Prospectus for a Wabash River Greenway Partnership

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A Project of
The Wabash River Enhancement Corporation

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North Central Health Services
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The Wabash River at Granville Bridge Park
The Wabash River, its tributaries, and associated landscapes contribute to the region’s distinct identity. These features shaped Tippecanoe County’s history and provided resources for generations of natural communities and the people who have lived here. (Image WRT)

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Foreward

Make no little plans; they have no magic to stir men’s blood, and probably themselves will not be realized…

Daniel Burnham, as quoted in Charles Little’s *Greenways by America*. Johns Hopkins Press 1990.

In 2004, the cities of Lafayette and West Lafayette, Tippecanoe County, and Purdue University formed the Wabash River Enhancement Corporation (WREC) for the purpose of guiding enhancement of the Wabash River corridor in the four-county area of Carroll, Tippecanoe, Warren, and Fountain Counties. WREC is a non-profit organization governed by a nine-member board, with an executive director and one staff member. It receives funding from a combination of public and foundation sources. North Central Health Services has generously supported WREC since its establishment.

Since 2005, WREC has engaged in several initiatives to contribute to a better understanding and improved conditions of the Wabash River ecosystem. Towards that end, it is engaged in a multi-phase project to develop an enhancement strategy for the Wabash River corridor, assisted by the planning and design firm of Wallace Roberts & Todd, LLC. In 2008, the initial phase of planning began for the corridor within the cities of Lafayette and West Lafayette. In 2009, planning commenced for the rural sections of the river and its tributaries within Tippecanoe County -- the focus area of this prospectus.

The evolving concept envisions a greenway partnership along the Wabash and its tributaries. Drawing from the experience of greenways elsewhere in Indiana and across the nation, a Wabash River greenway could offer multiple benefits to the Wabash ecosystem, the local economy and the quality of life of the county’s residents, labor force and visitors.

A greenway could provide unique opportunities to build upon both past accomplishments and current initiatives to enhance the Wabash River. It could stimulate a coalition of diverse but complementary interests in agriculture, outdoor recreation, public health, economic development, land conservation, ecosystem restoration, historic preservation, and place-based education. Such a coalition would require leadership and a long-term commitment to making the greenway a reality.
Executive Summary

Today, a diverse community values the river. The public is generally interested in maintaining a healthy river ecosystem. Residents value the connection that the river provides to the region’s past. They are aware of the potential river-related opportunities for exercise, experiencing solitude, observing nature, developing personal skills, and learning first-hand about the world in which they live. A Wabash River greenway could provide the means by which these values could be realized.

The concept of greenways goes back at least to the 1860s when Frederick Law Olmsted and other planners began to incorporate linear park designs into a variety of park projects in Berkeley, Brooklyn, Minneapolis - St. Paul and elsewhere in the United States. Since that time, communities around the country have successfully implemented the concept, creating open space networks along rivers and other natural features. Examples of such greenways can be found in a number of communities in Indiana.

The Wabash River provides a setting for establishing a greenway that could encompass sections of the river’s floodplain, outwash terraces and tributary valleys and other landscape features. Such a greenway would be consistent with plans and studies prepared by state, county and local government agencies, and nonprofit organizations.

Several options exist for delineating the greenway. They range from a relatively narrow riparian corridor to broader landscape concepts. A preferred strategy may be to retain flexibility in using a combination of options as circumstances dictate. Such decisions could occur in measured steps. A greenway vision and set of guiding principles would guide such planning and decision-making over time.

The greenway could be conceived as a linear park entirely in public ownership under a single land management entity. A mixed public and private ownership concept is likely to be a more appropriate approach and offers opportunities for public and private cooperation. Under such a scheme, the greenway might consist of the following elements: (1) lands in agricultural use, (2) private conservation lands, (3) greenway parks and preserves, (4) greenway development sites, (5) greenway-related lands, and (6) greenway travel routes and way-finding.

Applying the mixed-use concept, under current circumstances a Wabash greenway would consist primarily of agricultural lands, followed by greenway-related lands in residential and other uses, and a relatively small percentage of land in public parks and nonprofit ownership. Such a “mix” of land ownership and use could remain relatively stable for many years or adjusted in various ways to reflect greenway priorities.

Moving forward with a Wabash River greenway would require consideration of important issues associated with its design, development, management and funding. An overarching consideration would be the public’s views towards the concept. Although it faces significant challenges, the capacity exists to create a Wabash Greenway Partnership in Tippecanoe County. Needed is a commitment to the concept and collaboration among the public, nonprofit and private sectors to make it happen.
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The Greenway Concept

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Agricultural Fields along Route 800
From both the state and national perspective, greenways are typically associated with pathways and waterways that connect parklands. Greenways vary in size and occur in a variety of urban, suburban, and rural settings. (Image: WRT)
Greenways in America: An Historical Perspective

greenway (gren'-wa) n. 1. A linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route. 2. Any natural or landscaped course for pedestrian or bicycle passage. 3. an open-space connector linking parks, nature reserves, cultural features, or historic sites with each other and with populated areas. 4. Locally, certain strip or linear parks designated as a parkway or greenbelt. [American neologism: green + way; origin obscure.]


As described by Charles Little in Greenways for America¹, Fred Law Olmsted was one of the early designers of the greenway idea - incorporating Strawberry Creek as public parkland into his 1865 plan for the University of California, Berkeley. In 1866, Olmsted with Calvert Vaux, in their plan for Prospect Park (Brooklyn, NY) put forth the notion that no single park, no matter how large and how well designed, would provide the citizens with the beneficial influences of nature. Parks need to be linked to one another and to surrounding residential neighborhoods. In 1887, that concept was more fully developed in Olmsted’s “Emerald Necklace” plan for Boston, characterized as a “park and parkway” that included a 4.5 mile arc around the city.

Those early greenway initiatives were followed by others in the 20th century, in many areas of the country. They varied from relatively small urban areas to large regional undertakings such as Benton MacKaye’s 1921 proposal for an Appalachian Trail from Maine to Georgia. But it was not until the 1950s, when the “greenway movement” took off, spurred by post World War II population growth and suburban sprawl. As described by Little, by that time, greenways were credited for their social, environmental and economic benefits, i.e.:

- Improving recreational opportunities, particularly for walkers, joggers, bikers and hikers;
- Providing for ecological functions such as protected floodways and habitat corridors for wildlife;
- Attracting new development that creates jobs and tax-ratables

Little also describes several other significant greenway attributes. As linear parks they provide significantly more opportunities per acre than traditional “square parks.” They have a huge edge effect in terms of benefitting adjacent lands. They can multiply the utility of existing parks by linking them together like beads on a string.

Greenways in America: Examples from Across the Nation

At a national level, the majority of greenways are associated with pathways and waterways that also serve as linkages to parklands. They vary in size and occur in a variety of urban, suburban, and rural settings. Below are brief summaries of greenways found in different parts of the country.

Chattanooga Greenways Plan and Tennessee Riverpark
Chattanooga, Tennessee
This system of greenways in the Chattanooga area provides open space for recreation and preserves the natural environment. When complete, the greenway will include the Tennessee Riverpark, a continuous circuit of parks and trails. Approximately eight of the planned 22 miles of trail have been completed.
http://www.outdoorchattanooga.com/197.htm

Meramec Greenway
St. Louis to Sullivan, Missouri
This 108-mile greenway follows the Meramec River from its confluence with the Mississippi River to the Ozark uplands. Established in 1975, it includes over 28,000 acres in public parks, conservation areas, and institutional lands offering recreational opportunities.
http://www.meramecgreenway.org/

Capital Area Greenway
Raleigh, North Carolina
Planning for this local greenway began in the 1950s. It now encompasses 3,000 acres and 63 miles of trails. Floodplain zoning and conservation easements are important tools that have helped the community implement the greenway concept. Thirty-five other communities in the state are developing greenways modeled after the Capital Area Greenway.
http://www.raleigh-nc.org

Pima County River Parks
Tucson, Arizona
Pima County established a network of river parks for flood control, as an alternative to engineered flood control structures. The Pima County Department of Transportation and Flood Control District and the U.S. Army Corps of Engineers led the effort.
http://www.pima.gov/nrpr/parks/rivparks.htm

Yakima Greenway
Yakima, Washington
This greenway along the Yakima River is composed of over 10 miles of pathways that connect parks, river access sites, nature trails, fishing lakes, and protected natural areas. A local non-profit organization, created in 1980, has played a major role in developing the greenway.
http://www.yakimagreenway.org/about.html

Platte River Greenway
Denver, Colorado
Planning for the Platte River Greenway began in 1974. Since then, the Greenway Foundation - a local non-profit organization - has led development of the greenway, partnering with public agencies, other nonprofits, corporations and individuals to implement environmental, aquatic, recreational and open space improvements along the South Platte and its tributaries. The combined cost of these projects has exceeded $60 million.
http://www.greenwayfoundation.org/home/index.html

Yakima Greenway
Yakima, Washington
This greenway along the Yakima River is composed of over 10 miles of pathways that connect parks, river access sites, nature trails, fishing lakes, and protected natural areas. A local non-profit organization, created in 1980, has played a major role in developing the greenway.
http://www.yakimagreenway.org/about.html

Floyds Fork Greenway
Louisville, Kentucky
A new initiative is underway to develop a greenway along 27 miles of Floyds Fork in Louisville/ Jefferson County, Kentucky. Plans call for a system of interconnected parks and trails, designed to accommodate hikers, mountain bikers, horseback riders, paddlers and others. To date, mostly private funding has made possible acquisition of approximately 3,000 acres of the planned greenway.
http://www.louisvilleky.gov/metroparks/cityofparks/floyds_fork.htm

From Left:
Floyds Fork Greenway: When completed, the 27-mile greenway will connect parks and provide opportunities to explore the Floyds Fork stream valley by both land and water. (Image: WRT)

Greenways in Indiana

Indiana reflects national practices in terms of its leadership and support of trail and greenway concepts at both the state and community level. The Indiana Trails, Greenways & Bikeways Plan indicates that the state currently has over 2,000 miles of public trails, 136 miles of trails under development, and 2,000 miles of proposed new trails, including a special category of regional “visionary trails.” The plan contains a statewide trail inventory, also available on the Indiana Department of Natural Resources website.

Whereas state and federal agencies have provided trails associated with major protected resources (e.g., Hoosier National Forest) local governments in Indiana have been at the forefront of providing trails for daily use. Although not always referred to as greenways, many of these trails have greenway characteristics, such as trail links to parkland. Listed below are selected examples of designated greenways in settings comparable to that of Tippecanoe County.

**Rivergreenway**
Fort Wayne, Indiana
This is a 20-mile linear park along the banks of the St. Marys, St. Joseph, and Maumee Rivers. Used for bicycling, hiking, nature study, jogging, rollerblading and leisurely walking, it offers scenic overlooks of country and city settings. The RiverGreenway Trail is owned by the City of Fort Wayne and maintained by its Parks and Recreation Department and Public Works Department. It is supported by a volunteer nonprofit group called the Greenway Consortium.
http://www.fortwayneparks.org/index.php?option=com_content&view=article&id=151&Itemid=34

**Indy Parks Greenways**
Indianapolis, Indiana
The Indianapolis greenway system consists of 29 miles of greenway trails, 26 miles of “blueways,” and eight conservation corridors. It encompasses streams, old railroad and utility corridors, and historic sites. Eventually, it will contain more than 150 interconnected trails throughout Marion County. Its conservation corridors, varying from 4.4 to 11.5 miles, follow creeks in a variety of neighborhood, farmland, and forest settings. The system is managed by the City’s Department of Parks and Recreation Department.
http://www.indy.gov/eGov/City/DPR/Greenways/Pages/home.aspx

**Ohio River Greenway**
Clark County and Floyd County, Indiana
This partially completed greenway follows seven miles along the Ohio River, providing linkages among the communities of Jeffersonville, Clarksville and New Albany, to promote a passive recreational environment for river access, while allowing each community to construct its own riverfront amenities. The greenway is administered by the Ohio River Greenway Development Commission chartered by the Indiana Legislature in 1993. The greenway is supported by a “Friends” organization as well as several advisory committees.
http://www.ohiorivergreenway.org/index.html

Rivergreenway: Fort Wayne, Indiana:
As part of a larger 200-mile network of trails, the 20-mile Rivergreenway connects several communities and offers diverse user groups recreational opportunities both in rural and urban settings. Image: “Runners and Biker on Trail.” Photograph. Americantrails.org. Available From: http://www.americantrails.org/nationalrecreationtrails/trailNRT/River-Greenway-Fort-Wayne-IN.html
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the Greenway concept stretches 16 miles from Indianapolis to Carmel and is used by approximately 1.2 million visitors each year. It is so popular that developers are building thousands of high-end condominiums and townhouses along or near the trail.

The Eppley Institute for Park and Public Lands and the Center for Urban Policy and the Environment have conducted in-depth studies of Indiana’s greenways:

- In 2001, the Eppley Institute studied the Rivergreenway Trail in Fort Wayne. Significant among its fourteen conclusions, the Institute found satisfaction with the Rivergreenway Trail among both trail users and neighboring property owners.

- In 2003, the Center for Urban Policy and the Environment evaluated the impacts of the Indianapolis greenways on property values. It found that - all other factors being equal - people pay more for homes in greenway corridors, with the prices paid in conservation corridors being slightly higher than those paid in greenways limited to trails.

Greenspace Functions and Benefits

- Preserves natural and scenic resources
  - Protects and enhances natural vegetation and wildlife habitat
  - Reduces flooding by absorbing stormwater
  - Improves water quality
  - Cools the urban landscape, thereby reducing energy consumption and greenhouse gas emissions

- Promotes exercise and physical activity
  - Reduces incidence of chronic diseases such as asthma, obesity, and cardiovascular disease
  - Brings people into contact with nature
  - Provides places for people to meet others
  - Provides a respite from urban congestion

- Promotes economic development and contributes to community fiscal security
  - Improves the quality of life, thereby enhancing the attractiveness of the community to new businesses seeking to relocate
  - Increases local property values
  - Creates new recreation-based opportunities for local businesses along the greenway
  - Reduces spending for energy, healthcare, and municipal infrastructure

Greenway Benefits

Over the past decade, numerous surveys and studies have documented the far-reaching benefits of trails and greenways. These include tangible economic impacts, opportunities for “co-located infrastructure” such as sewers and other utilities, provision of alternative transportation corridors for commuting and other trips, and opportunities for exercise resulting in improved community health.

The Indiana State Trails, Greenways and Bikeways Plan, cites examples of economic benefits related to increased property values near trails; new recreation-based business development such as restaurants, grocery stores, and bike shops; and, increased tourism spending. The plan provides the following examples:

- A 2002 survey conducted by the National Association of Realtors and the National Association of Home Buyers found that trails were the second most important community amenity (chosen from a list of 18 amenities).
- In February 2006, a software manufacturer from Muncie announced that it was moving its operations to Yorktown. In response to its employees desires, the company’s new facility included a park and walking trail.
- In June 2006, the Monon Greenways Trail celebrated its 10th anniversary. The trail stretches 16 miles from Indianapolis to Carmel and is used by approximately 1.2 million visitors each year. It is so popular that developers are building thousands of high-end condominiums and townhouses along or near the trail.

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Wabash River, Ross Hills Camp
The Wabash River and its tributaries have played an important part in Tippecanoe’s development and identity. A greenway presents an opportunity for interpreting and preserving sites associated with the Wabash. (Image: WRT)
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Foundation for a Wabash Greenway

Resource Values and Public Interest

The scope of a greenway concept must be sufficiently broad to encompass all resource values of interest to the public. The community has consistently recognized the Wabash River and its tributaries as significant resources worthy of protection and enhancement. Recent plans and studies, including park and recreation plans, comprehensive plans, areawide development plans, land use regulations, visioning workshops, conferences, special studies, and public attitude surveys have consistently supported restoration and conservation of the river and its tributaries. Organizations with interests in natural resource conservation, historic preservation, and outdoor recreation have been engaged in initiatives and programs on the Wabash for many years.

An Overview

Consideration of different greenway concepts for the Wabash River and its tributaries requires an understanding of its landscape setting, its cultural heritage, local land use conditions and trends, the public’s perception of the river’s fundamental resources and values, and who might be involved in the greenway’s development and management.

Natural History

The Wabash’s landscapes and the river ecosystem provide the foundation for greenway design. The pre-glacial Wabash River is more than 350 million years old. Today, sand and gravel deposited by the Illinoian and Wisconsin glaciers 20,000 years ago covers the ancient valley. Advancing glaciers left deposits of unsorted till (i.e., a mix of sands, silt, clay and boulders). When the glaciers retreated, they left outwash deposits of sand and gravel. Those deposits are primarily responsible for today’s post-glacial landscapes, in which the Wabash River ecosystem resides. Prior to human settlement, those landscapes supported prairies and woodlands. The Wabash floodplain was composed of extensive bottomland forests, and the river and its tributaries provided habitats for diverse populations of fish and other species.

Cultural History

A Wabash River greenway could contribute to an understanding and appreciation of the region’s past, through the preservation and interpretation of historic sites associated with the river. The river and its tributaries have played an important part in the region’s historical development and its identity. The earliest human settlement probably occurred in the Wabash valley 8,000 to 10,000 years ago. A succession of cultures followed, beginning with hunting and gathering tribes and progressing to agricultural societies about 3,000 years ago. The first European settlement occurred at Fort Ouiatenan in 1717.

Land Ownership and Use

When developing a concept for a Wabash River greenway it is essential to carefully consider existing private ownership and land use. Outside of the urban centers of Lafayette and West Lafayette, the primary use of the river’s 100-year floodplain is agriculture on relatively large parcels of land. Several significant park and conservation lands also characterize the floodplain. Numerous smaller residential parcels extend into the floodplain, although the majority of the structures are located outside of the floodplain. Land uses adjacent to tributaries of the Wabash River are primarily agriculture, residential uses, and woodland. Collectively, these conditions essentially reflect an existing agricultural greenway concept for the Wabash River’s main “valley floor.” This is reinforced by Tippecanoe County’s floodplain ordinance that prohibits developed uses within the 100-year floodplain of the river and its tributaries.
Natural History
Prior to human settlement, post-glacial landscapes supported prairies and woodlands. These landscapes remain visible throughout the county and provide habitat for diverse populations of flora and fauna. (Image: WRT)

Cultural History
An important component of the region’s history, the Wabash and its tributaries were central to the area’s development and identity. A greenway presents an opportunity for interpreting and preserving historic sites associated with the Wabash. (Image: WRT)

Land Ownership and Use
Outside of Lafayette’s and West Lafayette’s urban centers, land uses within the 100-year floodplain are primarily in agriculture, residential, and woodland. (Image: WRT)
Landscape Setting

Landscapes associated with the Wabash River and its tributaries reveal the region’s geologic past and contribute to an understanding of its history and pattern of human settlement. The map of Tippecanoe County (opposite page) depicts the river’s setting – a pre-glacial river valley altered by glacial till and outwash deposits. The block diagram presents a finer-grain expression of those landscape features as revealed by the parent material of local soils. The varying suitabilities of such landscapes for human settlement and different land uses have shaped the way the county looks today.

These landscape distinctions provide a foundation for considering the rationale, configuration and prospective uses of a potential Wabash River greenway, as further explained below.

The River’s Alluvial Corridor

The Wabash River channel, sloughs and islands are situated within a corridor of alluvial sediments, i.e., river-worked silts, sands and gravels. The environment is highly dynamic and continuously shaped by river flows that change daily, seasonally and from one year to the next. As a result, the river channel and its islands and sloughs are constantly adjusting to varying conditions. Flooding is the corridor’s most dramatic indicator of its changeability, evidenced by its dangerous spring torrents and peaceful late summer low flows. Flooding frequencies are measured in terms of river discharge rates (cubic feet per second) and flood stages (river heights) associated with statistical events (e.g., 2-year or 100-year storms). Although such predictive statistics are very informative, they can be misleading, because more than one 100-year storm event can occur within a short time period. Other flooding characteristics, such as the duration of flooding, are particularly important for agricultural uses.

Outwash Terraces

Relatively broad, flat to gently sloping terraces of glacial outwash occur above the alluvial corridor. Natural levees of more steeply sloping lands often separate the terraces from the alluvial corridor. In places, tributaries and sloughs dissect the terraces, providing riparian connections to the river. Sections of terraces adjacent the alluvial corridor are subject to periodic flooding from the river. Although subject to local tributary flooding, such terraces tend to be above the 100-year mapped floodplain. Extensive development has generally occurred on the terraces in the cities of Lafayette and West Lafayette. Elsewhere, agriculture and rural residential uses characterize the terraces.

Transitional Slopes and River Bluffs

Rising above the river’s alluvial corridor and terraces, these moderate to steeply sloping lands vary from subtle to distinctive elements of the river landscape. Generally not visually prominent, transitional slopes occupy relatively small areas between the terraces and more steeply sloping bluffs. They are in agricultural or residential uses.

Found extensively on the till plain on the north side of the Wabash, river bluffs rise 100 to 150 feet above the terraces. Slope gradients vary from under 10 to more than 30 percent. Headwater drainages, that flow seasonally or only during storm events, may extensively dissect the bluffs. The tops of bluffs, i.e., their “rims,” are favored locations for house sites as are their more moderately sloping lands. Otherwise, they are generally wooded.

Tributary Valleys

The Tippecanoe River, Wildcat Creek, and Wea Creek, as well as many smaller tributaries have created well-defined valley features. The geometry of these valleys are small-scale versions of the alluvial corridor, terrace, and bluff geometry of the Wabash River. Being more prominent at their confluence with the river, they progressively become smaller upstream and eventually taper out in the till plain plateau. Farming practices over the past 150 years may have increased the size of these valleys.

Till Plains

Outside of the alluvium corridor and outwash terraces, most of Tippecanoe County is a glacial till plain. Soils vary in texture from boulder-sized fragments to fine clays, with a heterogeneous mixture of intermediate grain sizes.

1 Data sources include publications of the Indiana Geological Survey, and the USDA Natural Resource and Conservation Service, as well as consultation with Professor Phillip Owens, Agronomy Department, Purdue University.
The Wabash River channel, slough and islands are located within a corridor of alluvial sediments. These sediments include river-worked silts, sands and gravels. (Image: WRT)

Agriculture and residential uses characterize the broad, flat to gently sloping terraces of glacial outwash. (Image: WRT)

Tributary valleys are small-scale versions of the Wabash River’s alluvial corridor, terrace, and bluff geometry. (Image: WRT)

The countywide map (left) illustrates the river’s setting in a pre-glacial river valley altered by glacial till and outwash deposits. Zooming in on a portion of the county (right), presents a finer-grain examination of the landscape features based on soil parent material.
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The first rate lands lie on the Wabash all the way to the lakes on the most beautiful stream in my recollection… It is a beautiful and valuable stream -- the water generally perfectly clear and transparent -- exhibiting a clean gravelly bottom. It abounds with fish of various kinds -- bass, pickerel, pike, perch, catfish, etc. The catfish are of every size up to 122-1/2 lb. [S.S. McCord, Travel Accounts of Indiana 1679-1961 (1815), excerpted by Gammon (1998)]

Prior to human settlement, forests and prairie communities occurred throughout the Wabash River watershed. The forest and prairie conditions enabled absorption of precipitation by vegetation and the soil, resulting in the conditions observed by European settlers when they arrived in the early 18th century. The Wabash ecosystem supported a diversity of aquatic and terrestrial communities.

An extensive forest along the river’s alluvial corridor contributed significantly to ecosystem health. Major species were black willow, silver maple, American elm and cottonwood, with other species such as sycamore, red elm, cork elm, box-elder, white ash, and hackberry also present (Lindsey, 1961). Species on the higher terraces shifted to those less tolerant to flooding. The mature riparian forests played a key role in reducing erosion and maintaining river channel depths and habitat diversity. Although rapid erosion toppled large trees, species such as elms whose roots stabilized both trees and banks, moderated the rate of erosion.

1The Wabash ecosystem encompasses the combined physical and biological components of the environment. Primary sources are Gammon, (1998) and Armitage and Rankin (2006).
Today, the Wabash River ecosystem is very different than it was prior to human settlement. The area’s early 18th century explorers would not recognize the contemporary landscape. Agricultural, rural, suburban and urban land uses have replaced most of the native forest and prairie communities. Today, the ecosystem is fundamentally different due to a combination of stresses including “flashier” stormwater runoff patterns and altered flow regimes, nutrient enrichment, high sediment loads, degraded substrate habitats, and pollutants from municipal, industrial and other sources. Portions of the Wabash and its tributaries now fail to meet Indiana’s water quality standards. Although stresses originating on the Wabash upstream of Tippecanoe County have contributed significantly to these conditions, they are also the result of land uses within the watersheds of tributaries and river segments within Tippecanoe County.

Loss of unfragmented forest in the alluvial corridor has been a major cause of the ecosystem’s reduced biodiversity. At least a half dozen fish species are no longer found in the river and the abundance of other species is greatly reduced. Some stream segments no longer support stable populations of native species because of changed habitat conditions and reduced invertebrate populations that are an essential food source. As diversity has declined, non-native invasive species capable of surviving and flourishing in disturbed habitats have increased.

Yet, in spite of these disappointing conditions, the Wabash River ecosystem is also experiencing positive trends. The main stem is freeflowing with no dams. In recent decades, communities have upgraded and improved wastewater treatment plants and implemented best management practices for handling stormwater runoff and reducing nonpoint source pollutants. More ecologically-friendly farming practices such as riparian buffer strips are in wider use. Efforts are underway to acquire and restore ecologically important lands. Although fish populations are reduced from their historical populations, the river still contains a relatively large number of its original fish and mussel species. A river greenway and tributaries conservation program could contribute significantly to the continued improvement of the Wabash River ecosystem.

Riparian Buffers
Riparian buffers contribute to water quality by filtering contaminants and non-point source pollutants, stabilizing banks, and increasing water storage capacities during flooding. Aquatic habitat is also enhanced as tree cover increases dissolved oxygen and lowers water temperature. (Image: WRT)
Cultural Heritage

Native Americans who settled along the Wabash for its fresh water and its fish and mussels found within the river valley everything they needed to support their ways of life. The river and its banks provided them with both land and water modes of transportation. European settlers added another enduring layer of history and culture. In the 17th century, French and English fur traders traveled along the river corridor and established trading posts for exchange of goods with the Native Americans. The river became a well-traveled mode of transportation for many forms of commerce. The Wabash and Erie Canal was built to complement the transportation capacity of the river. Many settlements were established along the Wabash; some are now thriving cities such as Lafayette… while others have faded away. The land transportation along the Wabash began as deer trails, followed by Native American travel routes, which evolved into settlers’ wagon trails, and then into highways and railroads connecting towns and cities…


A Wabash River greenway would provide a unique opportunity to learn about the area’s history, historic sites, traditions, values and the generations of people whose lives were connected to the river and its tributaries. A greenway interpretive plan could provide the blueprint for creating a coherent set of experiences enabling visitors to learn about the area’s cultural heritage. Such a plan could tie together the many historic sites within or near the greenway. The documentaries produced by the Natural Heritage of Indiana Project provide an example how the greenway’s interpretive themes might be organized. [see http://www.naturalheritageofindiana.org/index.html]
Summarized below are data summarizing tax parcels and land uses associated with the 100-year floodplain and adjacent slopes along the Wabash River and its tributaries in Tippecanoe County.

**Current Land Use**

Floodplain and Adjacent Slopes

<table>
<thead>
<tr>
<th>Description</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-Year floodplain</td>
<td>40,380</td>
</tr>
<tr>
<td>Adjacent slopes over 10 percent</td>
<td>16,365</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>56,745</strong></td>
</tr>
</tbody>
</table>

AFFECTED TAX PARCELS

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>13,146</td>
</tr>
<tr>
<td>Acreage in floodplain and/or adjoining slopes</td>
<td>56,745</td>
</tr>
<tr>
<td>Acreage outside of floodplain and adjoining slopes</td>
<td>51,905</td>
</tr>
<tr>
<td><strong>Total acreage</strong></td>
<td><strong>108,650</strong></td>
</tr>
</tbody>
</table>

County Tax Parcel Classifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural lands</td>
<td>79,530</td>
</tr>
<tr>
<td>Residential, commercial and industrial lands</td>
<td>21,120</td>
</tr>
<tr>
<td>Lands in public or nonprofit ownership</td>
<td>8,000</td>
</tr>
<tr>
<td><strong>Total acreage</strong></td>
<td><strong>108,650</strong></td>
</tr>
</tbody>
</table>

Tippecanoe County

<table>
<thead>
<tr>
<th>Description</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total acreage</td>
<td>319,360</td>
</tr>
<tr>
<td>Agricultural uses (2008 Agricultural Census)</td>
<td>218,300</td>
</tr>
</tbody>
</table>

1 “Affected parcels” are those that include all or portions of the 100-year floodplain and/or adjacent slopes over 10 percent.

Estimates are based upon land use classifications in Tippecanoe County tax records, and GIS data layers for the 1000-year floodplain and slopes over 10%. Land use classifications include:

- Agriculture. Vacant land, grain/general farming, poultry, fruit and nut farms, and other agricultural uses.
- Residential, Commercial, Industrial. Developed lands and unplatted and planted vacant lands.

3 Tippecanoe County’s agricultural tax parcels are defined slightly differently than 2008 Agricultural Census.
### Potential Greenway Participants

**Government Bodies and Nonprofit Organizations - Partial Listing Only**

<table>
<thead>
<tr>
<th>Tippecanoe County</th>
<th>Academic Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Commissioners</td>
<td>Purdue University</td>
</tr>
<tr>
<td>County Council</td>
<td>Tippecanoe School Corporation</td>
</tr>
<tr>
<td>Area Plan Commission</td>
<td>Ivy Tech Community College</td>
</tr>
<tr>
<td>Convention and Visitors Bureau</td>
<td></td>
</tr>
<tr>
<td>Highway Department</td>
<td></td>
</tr>
<tr>
<td>Parks and Recreation Department</td>
<td></td>
</tr>
<tr>
<td>Partnerships for Water Quality</td>
<td></td>
</tr>
<tr>
<td>Public Library</td>
<td></td>
</tr>
<tr>
<td>Soil and Water Conservation District</td>
<td></td>
</tr>
<tr>
<td><strong>City of Lafayette</strong></td>
<td></td>
</tr>
<tr>
<td>Mayor’s Office</td>
<td></td>
</tr>
<tr>
<td>City Council</td>
<td></td>
</tr>
<tr>
<td>Community Development Department</td>
<td></td>
</tr>
<tr>
<td>Economic Development Commission</td>
<td></td>
</tr>
<tr>
<td>Parks and Recreation Department</td>
<td></td>
</tr>
<tr>
<td><strong>City of West Lafayette</strong></td>
<td></td>
</tr>
<tr>
<td>Mayor’s Office</td>
<td></td>
</tr>
<tr>
<td>City Council</td>
<td></td>
</tr>
<tr>
<td>Parks &amp; Recreation Department</td>
<td></td>
</tr>
<tr>
<td>Go Greener Commission</td>
<td></td>
</tr>
<tr>
<td><strong>Other Local Government Jurisdictions</strong></td>
<td></td>
</tr>
<tr>
<td>Town of Battle Ground</td>
<td></td>
</tr>
<tr>
<td>Town of Shadeland</td>
<td></td>
</tr>
<tr>
<td>Tippecanoe County Townships</td>
<td></td>
</tr>
<tr>
<td><strong>State of Indiana</strong></td>
<td></td>
</tr>
<tr>
<td>Department of Agriculture</td>
<td></td>
</tr>
<tr>
<td>Department of Natural Resources</td>
<td></td>
</tr>
<tr>
<td>Department of Environmental Management</td>
<td></td>
</tr>
<tr>
<td>Historical Bureau</td>
<td></td>
</tr>
<tr>
<td>Geological Survey</td>
<td></td>
</tr>
<tr>
<td>Wabash River Heritage Corporation</td>
<td></td>
</tr>
<tr>
<td><strong>Corporations</strong></td>
<td></td>
</tr>
<tr>
<td>North Central Health Services</td>
<td></td>
</tr>
</tbody>
</table>

### Institutional Setting

Tippecanoe County is fortunate to have substantial capacity to plan, develop and manage a greenway. Significant resources exist at all levels of government and within the nonprofit sector. Moreover, the county and greater Lafayette area have considerable experience in successfully undertaking collaborative efforts to accomplish shared goals, as evidenced by joint initiatives such as the Lafayette Railroad Relocation Project, the Wabash River Enhancement Corporation, and other endeavors. These successes and current initiatives and programs provide a strong foundation for collaborative moving forward with a Wabash River greenway.
Public Perceptions of the River

In the winter of 2009, the Wabash River Enhancement Corporation and Purdue University conducted a survey of local residents’ perceptions and awareness of the Wabash River. Approximately 850 county residents received the survey, 313 of whom responded by paper copy or by completing the survey online.

As shown in the accompanying table, the Wabash River received a mixed report card. Approximately 50 percent or more of the respondents felt that the river is dirty and indicated that they spend little time engaged in river-related recreation activities or even thinking about it. On the other hand, more than 90 percent felt that the river could be made cleaner and healthier and that it provides important habitat for birds and other wildlife. More than 65 percent indicated that the river is an important recreational, educational and economic resource.

The survey also queried people on the likelihood of their participation in various river enhancement activities. Findings suggested a generally strong inclination to participate through website visits, voting on Wabash issues, and intervening to prevent someone from polluting the water. There was significantly less interest in attending public meetings, joining a local organization focused on the Wabash, or making personal financial contributions.

Selected Survey Results - Public Perceptions and Awareness of the Wabash River

<table>
<thead>
<tr>
<th>Perception of the Wabash River</th>
<th>Strongly Agree or Agree</th>
<th>Neutral</th>
<th>Disagree or Strongly Disagree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>The condition of the river has gotten so bad that I only feel safe looking at the water.</td>
<td>49.1</td>
<td>20.7</td>
<td>20.4</td>
<td>9.7</td>
</tr>
<tr>
<td>The river is dirty and seems to be getting worse.</td>
<td>50.7</td>
<td>23.8</td>
<td>16.0</td>
<td>9.5</td>
</tr>
<tr>
<td>I like outdoor activities but I don’t recreate along the Wabash.</td>
<td>58.4</td>
<td>15.4</td>
<td>23.1</td>
<td>3.0</td>
</tr>
<tr>
<td>I don’t spend much time thinking about the river.</td>
<td>54.7</td>
<td>22.7</td>
<td>22.0</td>
<td>0.7</td>
</tr>
<tr>
<td>There is potential to make the river cleaner and healthier.</td>
<td>90.7</td>
<td>4.7</td>
<td>1.6</td>
<td>3.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Your Opinion of the River</th>
<th>Strongly Agree or Agree</th>
<th>Neutral</th>
<th>Disagree or Strongly Disagree</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>The river corridor provides important habitat for birds and other wildlife.</td>
<td>90.9</td>
<td>6.0</td>
<td>0.7</td>
<td>2.3</td>
</tr>
<tr>
<td>The river is important because it supports farming, industrial and municipal processes.</td>
<td>66.2</td>
<td>19.9</td>
<td>5.4</td>
<td>8.4</td>
</tr>
<tr>
<td>The trails along the river provide an excellent setting for hiking or biking.</td>
<td>69.8</td>
<td>15.6</td>
<td>5.1</td>
<td>9.5</td>
</tr>
<tr>
<td>The Wabash is important because it links us to the story of the interactions between native nations and European settlers.</td>
<td>67.6</td>
<td>22.6</td>
<td>7.1</td>
<td>5.4</td>
</tr>
<tr>
<td>The river is an essential asset for promoting our community’s future economic prosperity.</td>
<td>60.0</td>
<td>26.8</td>
<td>10.5</td>
<td>9.8</td>
</tr>
<tr>
<td>Parks along the Wabash provide opportunities for children to play and interact with nature.</td>
<td>78.1</td>
<td>11.1</td>
<td>0.0</td>
<td>5.4</td>
</tr>
<tr>
<td>I really wish there was a place to eat outside and enjoy the river.</td>
<td>67.4</td>
<td>25.5</td>
<td>4.0</td>
<td>3.1</td>
</tr>
<tr>
<td>Local funding to revitalize the river is a great investment in our future.</td>
<td>69.3</td>
<td>20.5</td>
<td>5.7</td>
<td>4.4</td>
</tr>
</tbody>
</table>

1Source: Your Views of the Wabash River, prepared by Natural Resource Social Science Lab, Department of Forestry and Natural Resources, Purdue University. Funded by Living Laboratories on the Wabash 2009
Prospectus for a Wabash River Greenway Partnership

Foundation for a Wabash Greenway

The Wabash River and its tributaries, along with the landscapes of which they are a part, are among the most prominent features of Tippecanoe County and the communities of Greater Lafayette. They contribute significantly to defining the area’s identity and special sense of place. They have profoundly shaped the region’s history and provided resources that have helped sustain life for generations of natural communities and the people who have lived here.

Today, a diverse community values the river. The public is generally interested in maintaining a healthy river ecosystem. Residents value the connection that the river provides to the region’s past. They are aware of the potential river-related opportunities for exercise, experiencing solitude, observing nature, developing personal skills, and learning first-hand about the world in which they live. A Wabash River greenway could provide the means by which these values could be realized.

**Fundamental Resources and Values**

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1 A term used by the National Park Service which refers to those features, systems, processes, experiences, stories, scenes, sounds, smells or other attributes, including opportunities for visitor enjoyment, determined to warrant primary consideration during planning and management because they are critical to achieving a park’s purpose and maintaining its significance.

Wabash River
The Wabash River and adjoining river-related lands provide a variety of potential opportunities for recreation and education that could greatly enhance the quality of life in the community. (Image: WRT)

Wabash Landscape
Unique landscapes, such as the fen at Prophetstown State Park, contribute to the Wabash region’s identity and distinct sense of place. (Image: WRT)
**Evolution of the Wabash River as a Resource**

<table>
<thead>
<tr>
<th>The Region that Once Was</th>
<th>Early European Settlement</th>
<th>A Developing Region</th>
<th>Emergence of a New Economy</th>
<th>The Region of the Future</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Late 18th Century</strong></td>
<td><strong>Early 19th Century</strong></td>
<td><strong>Late 19th Century</strong></td>
<td><strong>Early 20th Century</strong></td>
<td><strong>Late 20th Century</strong></td>
</tr>
<tr>
<td>A Native American culture relies on hunting and gathering, and practicing a sustainable low-impact agricultural system.</td>
<td>Western immigration begins as European settlers discover the region’s productive agricultural soils, particularly valley bottoms. Settlers use the river and its tributaries for transportation, water power, and as a source of food. Early town development begins. As early settlers begin to convert prairie to agricultural land, changes start to occur in the Wabash River ecosystem.</td>
<td>An agricultural and manufacturing economy evolves. The cities of Lafayette and West Lafayette expand and Purdue University is established. Railroads replace early transportation by river and canal. Major changes to the Wabash River ecosystem occur as agriculture replaces forest and prairie throughout much of the watershed. Urban development encroaches on the river and its tributaries. Water quality conditions deteriorate as a result of urban and agricultural stormwater and releases of sewage and industrial wastes.</td>
<td>An economy based on agriculture, manufacturing and education continues to expand and diversify, as technology and service-related businesses emerge in the region. The public starts to express concern for water quality, habitat protection, and land conservation. Efforts begin to restore the Wabash River ecosystem through improved agricultural practices, sewage treatment, environmentally sensitive development practices, and land conservation.</td>
<td>Continued changes in the regional economy occur. The perceived need to succeed in a global economy stimulates efforts to attract more diverse business investment. Citizens and local leaders become aware of the importance of attractive lifestyle amenities to public health and the marketability of the community to prospective investors. Community recognition grows regarding the role of the Wabash River in enhancing the region’s quality of life and promoting sustainable economic development. The community implements a coordinated enhancement program for the Wabash River ecosystem, made possible through a collaborative partnership composed of public, private, and non-profit partners.</td>
</tr>
</tbody>
</table>

Note: Concept adapted from Natural Heritage of Indiana Project: [http://www.naturalheritageofindiana.org/index.html](http://www.naturalheritageofindiana.org/index.html)
Planning for a Wabash River Greenway

- 30 Greenway Vision and Guiding Principles
- 32 Greenway Delineation Options
- 34 Greenway Elements
- 41 Tributaries and Headwaters Conservation
- 42 Greenway Design, Development and Management Issues
- 43 Future Prospects

Prairie at Prophetstown State Park
A network of trail and pathways throughout Tippecanoe County would provide access to residential neighborhoods, commercial areas, and other parks and open spaces outside the greenway. The existing Wabash Heritage trail could serve as the spine of a greater trail system connecting spur trails offering users diverse trail experiences and varying opportunities for use through diverse landscapes. (Image: WRT)
Greenway Vision and Guiding Principles

A statement of the vision for a Wabash River greenway would bring clarity to its purposes and prospective benefits. The following draft statement suggests one approach to communicating such a vision.

The Wabash River Greenway is a valuable economic and community asset. Composed of a network of public and private lands along the river and its tributaries, the greenway protects and sustains fundamentally important natural resources and values of the river ecosystem, providing for their enjoyment while leaving them unimpaired for the enjoyment of future generations. Opportunities for recreation and education along the greenway enhance public understanding of the community’s natural history and its cultural heritage, and contribute to a healthy lifestyle. The greenway’s success is the outcome of a community-wide collaboration by public, private, and non-profit partners who share a common goal of enhancing the quality of life for residents and visitors.

Many actions have already occurred along the Wabash which contribute to realizing this greenway vision. Examples are landowner assistance programs, floodplain zoning, acquisition and development of county and state parks and nature preserves, habitat restoration projects, development of the Wabash Heritage Corridor Trail, water quality monitoring, and events that bring attention to the Wabash. Collectively, these actions could provide the basis for a coordinated strategy for a Wabash River greenway. In turn, a greenway could provide opportunities to integrate these actions, possibly creating a synergy to accomplish goals that may be more difficult to achieve independently.

A Wabash River greenway could also serve as a means for achieving goals adopted in various planning initiatives during the past decade. They include goals stated in the Vision 2020 Plan for the Future of Greater Lafayette, the Wabash Heritage Corridor Plan, the Indiana State Trails, Greenways, and Bikeways Plan. Similarly, assessments of the Wabash ecosystem by James Gammon, The Nature Conservancy, the Indiana Department of Natural Resources and others, call for resource enhancement and management practices that could be promoted by the greenway.

To realize the vision for a Wabash River greenway, the greenway must be regarded as a management concept, rather than simply a branding effort or a colored map. To succeed, it would require a management structure with the capacity to be action-oriented. Although a single entity could provide leadership coordination and other functions serving the greenway, some kind of partnership would be necessary. Reflecting the philosophy of Vision 2020, that partnership should be inclusive, consensus-based and evolving.

The above draft vision statement is intended to serve as a potential starting point for public dialogue about the greenway concept. It is likely that clarification and refinements would result from such deliberations.

Some Guiding Principles

Guiding principles provide the next level of management specificity needed to implement the greenway concept, as expressed in the vision statement. An illustrative set of principles are summarized below. Although numbered, they are in no particular order of importance.

1. Protect Fundamental Resources and Values
   Resource protection and enhancement would support and build the capacity of current programs to improve water quality, restore habitats, protect cultural resources and provide lands for public recreation, as well as stimulate new initiatives where needed.

2. Connect the Greenway to Other Places
   The greenway should be a part of community life. Wherever possible, it should connect neighborhoods, schools, commercial areas and other activity centers. Where land connections are not feasible, publicly accessible trails and other public rights-of-ways should provide greenway access.

3. Provide Opportunities for Many Greenway Experiences
   The greenway should provide opportunities for diverse recreational experiences for people of all ages, interests, incomes and physical abilities, provided they are consistent with
its resource protection goals. Priority should be given to providing those experiences based upon the greenway’s fundamental resources, rather than to experiences that could be better located elsewhere. Visitors should be able to experience the greenway by foot, bicycle and, where appropriate, motorized vehicles and horseback.

4. **Use the Greenway as a Classroom and Laboratory**
   The greenway should offer educational and interpretive opportunities that are “place-based,” i.e., enabling a learning experience based upon first-hand field observations. Interpretive themes and media should be developed in collaboration with existing educational institutions and programs. For example, the Natural Heritage of Indiana Project, has produced educational material in the thematic areas of: (1) the Indiana that was, (2) life in the water, (3) life on land, and (4) a changing landscape. The greenway should also serve as a resource for applied research and demonstration projects, and for developing educational curricula ranging from elementary education to graduate school. Current initiatives such as Purdue’s Living Laboratories on the Wabash could facilitate educational programming.

5. **Work Cooperatively with Landowners**
   Greenway management should include mechanisms that would build positive relationships with public, nonprofit and private landowners. It should give particular attention to the interests and potential concerns of private landowners through newsletters, educational and other events, and by providing technical assistance when requested. Existing landowner outreach programs such as those provided by the Soil and Water Conservation District and Indiana DNR, should serve as the starting point for this effort.

6. **Employ Best Management Practices and Sustainable Designs**
   Greenway management should support state-of-the-art practices in resource management and sustainable design, tapping into a broad base of existing knowledge sources. One example would be The Sustainable Sites Initiative, sponsored by the American Society of Landscape Architects and its partners, which provides sustainable practices in landscape design, construction, operations and maintenance. Working with others, greenway management should provide opportunities to demonstrate such practices.

7. **Promote Public Awareness and Support**
   The greenway should promote public awareness and support of its vision, programs and projects through a combination of printed, web-based and video media, as well as greenway-sponsored events. It should begin with an assessment of the many outreach programs that already exist, to determine how it can complement them.

8. **Build on Past Accomplishments and Current Initiatives**
   Wherever possible, the greenway should incorporate and seek to benefit from past accomplishments and current initiatives.

9. **Promote Successful Partnerships**
   Wherever possible, greenway management should collaborate with others whose goals and activities have a potential impact on the greenway. A diverse set of relationships should exist among greenway management and business interests, recreation user groups, academic institutions, resource management agencies and nonprofit conservation organizations.

10. **Provide Greenway Leadership**
    A Wabash greenway will require sustained leadership to provide the ongoing planning, cooperation and investments required for its ultimate success.
Prospectus for a Wabash River Greenway Partnership

Greenway Delineation Options

Several alternative concepts exist for defining the geographic limits of a Wabash River greenway.

Riparian Corridor Concept
Perhaps the narrowest form that a greenway could take would include riparian buffers along the Wabash River and its tributaries. A greenway composed of riparian buffers would provide a generally continuous band of permanent vegetation along the river and its tributaries. The buffers would help to control bank erosion, retard the movement of sediment and nutrients into the water, and enhance aquatic and terrestrial habitats. This concept would build on recent successful programs of the Soil and Water Conservation District (SWCD). The SWCD is working with numerous landowners who are voluntarily changing farming and land use practices to create riparian buffers along the banks of the Wabash River and its tributaries.

A number of choices exist for defining the extent of a greenway composed of riparian buffers. Riparian buffers could be defined by criteria such as flooding frequency (e.g., a two-year storm event), prescribed minimum dimensions, occurrence of certain soil types associated with frequent flooding conditions, or some combination of these factors. Limiting the greenway to a narrow riparian corridor presents challenges related to design and maintenance of recreational facilities and trails, given the frequent occurrence and violent nature of flooding in these areas.

Floodplain Concept
A larger greenway would encompass lands within the floodplain of the Wabash River and its tributaries. The 100-year floodplain defined by the Federal Emergency Management Agency (FEMA) is the most common floodplain delineation and is generally used as the basis for floodplain zoning. Mapping accuracy of statistical events can be an issue, particularly in an area where suburban development is changing flooding frequencies and stages. FEMA periodically updates such maps, as it has recently for Tippecanoe County.

There is a history of county regulation of land use within the 100-year floodplain. In 1965, Tippecanoe County enacted a floodplain zoning district (FP) prohibiting dwellings and other enclosed and roofed buildings within the 100-year floodplain. Dwellings existing at that time are treated as non-conforming structures and uses by the zoning ordinance. They are required to be removed if substantially damaged. The county’s FP district has been very effective in preventing new construction and reducing the numbers of residences and other buildings in the floodplain. The FP district, along with other provisions of the county’s Unified Zoning Ordinance, could be an important building block for a Wabash River greenway. However, as with any zoning regulation, its standards are occasionally subject to change, as demonstrated in 2008 when the Indiana legislature amended the Indiana Code to enable local governments to permit, under certain conditions, the reconstruction of houses in floodplains.

Floodplain and Contiguous Lands Concept
In this concept the greenway would expand to include the full extent of property parcels that extend from the river to upland areas above the 100-year floodplain. Lands within the 100-year floodplain would remain undeveloped under floodplain zoning, whereas land above the 100-year floodplain would continue to be developable in accordance with applicable zoning and subdivision regulations. Greenway managers would work cooperatively with landowners to promote compatible uses on developable upland. Landowners could potentially willingly sell or donate their land for conservation and/or public access purposes.
Greenway Landscapes Concept
This concept, which would probably be integrated with one or more of the other greenway concepts, envisions a greenway composed of diverse landscapes that provide the environmental context for the Wabash River and its tributaries. With guidance provided by qualified professionals, land acquisition would focus on sites that are good examples of landscape features, such as bedrock outcrops, outwash terraces, natural levees, sloughs, till plain features and tributary valleys. Such sites would be managed as a network of nature preserves used for research and educational purposes, as well as compatible recreational activities. This approach would reflect the missions of conservation organizations such as NICHES and The Nature Conservancy, as well as the management objectives for public lands, such as Prophetstown State Park where a program is underway to restore native prairies and woodlands.

Links and Nodes Concept
This concept envisions a greenway composed of parks linked by linear corridors of trails and roadways that would be accessible and safe travel routes for pedestrians and bicyclists. Linear corridors of protected lands would follow waterways or other natural features, and road and utility rights-of-ways. Examples include the Wabash Heritage Trail that connects Davis Ferry and Tippecanoe Battlefield parks, and the planned extension of the trail through Prophetstown State Park. Although the concept could focus on the Wabash River and its tributaries, it could also be more broadly developed as the basis for a metropolitan greenway network serving the urban, suburban and rural areas of Tippecanoe County. An initial assessment of the potential for such a metropolitan network suggests the potential for creating a greenway configuration that envelops the cities of Lafayette and West Lafayette in a “figure 8” pattern along the Wabash River, certain tributaries, and road rights-of-way.

Developing a Preferred Strategy
A Wabash River greenway need not be based on just one greenway delineation concept. These concepts are not mutually exclusive and each has its own merits and limitations. Consideration should be given to combining these concepts in developing a broad basis for the greenway. Although such a strategy would have greater complexity than a single spatial concept, it is more likely to result in greater benefits in the long run. Flexibility and time would be required for its implementation. Numerous details would need to be worked out, requiring input and support from landowners, government agencies and other interests. Therefore, an implementation program based upon measured steps would ultimately be more successful than one based upon a fixed blueprint with arbitrary deadlines.
Greenway Elements

A Wabash River greenway could be a homogeneous park entirely in public ownership under a single land management entity. However, a mixed-use and mixed-ownership approach is likely to be more successful, particularly for potentially affected landowners. As summarized in the chart to the right and presented in more detail in the following pages, there are six potential greenway elements.

Planning and implementation for the greenway would be an ongoing process. The character and mix of land uses would evolve over time, depending upon the following factors:

- The approach and priorities adopted in managing the greenway’s development, as determined by the public agencies and nonprofit organizations involved.
- The sustained capacity of the greenway’s developers and managers to provide leadership and expertise, and obtain the necessary funding.
- The extent to which private landowners support the greenway.

Given those variables, the greenway’s long-term future could range from the continuation of current circumstances to a model for public and private cooperation that would provide a unique balance between public and private interests.

<table>
<thead>
<tr>
<th>Land Use Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lands in Current Agricultural Use</td>
<td>Lands in active agricultural use on which “river friendly” farming practices are encouraged to minimize soil loss and fertilizer runoff, and to enhance natural habitats. Such lands are not open to the public unless permitted by the landowner.</td>
</tr>
<tr>
<td>Private Conservation Lands</td>
<td>Privately-owned lands managed primarily to achieve resource conservation goals, including but not limited to woodlands, wetlands, native prairies and cultural resources. Such lands are not open to the public unless permitted by the landowner.</td>
</tr>
<tr>
<td>Parklands and Preserves</td>
<td>Lands in public or nonprofit ownership, managed for conservation, recreation and educational purposes to which public access is allowed in accordance with the policies of individual site managers.</td>
</tr>
<tr>
<td>Greenway Development Sites</td>
<td>Locations providing facilities and services contributing to the public’s enjoyment and appreciation of the greenway, including but not limited to trail and water access sites, food services, recreational equipment sales and rentals, outfitting and guiding services, and overnight accommodations.</td>
</tr>
<tr>
<td>Greenway-Related Lands</td>
<td>Mostly privately-owned lands within or adjacent to the 100-year floodplain, currently not in agricultural uses. They include parcels which may or may not have residences or other structures, some of which could be further subdivided and developed.</td>
</tr>
<tr>
<td>Greenway Travel Routes and Way-Finding</td>
<td>Land trails, water trails and roads designated as greenway travel routes, with signage and other way-finding media.</td>
</tr>
</tbody>
</table>
The lands, that we call first rate corn-lands, are generally alluvial bottom lands, or walnut or burr oak table-lands. These lands, properly cultivated, produce about the average of sixty-five bushels of corn to the acre; some of the very best, produce eighty bushels to the acre, and are cultivated for successive years in corn.


Lands Currently in Agricultural Use

The evolution of agriculture along the Wabash River and its tributaries over the past 200 years is a story of the settlement of America’s frontier and the forces of change in agricultural products and markets, technology, science, labor, transportation and public policy. While today’s farmers face many of the historic challenges of farming in an alluvial corridor, such as flooding, soil management, weed control and seasonal unpredictability, much has changed since early settlement when typical yields were 65 bushels of corn per acre, compared to average yields that approach 200 bushels today. Today’s farmers must also grapple with the complexities of a global economy, governmental programs, and other forces of a changing world.

Although the Wabash River’s alluvial corridor has a rich history of different kinds of farming, high yielding corn and soybean crops are likely to continue as the preferred form of agriculture for the foreseeable future. Other enterprises such as vegetables, landscape nurseries, hybrid poplars (for cellulose production) and livestock operations may offer potential opportunities but they also face the same formidable challenges of frequent flooding.

A Wabash River greenway would recognize that substantial parts of the corridor would remain in agricultural uses, thereby providing for a working landscape that contributes to the sustainability of the region’s agricultural economy and communities. The greenway could support programs that currently provide technical and financial assistance to the farming community, particularly those addressing environmental concerns such as water quality, river bank stability, and habitat protection. It could also potentially provide new mechanisms for lease or purchase of certain agricultural lands from willing sellers for the purpose of managing such lands in a manner consistent with greenway principles. Such transactions could result in a variety of outcomes, including but not limited to long-term leases of lands to farmers with conservation stipulations, as well as supporting and helping to demonstrate new agricultural practices and products. In some circumstances, those transactions could also result in the conversion of certain areas to natural habitats managed as private conservation lands or for greenway parks and preserves.

The greenway would complement and partner with the Tippecanoe County Soil and Water Conservation District (SWCD), Purdue University initiatives and other programs that promote agriculture in Tippecanoe County, such as conservation tillage and soil and water education. The greenway would be consistent with the SWCD’s vision to “promote stable soils, healthy forests and riparian buffers, clean steams and water resources, productive farms and sustainable communities,” as outlined in its 2005 - 2010 Strategic Plan. Similarly, it would be very supportive of Indiana’s River Friendly Farmer Program, sponsored by Indiana’s Soil and Water Conservation Districts, the Indiana Department of Agriculture, and the USDA Natural Resources Conservation Service.

Indiana’s River Friendly Farmer Program

Program Goal
To publicly recognize and reward farmers who do an excellent job of managing their farms in an economically and environmentally sound way that protects and improves Indiana’s soil and water resources for future generations.

Criteria

- Soil loss on all land is at or below tolerable soil loss levels, either by maintaining 30% crop residue or other appropriate tillage or crop rotation measures.
- Field soil tested at least once every three years.
- Fertilizer applied at correct application rates based on soil tests. Realistic yield goals used in setting fertilizer application rates.
- Nutrient credits given for manure applied and legumes used in rotation.
- Use of nitrogen best management practices, as recommended by Purdue University.
- Phosphorus fertilizer banded or incorporated when applied on crop land, or incorporating practices used to keep soluble phosphorus from reaching water sources.
- Livestock manure utilization as part of farming operation. Fencing used to exclude livestock from sensitive areas. Manure storage facilities having at least 120 days storage capacity.
- Livestock facilities currently approved by the Indiana Department of Environmental Management or in the process of being approved.
- Pesticides and their containers handled, stored and disposed of in accordance with labeled recommendations.
- Non-cropland areas are managed and/or enhanced in an environmentally appropriate manner.
- Farm records are kept to track inputs and conservation practices.
Existing Riparian Buffer along the Wabash River
Establishing a continuous riparian buffer would enhance water quality, bank stability, and habitat connectivity (Image: WRT)

Prophetstown Prairie
Restoring agricultural lands to natural areas, such as prairies, enhances water and soil quality while supporting a diverse native flora and fauna. (Image: WRT)

Private Conservation Lands
The greenway’s private conservation lands would include all or parts of properties managed to achieve resource conservation objectives. Such lands could include any or all of the following:

1. Riparian areas along the Wabash River and its tributaries.
2. Patches of existing woodlands, wetlands, prairies or other natural areas within the alluvial corridor of the river and its tributaries as well on adjacent terraces and bluffs.
3. Agricultural lands to be restored to natural areas, for example, as part of a plan to provide an interconnected system of natural areas.
4. Agricultural lands managed primarily for non-commercial purposes as part of an adopted plan for providing wildlife habitat.
5. Cultural resources listed on or determined eligible for listing on the National Register of Historic Places, or otherwise recognized by the Indiana Historical Bureau or another qualified agency or nonprofit organization.

The Tippecanoe County Soil and Water Conservation District (SWCD) has set a high priority on establishing riparian buffer zones and establishing habitats in targeted sensitive areas, for which it provides annual progress reports. For example, in 2008 the SWCD identified a need for 4,691 acres of buffer lands along 107 stream miles in five priority watersheds. Such buffers would protect and improve water quality by preserving/restoring trees, shrubs and grasses along rivers and streams.

The greenway’s recognition of private conservation lands would reflect the concerns of landowners with conservation interests but not necessarily willing to allow for public access. Such lands would not be open to the public unless expressly permitted by the landowner on an informal basis or by more formal arrangements such as leases, licenses or by right-of-way easements.

Private conservation lands may be established in a number of different ways, depending upon the circumstances. Examples include:

- Voluntary private stewardship of private conservation lands which the landowner could discontinue at any time, e.g., as a result of a decision to resume commercial agriculture or to sell the property to another party.
- A commitment to maintaining conservation lands such as riparian buffers or wetlands for a specified period of time, for example as a condition to cost-share financial support to the landowner.
- Conveyance of a permanent conservation easement or deed restriction with legally binding restrictions, either donated or sold by the landowner to a qualified agency or nonprofit organization.
- Use of land use regulations such as riparian buffer requirements in the Tippecanoe County Unified Subdivision Ordinance.

In partnership with others, the greenway could complement and support existing public and nonprofit programs seeking to promote conservation lands by:

- Landowner education and outreach.
- Assisting landowners in developing long-term plans for their holdings, to address conservation considerations in a manner compatible with their other objectives and interests.
- Helping to design and execute conservation easements or other arrangements in establishing private conservation lands.
- Assisting with the practical management challenges of private conservation lands, through technical assistance and direct involvement in addressing on-site issues such as control of invasive species.
- Fundraising to support private land conservation programs in the greenway.
- Enhancing the public’s recognition and appreciation of private land conservation.
Greenway Parks and Preserves

The greenway’s parklands and preserves would be composed of lands dedicated for conservation, recreation or educational uses, to which public access would be allowed in accordance with the policies of individual property managers. These lands would include state, county and municipal parks, as well as lands (referred to collectively as “preserves”) held by organizations primarily for conservation purposes, such as land conservancies and historic preservation organizations.

Various greenway delineation options exist, each having different implications as to the extent to which existing parklands and preserves would be included in the greenway. An argument could be made for including all such lands within or contiguous to the alluvial corridor or 100-year floodplain. However, the logic for this becomes more subjective with increasing distances from the river, as in the case of the extensive acreage of Prophetstown State Park. The best resolution of the issue of inclusivity would come from the participation and support of managers of existing parklands and preserves.

A major factor in such deliberations is likely to be what it would mean for existing parklands and preserves to be part of a Wabash River greenway. Although it is assumed that independent management of each of the greenway’s existing parklands and preserves would continue, consideration should be given to potential opportunities for coordination and cooperation that would promote the greenway concept while serving the interests of individual managers. A few examples of potential collaborative efforts are:

- Planning, design and developing boat access sites and interconnecting trails.
- Sharing of information, expertise and equipment to address specific management issues, e.g., habitat restoration, invasive plants and deer populations.
- Fundraising and acquisition of key parcels.
- Interpretive planning and programming.
- Public education regarding opportunities associated with individual sites, as well as with the greenway as a whole.

Also envisioned are new greenway parks and preserves that would be acquired as opportunities present themselves. Wherever possible, parks and preserves should be assembled and managed to create an interconnected network of conservation lands that provide for public enjoyment and functioning natural landscapes, reflecting state-of-the-art conservation biology. Such a network would be preferable to isolated patches of protected lands within a greenway.

The continued active involvement of state, county and local park agencies would be essential to developing the greenway’s parkland and preserve network. While each agency would expect to follow its own mandates, policies, and plans, special effort should focus on fostering interagency coordination and cooperation within the greenway.

Additionally, public park agencies in collaboration with nonprofit conservation organizations such as NICHES and The Nature Conservancy, should consider management unit-oriented resource conservation and restoration strategies, while providing trails, interpretive media, and visitor services consistent with such management objectives. A greenway management unit focused on resource conservation and restoration could be one of several kinds of management units within a state or county park. It could also be the basis for stand-alone preserve properties acquired and maintained by organizations such as NICHES, which has already made a commitment to acquiring preserves along the Wabash River. Further development of the concept could lead to recognition of several types of greenway preserves with varying degrees of emphasis given to conservation and public access.

In addition to coordinated planning and management, the ultimate success of a network of greenway parklands and preserves would require effective funding and land acquisition strategies. It is assumed that funding would come from diverse sources, including public and private sources, land gifts and bargain sales. Requirements for conservation subdivision in the Tippecanoe County Unified Subdivision Ordinance could also contribute to development of greenway preserves.
Greenway Development Sites

Greenway development sites are locations that provide facilities and services contributing to the public’s enjoyment and appreciation of a greenway. Such sites would provide any or all of the following functions:

- Access to greenway trails (pathways), with supporting facilities such as parking, restrooms and picnic areas.
- Access to greenway water trails, with boat put-in/take-out improvements, as well as other necessary supporting facilities (see Hierarchy of Water Access Sites to the right).
- Food services such as restaurants, food take-outs, small grocery stores and farm markets.
- Recreational equipment and merchandise sales and rentals, serving the needs of greenway users such as hikers, bikers, fishermen and boaters.
- Greenway transportation and guide services.
- Overnight accommodations convenient to greenway users, such as B&Bs, motels, campgrounds and dormitories.
- Greenway event sites, providing space and facilities for events, such as river festivals, races and sojourns.

Greenway development sites would be owned, developed and managed through a variety of circumstances and arrangements. For example, trailhead and water access sites would generally be associated with publicly-accessible parklands and preserves. A B&B or a commercial campground could also provide an access site. Recreational equipment rentals and commercial guide services could be provided on privately-owned property or on lands leased by nonprofit conservation organizations.

In addition to financial concerns related to construction and ongoing operations, a major challenge would be to ensure consistent high quality design, management and maintenance for greenway development sites. Although difficult under multiple owners having different management philosophies and capacities, a Wabash River greenway would be most successful if development sites share certain common characteristics that would become readily recognizable by greenway users.

Consistent signage is one obvious example. The greenway would also benefit greatly if consistent standards are used for pathway and water access sites, trail design and other common facilities, such as parking and picnic areas. Equally important would be consistent management practices such as maintaining clean bathrooms and regular trash pick-up.

The greenway’s overall appearance should be comparable to the quality of facilities provided by Prophetstown State Park and the Tippecanoe County Park and Recreation Department. Ideally, a greenway user should have the same assurance of quality that has become the norm at most units of the national park system. A number of strategies may warrant consideration in determining how to achieve this goal, such as:

- Adoption of standard design guidelines for certain kinds of greenway facilities.
- Coordinated planning, design and funding for site improvement projects, such as construction of new water access sites.
- Cooperative maintenance agreements or coordinated procurement of maintenance services from private vendors.

Other more unusual approaches might also warrant consideration, such as a quality recognition program for greenway development sites. Common to all strategies is the need for coordination and cooperation among the diverse site managers within the greenway.

Hierarchy of Water Access Sites

All water trail access sites would be designed for non-motorized paddle and rowing craft. Where feasible, sites would have ramps to accommodate motor boats for recreational and administrative uses (e.g., river monitoring and emergencies). Different types of sites might include:

1. Small sites for public put-ins and take-outs for non-motorized craft only, with provision for occasional launching of small motorized craft for administrative purposes only (e.g., 15’ Jon boat), parking for 6 to 10 cars (with some overflow capacity for peak periods), and portable toilets (during warm weather months).
2. Small put-in/take-out sites with public boat launching ramps for motorized and non-motorized craft, with sufficient space for vehicles with trailers, and portable toilets.
3. Wabash “landings” with a greater capacity to handle non-motorized and motorized craft, with more substantial visitor facilities (e.g., year-around restrooms, picnicking and play areas, boat rental concessions, overnight accommodations for campers, and parking space for greenway events).
Greenway-Related Lands

Greenway-related lands encompass mostly privately-owned parcels within or adjacent to the 100-year floodplain, currently not in agricultural uses. Many of these parcels extend beyond the floodplain limit and include residential development. However, a number of these parcels are entirely vacant. Greenway-related lands also include larger parcels that could be subdivided and developed if they comply with applicable zoning, subdivision, and other regulations. These lands are related to the greenway because their current or potential uses could significantly affect the greenway’s character. They could remain indefinitely as related lands, unless acquired for greenway purposes.

The greenway’s management organization should have a related-lands program. This program would seek to build and maintain positive relationships with private landowners. It would also seek to ensure, to the extent practicable, that current and future uses of private lands would be compatible with greenway goals. Ideally, the program would use a combination of outreach strategies such as technical assistance, printed materials, website postings, and landowner events.

The related lands program should include technical assistance to landowners on matters ranging from current management concerns to planning for future ownership and land use. Providing technical assistance would require a field specialist with expertise in landowner advisory services, such as those provided by the Soil and Water Conservation District, Extension Service, and land trust professionals. The field specialist should be qualified to assess situations and make recommendations regarding which related lands should be acquired or otherwise protected to benefit the greenway.

Measures of success for the related lands program would be:

- Widespread landowner support of the greenway and recognition that it offers amenities and recreation opportunities beneficial to their properties.
- Willingness of landowners to use the greenway’s professional advisory services.

The program should also help greenway managers remain sensitive to landowner concerns, such as trespass by greenway users on private lands.

In addition to its strictly voluntary components, it may be appropriate for the related lands program to include a regulatory dimension. This would provide assurances that future subdivision and land development of such lands would occur in a manner consistent with greenway goals. This might include measures such as:

- Incorporating greenway concerns into plan submission requirements for subdivision and land development applications.
- Adopting planning, architectural design and landscape buffer requirements that would mitigate development impacts on greenway resources.
- Encouraging or requiring conservation design of subdivision that would conserve environmentally sensitive lands (such as steep slopes) within the greenway.
Greenway Travel Routes and Way-Finding

Trails and pathways would be aligned within or along the edge of the greenway network. The system of trails and pathways would accommodate a wide variety of users including hikers, cyclists, walkers, runners, and equestrians. Trails would not be open for motorized vehicles such as all-terrain vehicles (ATVs), snowmobiles, and dirt bikes. Special accommodation would need to be made for mountain bikers. Trailheads that integrate various trail-user amenities such as parking, restrooms, orientation signage, and trash containers would be strategically located throughout the trail and pathway system.

The potential greenway trail network is large. Pathways, therefore, would likely be owned and managed by multiple agencies and organizations. A pathway management plan would be needed to establish consistent design standards, use policies and their enforcement, trail maintenance, and signage. Pathway design standards should consider administrative access for maintenance, patrolling, and emergencies.

The designation of a water trail along the length of the Wabash River and several of its major tributaries (i.e. Tippecanoe, the Wildcat, and others deemed appropriate for these purposes) would provide a water-based route for paddlers and boaters to enjoy the natural, scenic, and recreational features of the greenway. Incorporating boat launches and landings would ensure access to these features and provide boaters short or long trip options from different points along the length of the water trail.

Water access sites would include small sites for non-motorized boats, larger sites for motorized and non-motorized boats, and Wabash “landings” with a full range of visitor facilities to support motorized and non-motorized boats (see Hierarchy of Water Access Sites on page 38). The water trail, and its associated access sites and landings would be integrated with the greenway’s pedestrian trail system, allowing paddlers to picnic, use restroom facilities, and enjoy other activities such as hiking and camping. All water access and landing sites would be verified by the paddling community, engineers, and ecologists to maximize recreational value and minimize impact on ecological resources.

As with trails and pathways, multiple agencies or organizations would likely own and/or manage water access and landing facilities. A water trail management plan would be required to establish consistent design and management standards. Water access and landing facility design standards should consider administrative access for maintenance, patrolling, and emergencies.

Roadways would provide vehicular access to future greenway facilities and amenities. The roadway network would be composed of state and local roads that provide views of the greenway along certain stretches, as well as physical access at designated locations. Though the greenway network would rely largely on existing roads, new roads might be required to facilitate legal vehicular movement and access, improve “sense of place,” and emphasize the greenway network as a unified, single entity. Where appropriate, roadways would accommodate pedestrian pathways (i.e. trails and sidewalks) and bike pathways (i.e. trails and on-road bike lanes). Other improvements such as landscaping, consistent wayfinding signage that integrates a greenway network logo and other distinguishing features (e.g. guard rails, retaining walls, etc.) would also be incorporated into roadway design. The existing State of Indiana Scenic Byway along River Road should be expanded where feasible.

Interpretive sites would also be incorporated into the Wabash River greenway. Interpretive sites would provide opportunities for place-based “story-telling” on a wide variety of greenway themes. In the broadest sense, themes could include the natural processes that have shaped the Wabash landscape, early human settlement in the area, or other significant historical events. Interpretive sites could be associated with a variety of locations, such as roadways, park overlooks, themed trails or pathways, and water access points. Interpretive media could include outdoor panels, interpretive kiosks, brochures, guidebooks and marked stations, etc.
**Tributaries and Headwaters Conservation**

**Overview**

In *The Wabash River Ecosystem*, James Gammon recommended the restoration of greenbelts along the river and its tributaries. The recommendation reflected his conclusion that the riparian corridor of the river and its tributaries were critically narrow and even nonexistent in far too many places to buffer the river.

In their *Assessment of Threats to the Biological Condition of the Wabash River Aquatic Ecosystem of Indiana*, Brian Armitage and Edward Rankin cited stressed tributary conditions, resulting in high nutrient and sediment loads into the river, and the necessity of rehabilitating headwater stream systems for the recovery of the Wabash River’s main stem. While describing common problems of altered flow regimes and the export of nutrient and sediment loads downstream, they also noted that opportunities to transform or assimilate nitrates and phosphorus are greatest in small headwater streams, and that it may be possible to gradually rehabilitate headwater streams while maintaining agricultural drainage and productivity.

More recently, WREC hosted a *Wabash Stream Sampling Blitz* on September 18, 2009. More than 180 volunteers monitored 210 stream sites, collecting data on water temperature, orthophosphate, nitrates, copper and E-coli. Initial survey results indicated a wide range of tributary conditions ranging from healthy streams to streams whose water quality fell far short of state water quality standards.

In 2009, WREC and Purdue University’s Living Laboratories on the Wabash, launched the first phase of a watershed management plan for the *Region of the Great Bend of the Wabash*. The Great Bend includes a 29-mile reach of the Wabash River which receives drainage from 478 square miles, encompassing most of Tippecanoe County as well as portions of Warren, White, Fountain and Montgomery Counties. The plan will address the needs of 19 sub-watersheds ranging in size from approximately 15 to 36 square miles. The effort involves diverse interests, represented by a project steering committee and five subcommittees. A draft report (November 2009) (available on WREC’s website), provides a comprehensive overview of watershed conditions and trends, as well as recent and current watershed planning efforts.

**How Tributaries and Headwaters Fit into a Wabash River Greenway**

The importance of the river’s tributaries and headwater areas raises the question as to the extent to which they should be part of a Wabash River greenway. A number of options exist for delineating the greenway (see pages 32 and 33), but they do not explicitly address the tributary question. Although there may be little doubt that the downstream sections of major tributaries such as Wea Creek and the Tippecanoe River, could be logical components of a greenway along the Wabash’s main stem, including all tributaries to their headwaters would require further consideration. Although an extensive network of tributary greenway lands may be desirable as a means of achieving resource protection and other greenway goals, other management tributary management approaches may be worth considering, pending the outcome of the above-mentioned Great Bend watershed management plan.

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1 As used in this document, “tributaries” include the channels and valley settings of permanent and seasonal streams; “headwaters” typically encompass broad swales just above those tributary features.


**Happy Hollow Park**

Establishing parks at tributary headwaters – such as Happy Hollow Park – will promote improved water quality throughout Tippecanoe County. (Image: WRT)
Greenway Design, Development and Management Issues

1. Public Views toward a Greenway Concept
Greenways have protected some of America’s most cherished landscapes, while providing recreation opportunities and enjoyment for millions of people. They have contributed to public health and economic development in many communities across the nation. But to be successful, they require public support and sustained commitment to become a reality. What benefits would a Wabash River Greenway bring to Tippecanoe County and how much public support would it receive?

2. How to Delineate a Greenway
A number of alternatives exist for delineating a Wabash River greenway. It could be limited to relatively narrow rights-of-ways following a pathway system along the river. It could be a network of narrow corridors that connect with larger parks. It could encompass a larger area consisting of floodplain lands, terraces, adjoining bluffs and creek valleys. It could also evolve as opportunities arise, without a definite design. What would be the appropriate shape and size for a Wabash River greenway?

3. Greenway Ownership and Land Use
A Wabash River greenway could be envisioned as a river park that would ultimately be under public ownership to realize its fullest potential. Alternatively, as suggested in this prospectus, a mixed ownership concept would more closely reflect the region’s land use tradition. It would be composed of agriculture and other private land uses, while also promoting conservation on private lands and establishment over time of a network of greenway parklands and preserves. Is that the right approach?

4. Public Access and the User Experience
A Wabash River greenway concept envisions enhanced public access and recreation opportunities which would include a network of trails and water access sites serving a variety of users. Described as “greenway development sites” in this prospectus, the greenway could also provide opportunities for businesses such as restaurants, recreational equipment sales and rentals, guide services and overnight accommodations. To what extent would such facilities be used by local residents and area visitors?

5. Impacts on Current Landowners
The mixed-use concept, as described above, would ensure all current landowners that they would continue to enjoy their rights as property owners within the greenway. Although a number of government agencies have the authority to condemn land for public purposes, it is assumed that such powers would be used rarely, if ever, to acquire greenway lands. This prospectus emphasizes the importance of building positive relationships with landowners, as well as the need to address ways to design future development that would minimize its impacts on the greenway. What kinds of landowner concerns need to be addressed?

6. Managing a Greenway
Selecting the most realistic and effective approach to managing a greenway would depend upon the resolution of a number of other issues, such as land ownership. Management arrangements would place a strong emphasis on greenway partnerships whose functions could include information-sharing, coordination and cooperative ventures for the greenway’s development. Also needed would be management mechanisms for assuming leadership and oversight of the greenway. What kinds of management approaches should be considered at this time?

7. Greenway Budget and Funding Strategies
Short of a large infusion of funds through a voter-approved referendum or a major gift, it is likely that a greenway would be developed and managed in measured steps, building upon the capacities of existing public agencies and nonprofit organizations already involved with the Wabash River and its tributaries. Although new funding opportunities should be considered, realistically development of a greenway may depend largely upon current funding sources. How could the greenway contribute towards funding strategies that would benefit participating agencies and nonprofit organizations?

8. Moving Forward and Setting Priorities
If a Wabash River greenway concept is to receive sufficient support, what should be the priorities for moving forward with its implementation? How should an implementation plan be developed and who should be involved?
As demonstrated throughout the United States, greenways provide a means for defining and protecting the unique identity of communities, rural countrysides and entire regions, while providing, recreational, educational and economic benefits to residents and visitors alike. As a place, Tippecanoe County cannot be described or fully understood without mentioning the Wabash River and its tributaries, and explaining how they have helped to shape the lives of American Indians, early settlers and those who followed in the 19th and 20th centuries. Their waters and associated landscapes have had a major influence on the region’s historic development.

Their current and future contribution to the region’s character and quality of life may differ from the past, but it is no less significant. In short, the Wabash River and its tributaries remain one of the region’s most important “placemakers.” For these reasons, a Wabash River greenway has emerged as a promising concept for preserving, restoring, managing, interpreting, and enjoying the Wabash’s unique resources. It would also bring together the varied but largely complementary interests of government agencies, nonprofit organizations and landowners along the Wabash River and its tributaries.

The good news is that the foundation for a Wabash River greenway already exists, as a result of actions taken by the public, nonprofit and private sectors. For many years, floodplain lands have been appropriately zoned to control development. Floodplain agriculture, dating from the early 19th century, continues to contribute to the region’s economy and is employing practices addressing important environmental concerns, with the help of agencies such as the Tippecanoe County Soil and Water Conservation District. In recent decades, state, county and municipal governments have established new parks along the river and its tributaries. These parks provide public water access and opportunities to protect and restore natural areas. Nonprofit conservation organizations have acquired nature preserves and provided for improved public water access. New trails have been built and more are on the drawing board. The real estate market has long recognized the value of building homes with frontage on wooded riverine valleys. There is growing interest in incorporating conservation lands into residential subdivisions. Particularly important have been efforts to clean-up pollutant discharge from wastewater treatment plants and stormwater systems, as well as to undertake watershed assessments and water quality monitoring programs.

At the same time, the Wabash River greenway concept must address significant challenges if it is to become a reality. For example, public support for a greenway may be compromised by a misconception that the river is dirty and not fit for human contact. The river can be dangerous, especially during periods of flooding, while at other times it is difficult to navigate because of low water. Limited public access sites have made it difficult for the public to discover the Wabash and gain an appreciation for its many assets. For fishermen, the Wabash’s native fish populations have been threatened by non-native fish such as the silver carp. And in many places, natural habitats for wildlife are fragmented, in poor condition or simply absent. But on balance, the possibilities for establishing a successful greenway far outweigh the liabilities. There is little doubt that the human, technological, and institutional resources exist within Tippecanoe County to get the job done. It would require both innovative and practical planning, collaboration among many partners, and time.

Future Prospects
CONSULTANT TEAM

Wallace Roberts & Todd, LLC. Planning, Urban Design, and Landscape Architecture
Elizabeth Clarke, AICP, Principal-in-Charge
Christopher Atkinson, AICP, ASLA, Project Manager
Michael Clarke, Senior Planner
Kelly Ream, Planner

Conservation Design Forum. Environmental Planning
Jerry Wilhelm
Jason Navota

Stantec Consulting Services, Inc. Contract Managers and Cost Estimates
Joe Eigel, PE, PhD, Contract Manager

US Army Corps Contract Managers
Enhancement of the Wabash River corridor as a priority community development project grew out of Vision 2020, a Lafayette-West Lafayette, Tippecanoe County regional comprehensive planning initiative completed from 1999 to 2001. Vision 2020 identified enhancement of the Wabash River corridor as the most important multi-jurisdictional community development project facing the Greater Lafayette area.

As recommended in Vision 2020, a community coordinating committee was formed with leadership provided by North Central Health Services (NCHS). Its assignment was to consider local options and resources and to review river projects nationwide to identify a successful strategy to accomplish river corridor enhancement. Due to the project's anticipated fiscal cost, the committee recommended that the project be community-driven rather than local government-driven. It further recommended that a non-profit corporation lead the corridor enhancement effort, following models of successful river enhancement elsewhere in the country. The management strategy selected recognized the need for the new non-profit agency to partner closely with local government. The strategy also envisioned an evolving leadership structure so that regional and county leaders could be included in its management and governance.

In 2004, the Wabash River Enhancement Corporation was formed as a non-profit agency by the cities of Lafayette and West Lafayette, Tippecanoe County, and Purdue University. Initial funding was provided through a generous $500,000 grant from North Central Health Services. WREC began active operations in 2005 with the hiring of Stanton Lambert, its executive director. WREC is governed by a nine-member board of directors including:

- Mayor, City of Lafayette
- Mayor, City of West Lafayette
- Tippecanoe County Commissioner representative
- Tippecanoe County Council representative
- Purdue University President or designee
- City of Lafayette Park and Recreation Board representative
- City of West Lafayette Park and Recreation Board representative
- Tippecanoe County Park and Recreation Board representative
- Wabash River Parkway Commission representative

For more information, contact:
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Excerpted from
http://www.wabashriver.net/wrec-history/