drainage and damage to structures.

### **Floodplain Management Practices**

There are many steps that communities can take to manage their flood-prone areas in a way that maintains effective drainage and provides quality of life benefits. This includes:

#### *Preventing Increases in Flood Losses*

- 1) Establishing floodplain regulations that limit new construction in these areas.
- 2) Information and education programs for those who live in or near floodplain areas.

#### *Reduce Flood Risk for Existing Development*

- 1) Acquisition & Relocation programs for at-risk properties.
- 2) Participation in the National Flood Insurance Program.
- 3) Structural measures to improve drainage, such as channel alterations, land treatment measures, and on-site or regional detention systems.

#### *Preserve & Restore Natural Floodplains*

- 1) Wetland and riparian area restoration projects
- 2) Floodplain and wetland protection regulations
- 3) Develop floodplain areas with complimentary uses such as parks, nature preserves, or other low-impact recreation facilities.

Appropriate floodplain management practices will reduce the long-term cost to the community of clean-up and repair should a major flood event occur.

**Protect and enhance the county’s water-based natural resources, such as surface water, groundwater, and wetlands.**

**Policy 1 Support wellhead protection practices.**

The county’s water providers draw their water supply from various wells located throughout the county. Land use and development practices within wellhead protection areas should be carefully managed to prevent hazardous substances from entering the water supply. This includes not only industrial and commercial practices, but things like roadway design or the disposal of household chemicals.

**Policy 2 Encourage high environmental standards for areas around the county’s rivers and streams.**

The county’s waterways often become prime locations for pollutants and debris to enter the local water table – fouling its intended uses. These waterways also serve as habitats for a variety of plants and wildlife. It is important that these areas are protected so that they can continue to provide healthy functions in the county ecosystem.

**Policy 3 Promote the protection of wetlands.**

Like rivers and streams, wetlands also serve important habitat and drainage functions. Careful management of development around these sensitive environmental features is important to maintaining those functions. Close coordination with state and Federal authorities should be a component of this effort.

*See the Wetlands Profile on page 2-7 for more information.*

**Action Step(s)**

**1 Establish wellhead protection measures in the zoning ordinance**

Create a wellhead protection overlay district in the zoning ordinance. This overlay would establish standards for appropriate land use and development practices within designated zones around water supply wells.

**2 Establish development standards that protect rivers and streams**

Specific development standards that create a buffer area around rivers and streams should be added to the zoning ordinance. Such standards would help to protect the natural drainage and habitat functions of these areas, as well as add to the aesthetic value of nearby development.

**3 Maintain natural drainage courses**

It is important that naturally existing drainage courses are protected and maintained. This involves managing the impacts of development, as well as ensuring that improper dumping practices do not cause disruptions in natural drainage patterns.

**4 Promote appropriate erosion control practices**

Development practices can be a major contributor to erosion and drainage problems. Educational measures should be put in place to promote the use of proper erosion control practices on development sites. Standards for such practices have been adopted by the county, and should be reinforced with changes to the county’s Zoning Ordinance.

**What is a Wetland?**

Wetlands are areas inundated or saturated by surface or ground water throughout the year. The presence of water at or near the surface is the dominant factor that determines soil characteristics as well as plant and animal communities.

**Why are Wetlands Important?**

- 1) Water Quality - Wetlands purify water by filtering and trapping sediment, chemicals, and excess nutrients before water enters other water bodies or groundwater.
- 2) Wildlife Habitat - Wetlands provide habitat for fish, waterfowl, and other wildlife which use these areas to breed, find food, and protect their young.
- 3) Flood Control - Wetlands reduce flood damages by storing and slowing floodwaters. Wetlands regulate water levels within a watershed.

**How are Wetlands Identified?**

The general location of wetland areas may be determined using the U.S. Geological Service’s (USGS) National Wetland Inventory (NWI) maps. The specific identification of wetlands are typically made by an individual holding a “US Army Corps of Engineers Regulation 4 Jurisdictional Wetland Certification”. The exact boundaries of jurisdictional wetlands can be determined using all three of the following criteria:

- 1) Water Indicator - The area is inundated or saturated to the surface, by a single, continuous episode, for at least 5% of the growing season in most years.
- 2) Wetland Vegetation - The presence of plant species that are typically adapted for life in anaerobic soil conditions.
- 3) Hydric Soils - The presence of soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the root zone.

*A typical wetland area.*



**Who Regulates Wetlands?**

Wetlands along waterways are protected primarily by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act. The Natural Resource Conservation Service (NRCS), U.S. Fish & Wildlife Service (USFWS), as well as state and local environmental agencies may also regulate wetlands.

The U.S. Environmental Protection Agency (EPA), Corps, and USFWS have a public policy of “no net loss of wetlands” requiring acre-for-acre replacement of wetlands either on-site or within the same watershed.

**Promote the protection and enhancement of air quality in Hancock County.**

**Policy 1 Support pollution-minimizing forms of transportation.**

One off-shoot of the continued suburban development in western Hancock County is the growth of automobile traffic, which in turn results in increased emissions. The county should support forms of transportation, such as bicycling or mass transit, that can reduce these emissions. This includes coordinating with the Indianapolis Metropolitan Planning Organization on their regional mass transit study (see page 7-11 for more information).

**Policy 2 Encourage development patterns that minimize pollution emissions.**

Development can be guided in ways that help to reduce the amount of pollution emitted into the air. Compact, mixed use development patterns reduce the number of vehicle trips as well as the length of many vehicle trips. Directing development to areas around established communities, rather than spread across the county, can achieve a similar effect.

**Policy 3 Support air-quality education and initiatives.**

The county should support local participation in air-quality improvement programs and initiatives such as ozone reduction days, regional transportation planning, ride-share and mass transit programs, and other innovative programs to reduce air pollution. It is important to education the public about the environmental and economic development impacts of being adjacent to a city, Indianapolis, that is a designated air-quality non-attainment area.

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**Action Step(s)**

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**1 Require vehicular connectivity in the Zoning Ordinance**

The zoning ordinance should contain measures that promote roadway connectivity between developments. This will make vehicle trip shorter and more efficient, resulting in lower emissions into the atmosphere.

**2 Promote pedestrian connections in the Zoning Ordinance**

Pedestrian connectivity should also be emphasized between developments as a part of the zoning ordinance. Making some trips possible and more convenient by means other than automobiles reduces the number of vehicles trips required.

**3 Promote tree preservation**

Trees are important not only for aesthetic character and quality, but they aid in the breakdown of certain pollutants in the air as well. The zoning ordinance should contain incentives that would encourage the protection and preservation of trees as a component of new development.

**GOAL FOUR: RECREATION OPPORTUNITIES**

**Provide high-quality parks and recreation opportunities to county residents.**

**Policy 1 Seek partnerships for the development of parks and recreation facilities.**

As the population of Hancock County grows, the demand for parks and recreation amenities will also increase. While it may not be feasible for the county to establish parks on its own, it may be beneficial to establish partnerships with the communities in the county to share the expense of developing and maintaining such facilities. Similar partnerships could also be pursued with schools, which typically provide some level of outdoor recreational facilities that could be convenient public resources.

**Policy 2 Pursue opportunities to create dual-use facilities combining parks and drainage infrastructure.**

Passive recreation areas are those that are left largely in their natural state, often incorporating large wooded areas or water features. In some cases, passive recreation areas can double as regional drainage facilities, serving both purposes effectively. Opportunities to create this type of combination should be explored, particularly in growing areas of the county.

**Policy 3 Support the development of greenways trails by local communities and developers.**

Greenways trails are gaining popularity as recreation amenities. Efforts are currently underway to create a trail along the abandoned Pennsy rail corridor that runs parallel to U.S. 40. While the county is not in a position to develop and manage a trail system, it can support efforts by other local communities to do so. In addition, developers should be required to include trail systems within their developments as amenities for residents.

*Many communities are developing recreational pathway systems. The Pennsy Trail, shown in the photo at left, is one such pathway that has been developed in Greenfield.*



## GOAL FOUR: RECREATION OPPORTUNITIES (CONT.)

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**Policy 4 Encourage the inclusion of parks and recreation facilities in new development.**

Parks and recreation amenities can add to a community's quality of life and enhance the natural environment. New development should be encouraged to include such facilities, as should the individual communities within Hancock County. While the County is not in a position to establish its own parks system, it remains supportive of such amenities being integrated as new development occurs.

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### **Action Step(s)**

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**Establish open space provisions for subdivisions in the zoning and subdivision control ordinances**

Create development standards requiring a minimum amount of open space to be reserved at part of new subdivisions. This open space could be used to create a common area for the development, or used as a route for an internal pathway system for residents.

