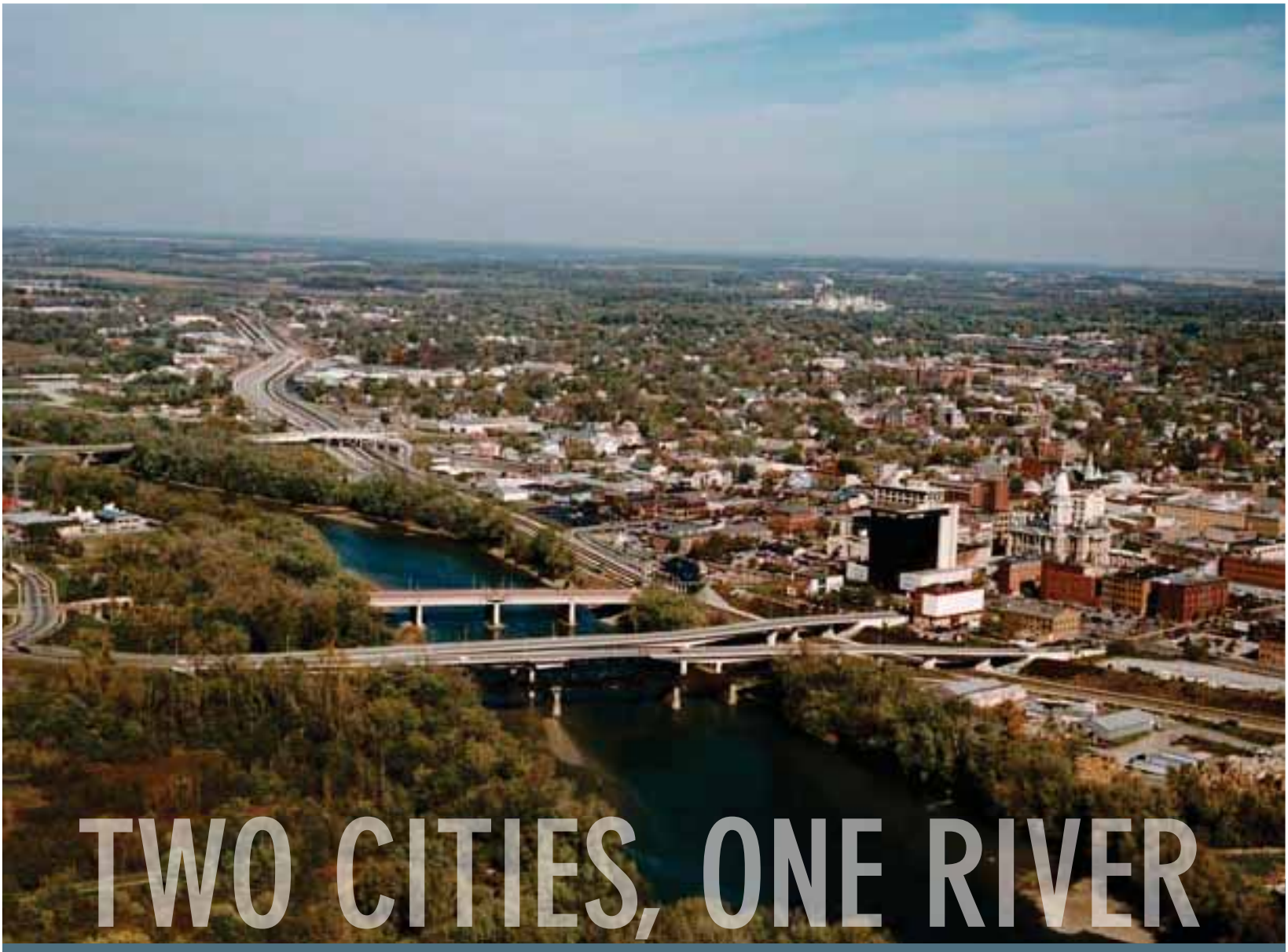

TWO CITIES, ONE RIVER

Master Plan for the
Wabash River Urban Corridor

City of Lafayette

City of West Lafayette

A Project of
The Wabash River Enhancement Corporation

NOVEMBER 2011

WRT

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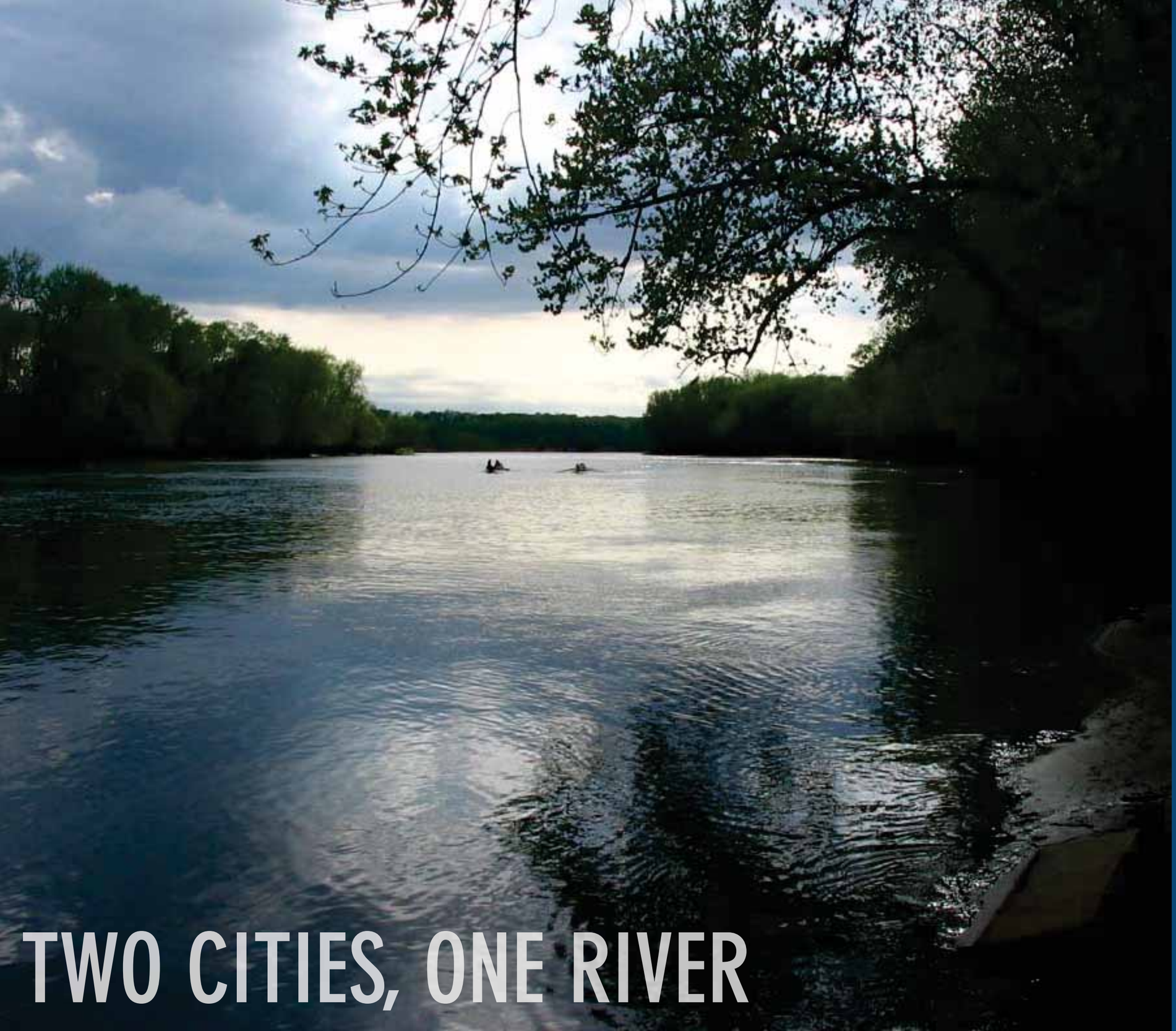
TWO CITIES, ONE RIVER | Master Plan for the Wabash River Urban Corridor



TWO CITIES, ONE RIVER

Letter from the Mayors

Meeting Two: review of plan alternatives. Image | Stanton Lambert

TWO CITIES, ONE RIVER

To the Citizens of the Wabash River Valley,

Over the past several years, we have had the privilege of working with many of you to develop a vision: **Two Cities, One River**. Supported by local philanthropy and guided by the Wabash River Enhancement Corporation (WREC), we now have a plan to leverage one of our region's greatest assets—the Wabash River.

Historically, the Wabash River was a bustling channel of commerce for the City of Lafayette, which was laid out by river trader William Digby in 1825. However, as the railroad gained national prominence in the 19th and 20th centuries, shipping and development turned their backs on the Wabash River. Successive shifts in the economy left a natural resource with great potential just waiting to be tapped. Enhancement of the Wabash River corridor was identified in Vision 2020—a Lafayette-West Lafayette/Tippecanoe County community visioning process completed in 2001—as the most important multi-jurisdictional community development project facing the region. A restored river ecology and new recreational amenities can ignite a new regional economy that values quality of life.

Building on recent successes our cities and Tippencanoe County have had with orienting new development to the river and providing access to and along the river's edge, a community coordinating committee led by North Central Health Services (NCHS) was formed to identify a successful strategy to accomplish river corridor enhancement. Building on the river's beauty, the plan seeks to restore a healthy river ecosystem, create recreation and related amenities, and sustainable economic development to create a unique quality of life and make the region a place of choice for all, especially those in the region's identified growth sectors of high technology and the bio-life sciences.

We both serve on the board of WREC with our Tippecanoe County and Purdue colleagues and have been privileged to lead and participate in the planning effort that produced the vision and plan in this document. Under the guidance of WREC's Executive Director Stanton Lambert, the planning process produced city, county, and regional plans. As elected officials and citizens, we are proud of the 20-year vision in **Two Cities, One River**. We stand ready to help promote the enormous potential of the Wabash as a source of economic and environmental invigoration for the cities of Lafayette and West Lafayette—improving water quality, removing barriers to waterfront access, adding public waterfront recreation, removing derelict waterfront uses, and adding sustainable development to valuable waterfront property.

Through a process of broad community participation, with focus group meetings, a series of public input workshops, and presentations of the vision, the two sides of the river came together to support goals that will continue to guide the implementation of the plan. These five overarching goals are to: **Access** the river from both cities; **Cultivate** healthy ecosystems and create a healthy balance between economic development and environmental management; **Engage** the whole community; **Connect** the cities to each other; and **Elevate** the area to create a sustainable place of choice. These words serve as the outline of a story yet to unfold—a story that we believe paints a bright future for our citizens:

Our work does not end with the publication of this document. Rather, the vision is a starting point for continuing dialogue and specific actions, which we believe are the keys to realizing the Wabash River's sparkling potential. It lays out a framework for public spaces and growth that can help us continue to prosper well into the 21st century.

Tony Roswarski
Mayor, City of Lafayette
President, Wabash River Enhancement Corp.

John Dennis
Mayor, City of West Lafayette
Treasurer, Wabash River Enhancement Corp.

TWO CITIES, ONE RIVER

Executive Summary

Vision

Goals

Sustainable, Integrated Planning

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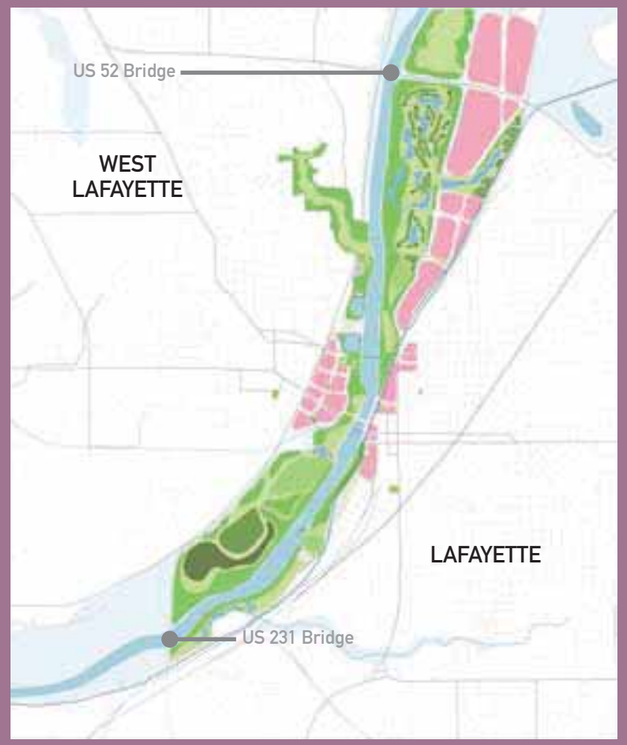
TWO CITIES, ONE RIVER

VISION

Two Cities, One River, is not just an expression of our two cities' desire to connect to the river, but also a vision of the future where the River is transformed into a healthy, beautiful centerpiece of a whole, interconnected community.

This vision informed the following conceptual plan to enhance the urban corridor over the next 20 years as resources and opportunities arise. The plan sets forth comprehensive enhancements for the Wabash River corridor as well as short term priority projects.

While the residents of the region and WREC are sensitive to current financial challenges, river enhancement is viewed as an essential investment in making the region more economically competitive. Building on the river's beauty, the plan seeks to restore a healthy river ecosystem and create recreation and related amenities to create a unique quality of life and make the region a place of choice—especially for attracting and retaining employees in the high technology and bio-life sciences sectors.



GOALS

During the early stages of community outreach and input, the community identified 5 widely supported goals that guided development of the plan. Each plan recommendation is framed in support of these goals and expresses a desire for an environmentally and economically responsible approach to effecting change along the Wabash.

- Goal 1: **Access** from the cities to the river, and create a healthy balance.
- Goal 2: **Cultivate** healthy ecosystems.
- Goal 3: **Engage** the whole community.
- Goal 4: **Connect** the cities to each other.
- Goal 5: **Elevate** the area to a sustainable place of choice.

SUSTAINABLE, INTEGRATED PLANNING

The broad experience and multi-jurisdictional perspective of the WREC board and staff led them to recognize the importance of taking a comprehensive approach to understanding the conditions and opportunities of the region. Therefore, WREC undertook development of a set of plans at the different scales necessary to address interrelated issues of the cities, county, and region. This plan, Two Cities, One River, for the urban reach of the Wabash within Tippecanoe County is one of that set, which also includes:

Master Plan for the Wabash River Greenway

Addresses public access and land management along the entire length of the Wabash River in Tippecanoe County and calls for a creation of a Wabash River greenway.

The Region of the Great Bend of the Wabash River Watershed Management Plan

Targets water quality improvement and education within the Wabash River watershed encompassing much of Tippecanoe County and portions of surrounding counties. This effort is being done in conjunction with Purdue University's Living Laboratories on the Wabash, an interdisciplinary research center. Collectively, the plans call for coordinated action that better manages and enhances the resources of the watershed, the cities, the river, and each river corridor site.

WREC's strategic plan includes a long-range goal of extending the project into adjacent Warren, Fountain, and Carroll counties. A multi-county extension of the project would require corresponding additions to project leadership and changes in organizational structure. With these changes, further corridor enhancements in those counties could be undertaken.

FROM PLANNING TO ACTION

Government entities and stakeholders within Tippecanoe County have demonstrated great effectiveness in conceiving and implementing large scale plans, as with the $186M Railroad Relocation Project completed in 2003. Based on the stakeholders' experience in effecting positive change, the Corporation board and advisors have emphasized feasibility, environmental best management practices, cost-benefit analysis, and alignment with potential funding sources in developing these project proposals.

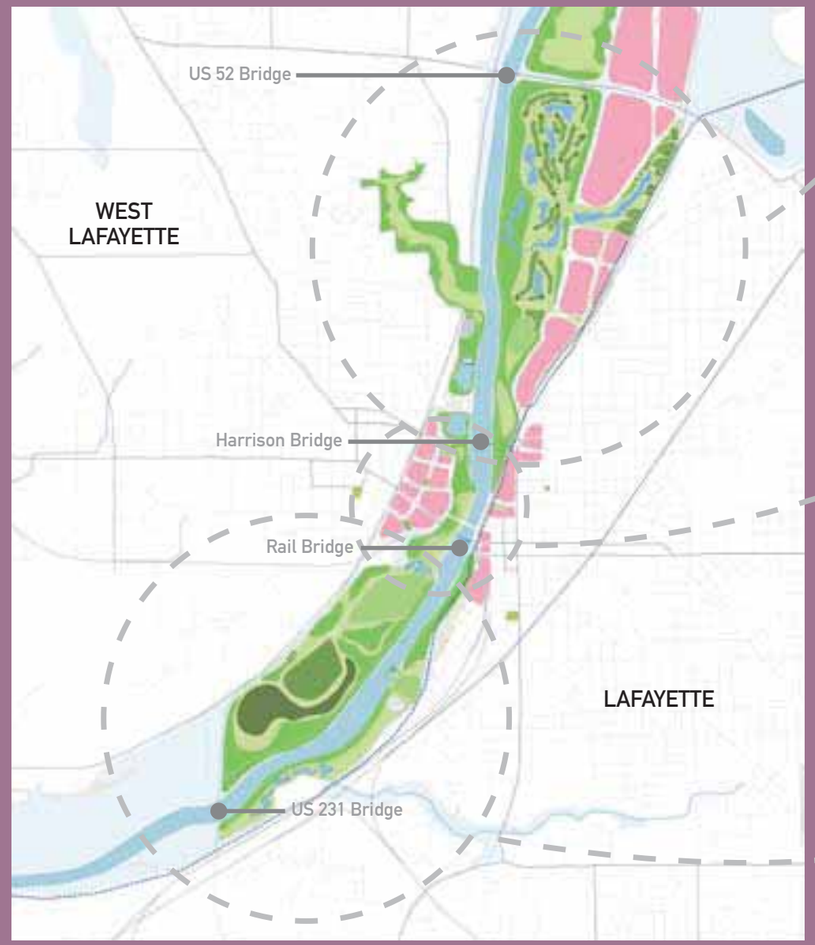
TWO CITIES, ONE RIVER

PLAN PRIORITIES

Through public meetings, surveys, and interviews, the community indicated a preference for projects that lie at the heart of the urban section for the first phases of work. They expressed a desire to reconnect Lafayette and West Lafayette by repairing and, literally and figuratively, bridging the fabric of central city development on both sides of the river.

PLAN REACHES

This plan articulates three reaches along the urban section of the Lafayette/West Lafayette stretch of the Wabash River—the Northern Reach, the Central Reach, and the Southern Reach. The Two Cities, One River vision is carried through in recommendations of the plan by reach, offering several significant projects within each of these reaches and community preferences reinforcing the vision by giving priority to those projects that serve to connect.



THE NORTHERN REACH – US 52 BRIDGE TO HARRISON BRIDGE

The Northern Reach includes significant recreational resources, of great value to the region but still underdeveloped. In several key areas, land use does not capitalize on the value of its proximity to well-maintained parkland. The plan seeks to create more optimal relationships between public and private investment.

The shape of the river bank in the Northern Reach is highly dynamic, undermining existing pathways and preventing ecological and recreational investments in the lowest parts of the floodplain. Over the long term, the Northern Reach presents great opportunity for ecological, educational, and recreational enhancements as well as major investments in neighborhood development, allowing the urban core of the region to capture more of its appropriate share of future development.

THE CENTRAL REACH – HARRISON BRIDGE TO RAIL BRIDGE

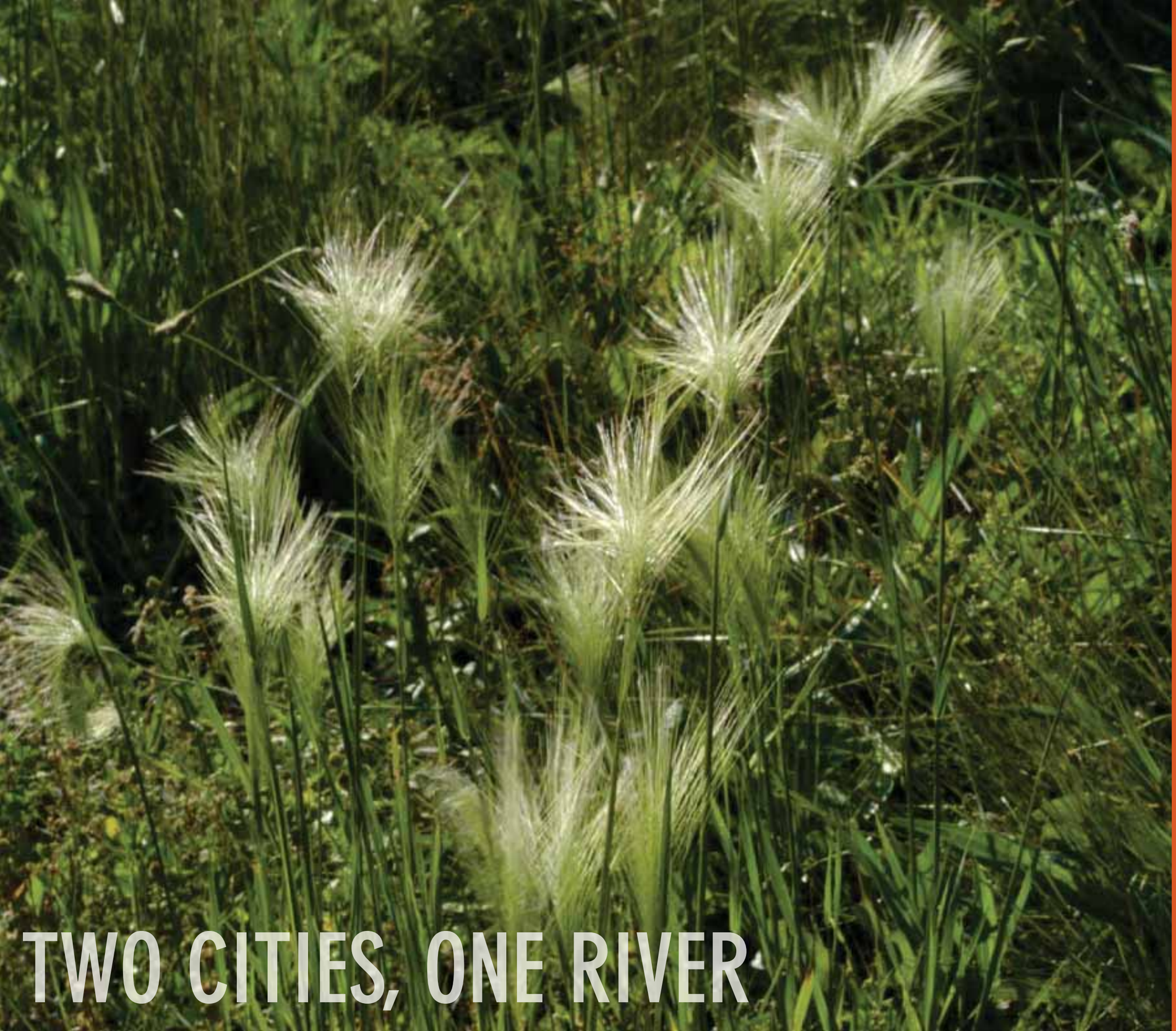
The Central Reach includes the civic cores of Lafayette and West Lafayette and their important assets. The first opportunities to enhance the identity of this region are here, in the heart of the community. Two Cities, One River expresses the sense of connection and shared identity the residents on both sides aspire to.

There are enormous opportunities to improve the relationship of the civic cores to the riverfront, the connectivity between the two cities, and the benefits they offer one another. New river-front development, world class design for the riverfront open spaces, and critical new pedestrian connections across the river are among the opportunities to enhance the economies and quality of life in both cities.

THE SOUTHERN REACH – RAIL BRIDGE TO US 231 BRIDGE

This reach offers many potential dramatic enhancements grown from the rich historic roots of Lafayette and West Lafayette. Achieving those dramatic opportunities will require a long view—and appreciation for the extensive current uses and future interim uses the area offers.

The Southern Reach includes key resources: the historic Wabash Avenue neighborhood, Shamrock Park, and water-front properties newly acquired for enhancement by WREC. As with the other reaches, there is great potential for interpretation of historical features such as the canal trace and development and park activities. The Southern Reach also brings opportunities for a full spectrum of community en-hancing investments—ecological restoration, environmental education, and recreation.



TWO CITIES, ONE RIVER

Public Participation Process

Project Goals

Existing Conditions and Site Analysis

Historic Context

Historic Sites

Site Analysis

A Graphic Primer on Stormwater Management

Identification of Reaches, Enhancement Areas, Risk Levels, of Investments

Risk and Suitability of Investment by Floodplain Elevation Zone

Issues and Opportunities

Summary of Existing Conditions

Key Considerations

Market and Economics

PUBLIC PARTICIPATION PROCESS

The residents and other stakeholders of Lafayette and West Lafayette collaborated throughout a two year long series of public meetings, stakeholder interviews, and questionnaires, supported by an informational project website.

Two mayors, one vision. The collaboration and efforts of public officials from both sides of the river were critical to successful plan development. Image | Stanton Lambert

Public Meeting One: Informal discussion of project issues and opportunities. Several hundred members of the public identified plan goals and issues during the first public meeting. Image | Stanton Lambert

PROJECT GOALS

Project goals were distilled from surveys and breakout group discussions during the first public meeting. Additional input was solicited via the project website. Project goals were confirmed with participants in subsequent public meetings.

The public's goals for the Wabash River corridor reflect a commitment to ecological, economic, and social enhancements.

Connectivity—to the river, between the cities, and among the entire community—was a recurring theme throughout public engagement. The public's goals are to:

Provide access from the cities to the river, and create a healthy balance.

ACCESS

Provide safe, universal, all-season access to the river while maintaining a balance of ecological integrity.

Cultivate healthy ecosystems.

CULTIVATE

Promote superb water quality and healthy ecosystems that support biodiversity and expansion of native flora and fauna.

Engage the whole community.

ENGAGE

Celebrate local culture and heritage, and support a wide variety of recreational opportunities that engage all generations. Cultivate community knowledge and stewardship of the river.

Connect the cities to each other.

CONNECT

Connect Lafayette and West Lafayette through vibrant, compact, mixed-use development supported by a coherent network of walkable streets and public transportation.

Focus on elevating the area to a sustainable place of choice.

ELEVATE

Enhance and develop sustainable attractions, amenities, and infrastructure, creating an enduring, prosperous place of choice.

The words in all caps and the icons that follow them will be used throughout the document to show how plan recommendations work toward achieving these goals.

EXISTING CONDITIONS & SITE ANALYSIS

HISTORIC CONTEXT

Prior to European and American settlement, various tribes of the Miami tribe inhabited Indiana with a tribe known as the "Wea" inhabiting what is now Tippecanoe County. The Miami called their river "waapaasiiki", meaning "it shines white." The name suggests a clarity of the river water that allowed the Miami to see the river's limestone bottom. Today, the river's limestone bottom is not visible because of pollution and sediment.

In the early 1700s, French explorers, missionaries, and fur traders came to the area. The French distorted the indigenous name for the river into "Ouabache," which later became "Wabash" in English. The French contribution to local Wabash River history is commemorated through a present day nationally renowned living history event re-creation—Feast of the Hunters' Moon—celebrating the annual Fall Rendezvous held among the French fur traders and the Miamis during this era. With French trade along the river, the Wabash became an important link in the trade route between Canada and the Gulf of Mexico.

The Wabash River Corridor's plentiful natural resources and its role as a significant trade route led to a series of conflicts between various nations and peoples—starting with it being a flash point in the worldwide conflict between France and England that was fought in part on the North American continent in the early, mid 1700's; then between England and her American colonies in the mid 1700's; and finally between the United States, England, and the Native American population in the late 1700's and early 1800's. Several battles were fought along the Wabash River through these different eras of conflict including the deciding battle between U.S. and Native American forces in Indiana, "The Battle of Tippecanoe." This battle, which occurred at present day Battleground, IN, Tippecanoe County in 1811, ended all Native American hopes for retaining the Wabash River Valley.

Following these conflicts, Indiana was opened for settlement. Lafayette was founded in 1825 by William Digby, a river boatman. He had determined that this location was the navigational headwaters for steamboats on the Wabash River, and he platted and sold the town, naming it after General Lafayette, an American Revolutionary War hero then touring the nation. It flourished as a river port town and continued to thrive when the Wabash and Erie Canal was built in the1840s, with the community serving as a river and canal port. This success based on river and canal commerce was short lived, as the railroad arrived in the 1850s and Lafayette's commerce and industry focus shifted from the river and canal to the railroad.

West Lafayette was created in 1888 through the merging of three small communities—Chauncey, Oakwood, and Kingston—prospering as the home for Purdue University. Purdue University was founded in 1869 as the state's land grant university through the generosity of a prominent Lafayette mercantilist, John Purdue, who made his fortune via shipping goods into and out of Tippecanoe County on the Wabash River. Purdue University has grown to world prominence for its engineering and high technology research and education.

Through the 19th and 20th centuries, the river gradually became viewed as a barrier, a backwater area between the communities, and a place to dump waste. The river and canal heritage continued to serve as a significant cultural landmark in the region, even as the river lost its prominence in everyday life of the community. Now as the community seeks to re-invigorate its economic and community development focus, Lafayette-West Lafayette and Tippecanoe County are looking to re-engage with their river.

Public Meeting One: Informal discussion of project issues and opportunities. Several hundred members of the public identified plan goals and issues during the first public meeting. Image | Stanton Lambert

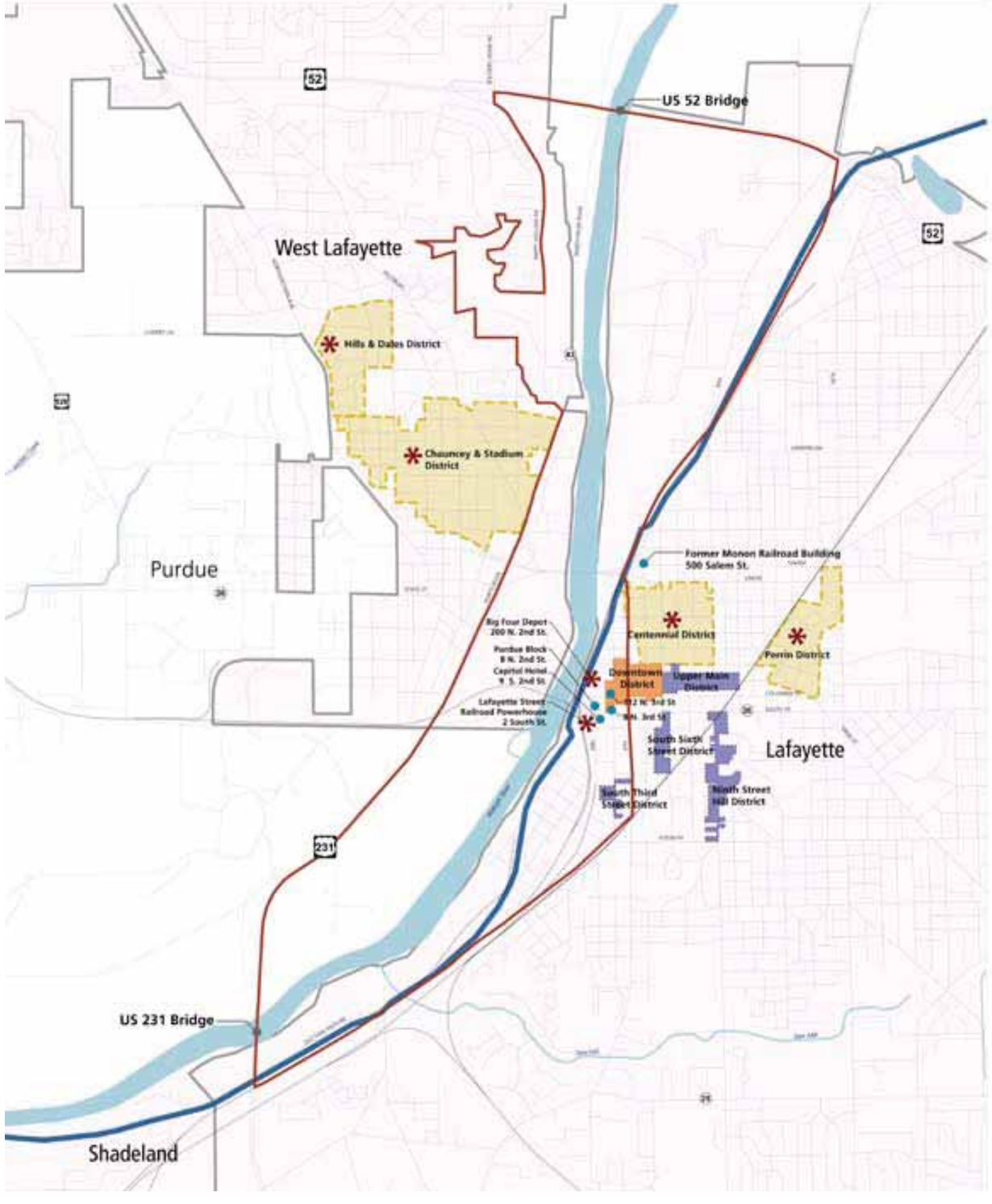
HISTORIC SITES

Both Lafayette and West Lafayette possess large historic districts of national significance, such as the Chauncey—Stadium Avenues Historic District, and the Hills and Dales Historic District in West Lafayette; the Centennial Neighborhood District, the Perrin Historic District, and the Downtown Lafayette Historic District in Lafayette.

Additionally, Lafayette has several remarkable districts of local historic significance and sites that are on or eligible for the National Register of Historic Places. These sites, like the Big Four Depot, help to define the area's image and experience.

The preponderance of historic assets and the cultural significance of Purdue's campus are mutually beneficial. Making stronger connections among these assets can elevate the character of the entire region.

Historic Sites Map



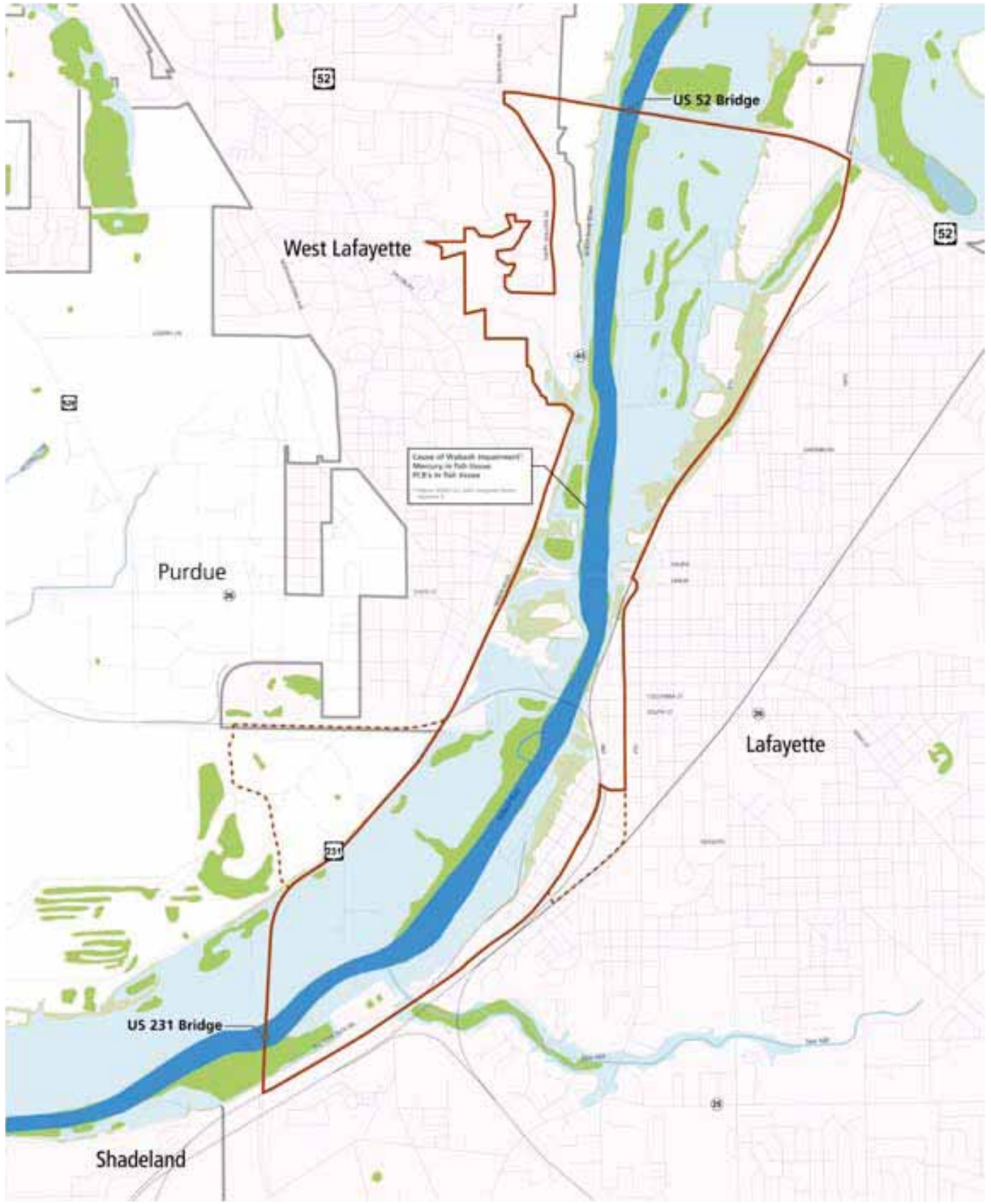
SITE ANALYSIS

Over time, the river's alignment and floodplains have shifted due to changes in land use and associated large floodwater volumes. Just as flooding results from runoff originating everywhere in the watershed, watershed-wide collaboration is necessary when developing mitigation solutions.

SURFACE WATER

The Wabash River's hydrological conditions and patterns constrain the use of adjacent land within Lafayette and West Lafayette. The depth and volume of flow in the River is highly variable. In the summer, base flow can be quite low, particularly when rainfall is below average. These drier summer conditions frequently leave sand bars exposed along some of the banks. However, flooding can be extreme, especially in the spring when the River can rise as much as nine or more feet in any given year. A large portion of the project area is within the 100-year floodplain, and additional land is within the 500-year floodplain. When the river floods, the quick-moving water can scour and destabilize riverbanks, destroy riparian plantings, and damage other investments. Flooding can also lead to the deposition of sand and other debris along riverbanks and in the floodplain.

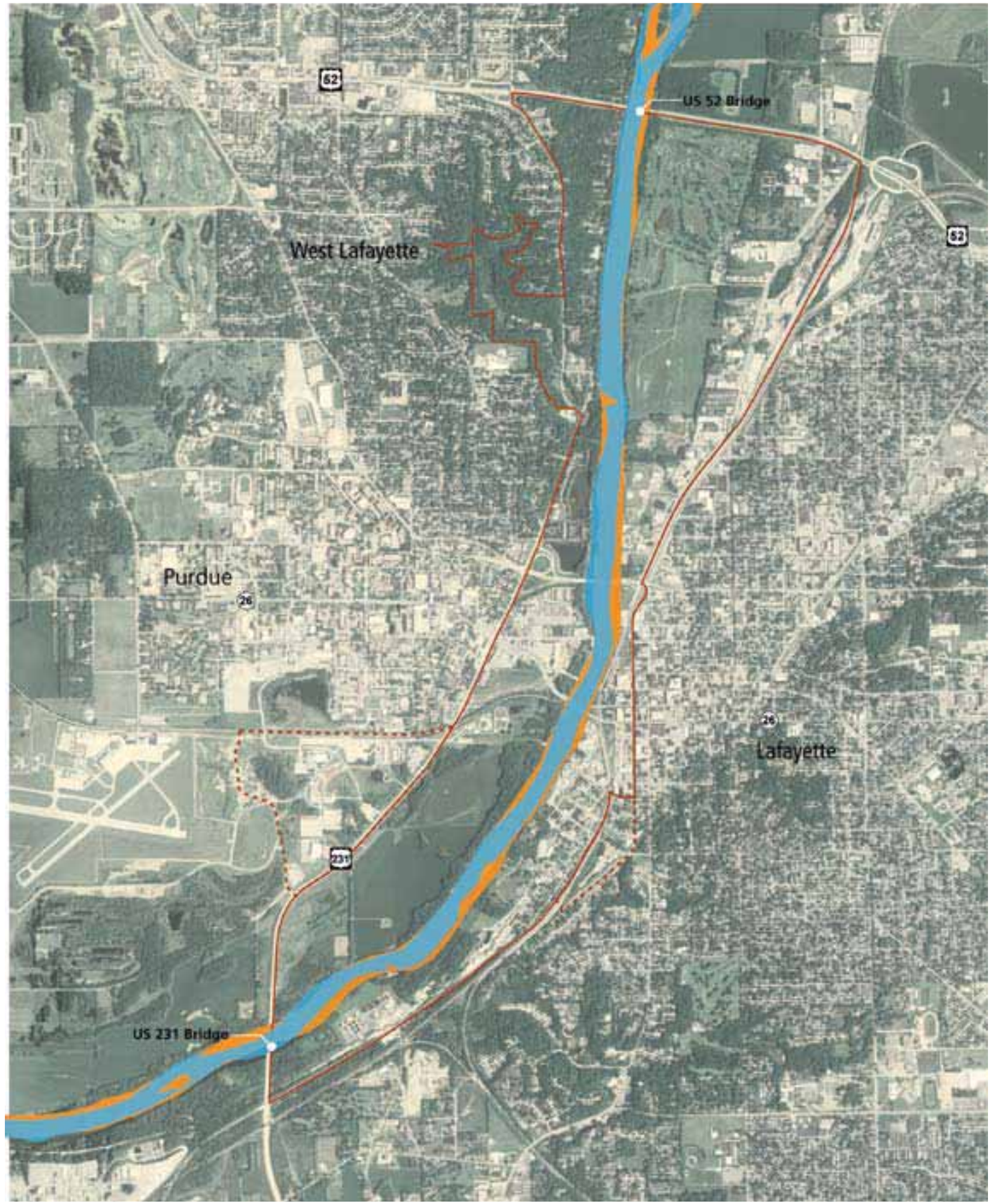
Surface Water Map



STORMWATER

While practices within the study area alone cannot prevent future flooding, measures to manage stormwater locally may help to reduce flooding and associated damage, improve water quality, and maintain river base flows—if applied at sufficient scale along the corridor. Due to current frequent flooding, investments in bank restoration and floodplain ecological restoration are likely to be lost during flood events.

River Channel Map



Between 1929 – 2007 the channel has not changed significantly as indicated by the map.

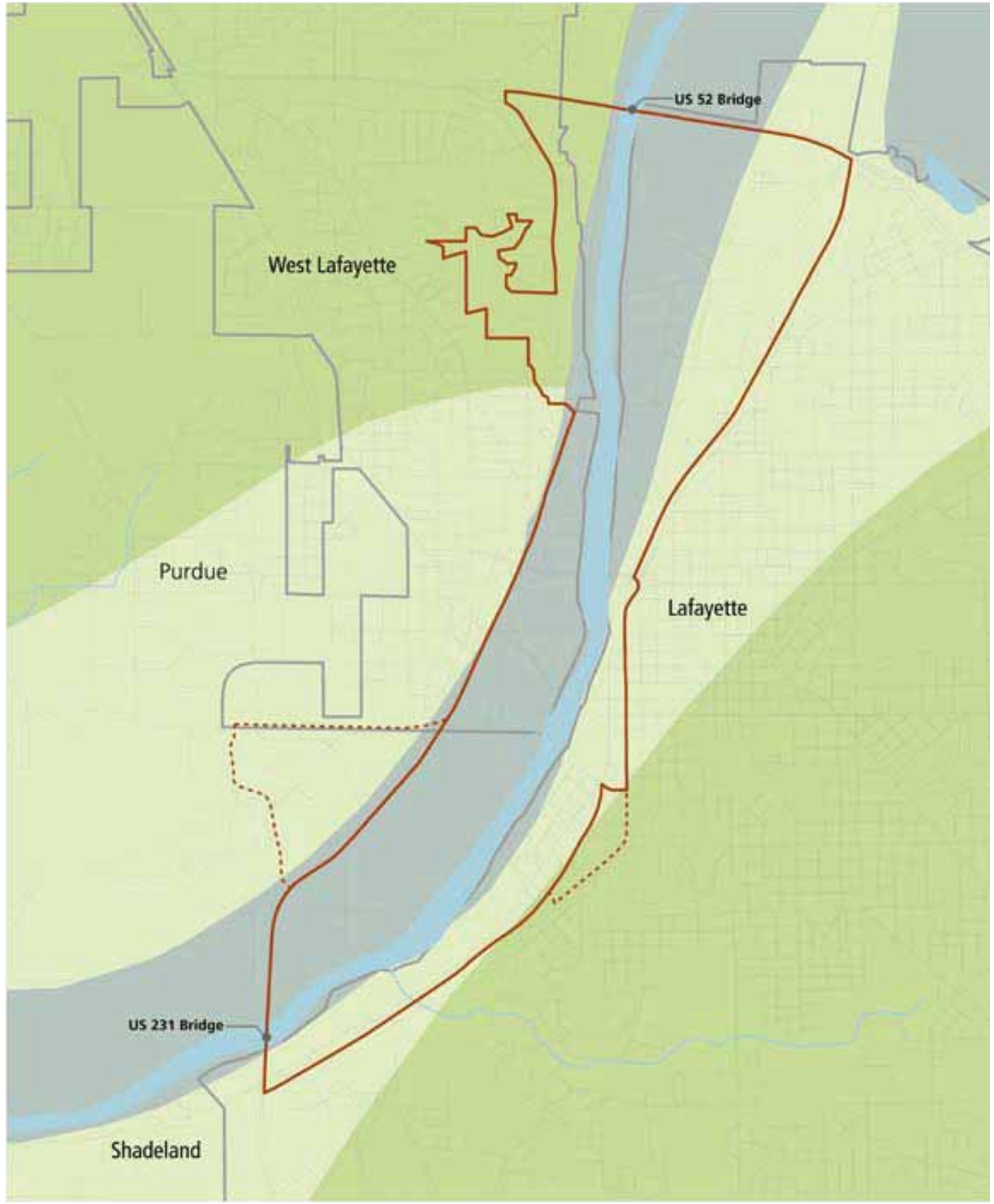
SURFACE GEOLOGY

The significant cover of alluvium and outwash fan deposits along the Wabash speaks of its glacial history. An outwash fan is formed when sediment that was locked in a glacier is deposited in a fan shape as the glacier melts. Beyond the outwash fan deposits, the loam till that covers most of Lafayette/West Lafayette is capable of supporting highly productive agriculture. The soils within the watershed all generally support stormwater management techniques that encourage local infiltration.

LANDSCAPE ECOLOGY

Forests and prairies were the predominant landscape systems in the Wabash River watershed prior to European settlement. Most of the study area was prairieland. The exception is the northwestern part of the study area, which was primarily forested. Over time, agriculture and development have removed most of the natural communities. Happy Hollow and Mascouten Parks are remnants of these forests that were preserved because of their difficult topography.

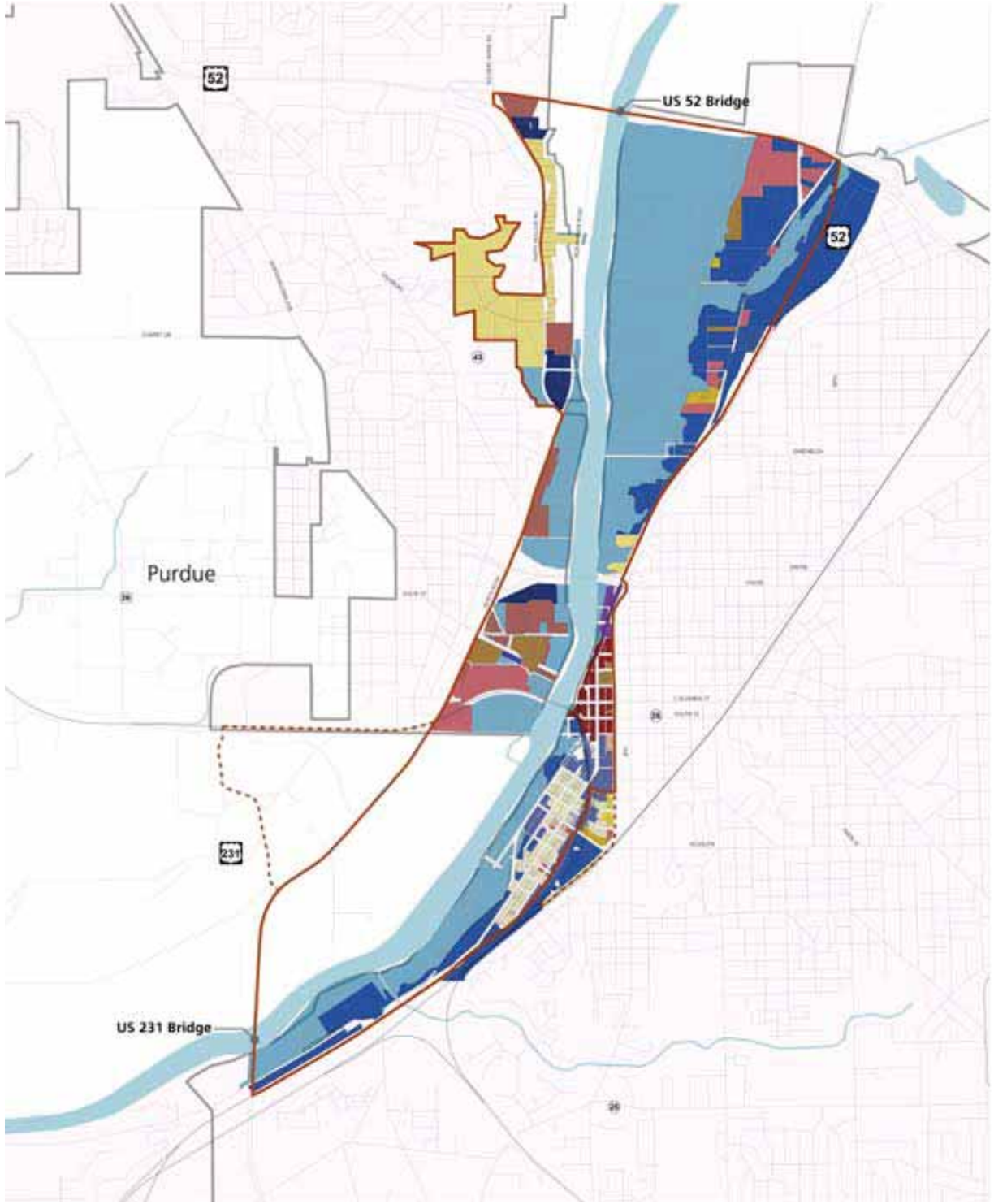
Surface Geology Map



ZONING

Current zoning conflicts with existing land use and does not necessarily reflect desirable uses. It is therefore important to nurture a regulatory context that supports the public's goals, this plan's framework of enhancements, and development opportunities within the study area. With the right regulatory support and investment in public amenities, the region can attract development and encourage economic growth in the urban core rather than in exurban areas.

Zoning Map



LAND USE AND OWNERSHIP

Updated zoning maps will provide a useful implementation tool for this plan. Zoning in the central study area should support the public's goals, this plan's framework of enhancements, and development opportunities. This can be accomplished by rezoning the central study area using either existing zoning districts or developing and using a new zoning district tailored specifically to implement this plan. With the right regulatory support and investment in public amenities, the region can attract development and encourage economic growth in the urban core rather than in exurban areas.

The parkland and open space along the river provide amenities that can leverage economic potential. Conversely, commercial and light industrial properties that do not stimulate public activity—like those along 9th Street and in the Levee Plaza area—can stymie investment in surrounding areas.

Land Use and Ownership Map

Legend

- Downtown River Segment Study Area
- Potential Areas for Inclusion in the Downtown River Segment Study Area
- Incorporated Area
- Streams, Lakes, Ponds, and Impoundments

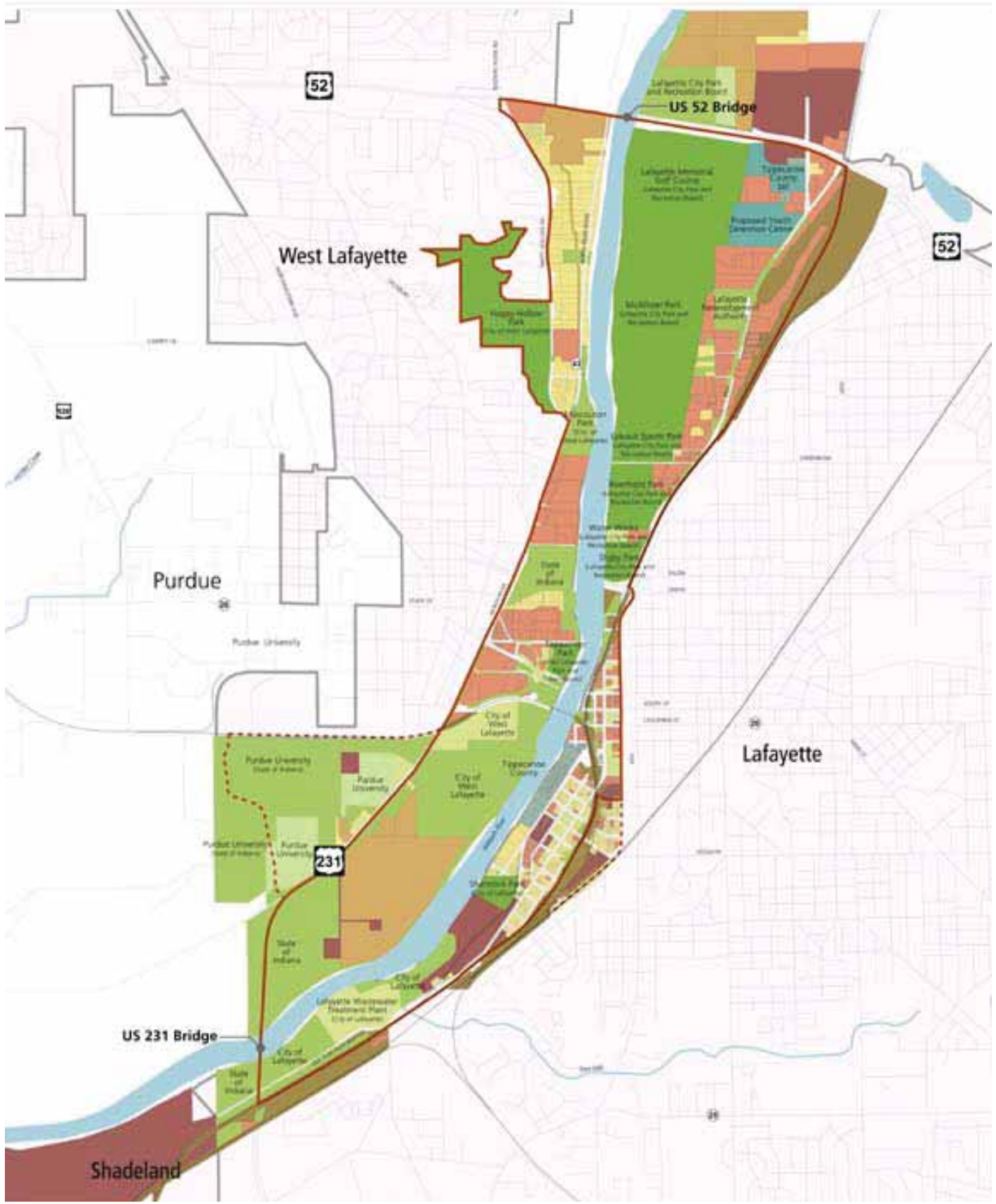
Public and Major Institutional Ownership[1]

- Parkland
- Open Space
- Agriculture
- Public Works
- Correctional Facility
- Vacant (Institutional)

Private Ownership[1]

- Industry
- Commercial Uses
- Utilities
- Agriculture
- Residential Uses

Base Map Data Source:
Tippecanoe County GIS
Indiana Department of Transportation
Map Feature Data Source:
[1]Tippecanoe County Real Estate Duplicate Book (3.23.08)



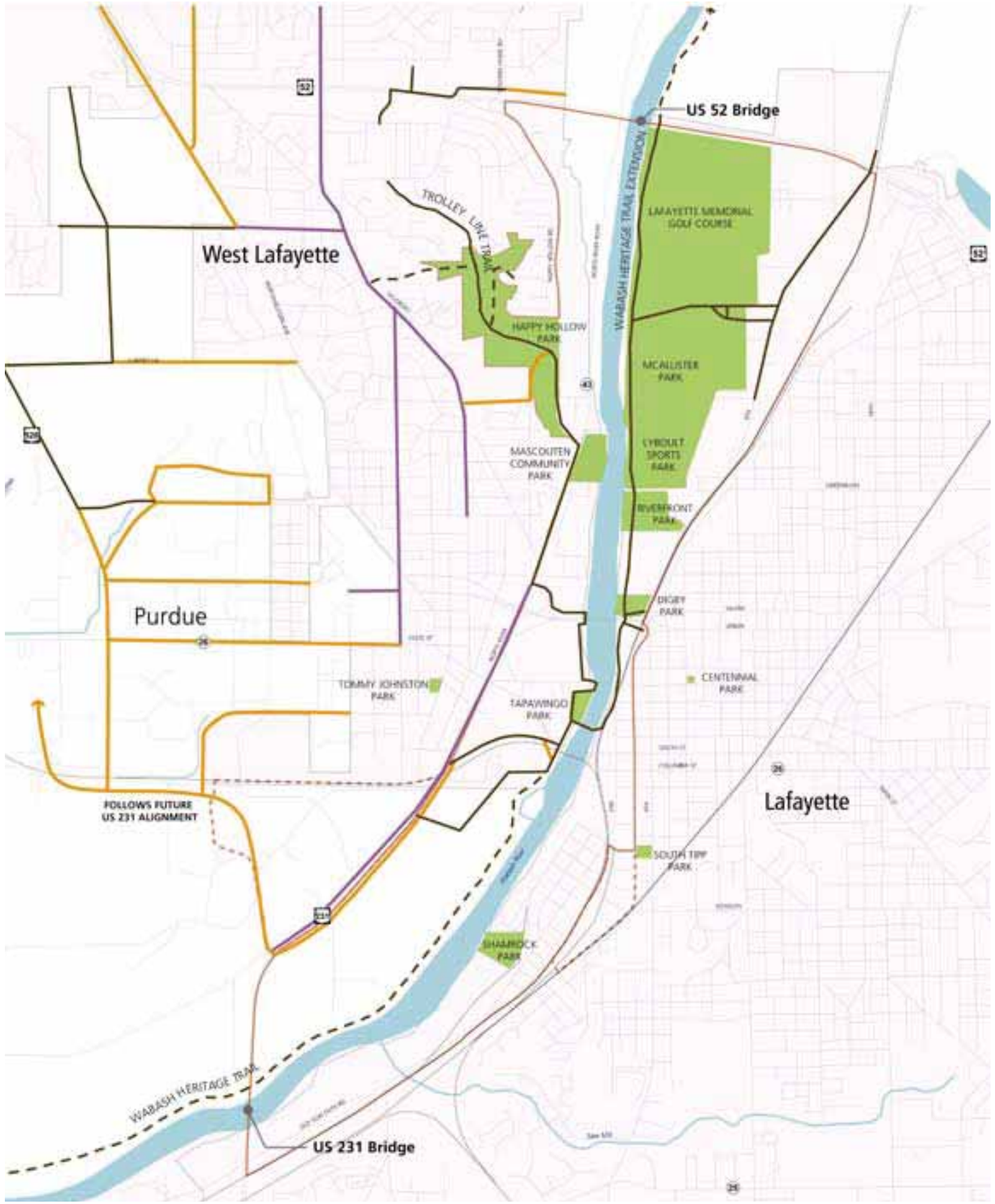
PARKLAND, TRAILS, AND ACCESS

The majority of existing parkland in the study area is in the Northern Reach. Happy Hollow Park in West Lafayette is heavily used and in need of significant restoration. Lafayette Municipal Golf Course has an active youth program, but its grounds require significant maintenance. Its low elevation results in frequent flooding, requiring significant pumping efforts to mitigate and reduce the impact of the flooding on the course. Of particular concern is the potential drainage of fertilizers and other maintenance chemicals into the Wabash through regular practices and during flood events. Significant parkland/civic space in the Central and Southern Reaches, respectively, includes Riehle Plaza, and Shamrock Park in Lafayette's Wabash Avenue neighborhood. These spaces have prime locations and draw people to the river. With enhancements, these parks could be even greater amenities. In addition to opportunities for enhancement of existing parks, there are opportunities for development of new large parks.

Currently, the John T. Myers Pedestrian Bridge is the only dedicated pedestrian bridge over the Wabash in the study area, though pedestrians may cross the river on sidewalks using the Harrison and State Road 26 Bridges and on the shoulder on the US 231 Bridge or the US 52 Bridge. On the Lafayette side or the east end of the bridge, although an elevator is available, there is no accessible ramp to the Myers Bridge, which reduces convenience and consequently may limit the bridge's use by pedestrians and bicyclists. The existing stairs do provide a steep, narrow bike ramp along the side, however it is not user friendly and the stairs are not practical for the typical cyclist to use.

There are insufficient on-road and off-road trails for bicyclists in the study area, but there are great opportunities for extending riverfront trails on both sides of the river. Private ownership and infrastructure, including roads and rail lines, have made connections to the river difficult from many neighborhoods and limited public access. However, these are not insurmountable problems.

Parkland, Trails and Access Map

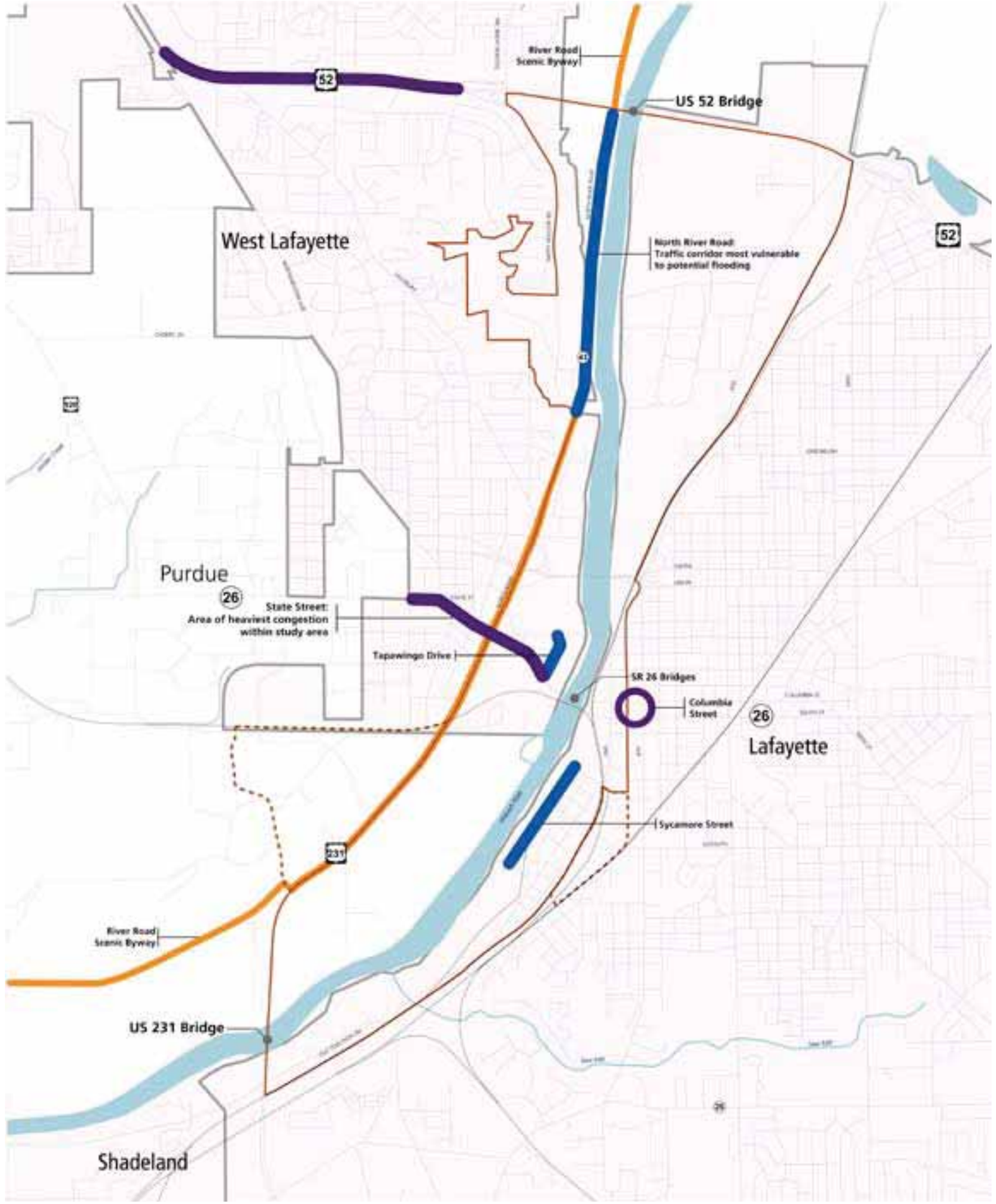


TRANSPORTATION

Generally, traffic congestion is not a significant issue in the study area, but support for all modes of circulation is a significant issue. Greater support is needed for those who cannot drive or who choose not to use automobiles—children, the elderly, pedestrians, bicyclists, and transit riders.

Long range transportation improvements are coordinated and planned by the Area Plan Commission of Tippecanoe County. In West Lafayette, many of the proposed roadway changes are related to long range circulation planning in the county with the goal of clarifying movement to, through, and around the Purdue University campus. The importance of proposed enhancements to State Street cannot be overstated, given its critical role in connecting West Lafayette and Lafayette. State Street is perhaps one of the most problematic areas for multi-modal circulation, especially where it connects Purdue to Wabash Landing and the river. The high speed of vehicular travel in combination with poor pedestrian infrastructure, large mega-blocks, poor visual quality, suburban style development, and a lack of trees discourages pedestrian activity and connectivity between Lafayette and West Lafayette.

Transportation Problem Areas Map



TRANSPORTATION

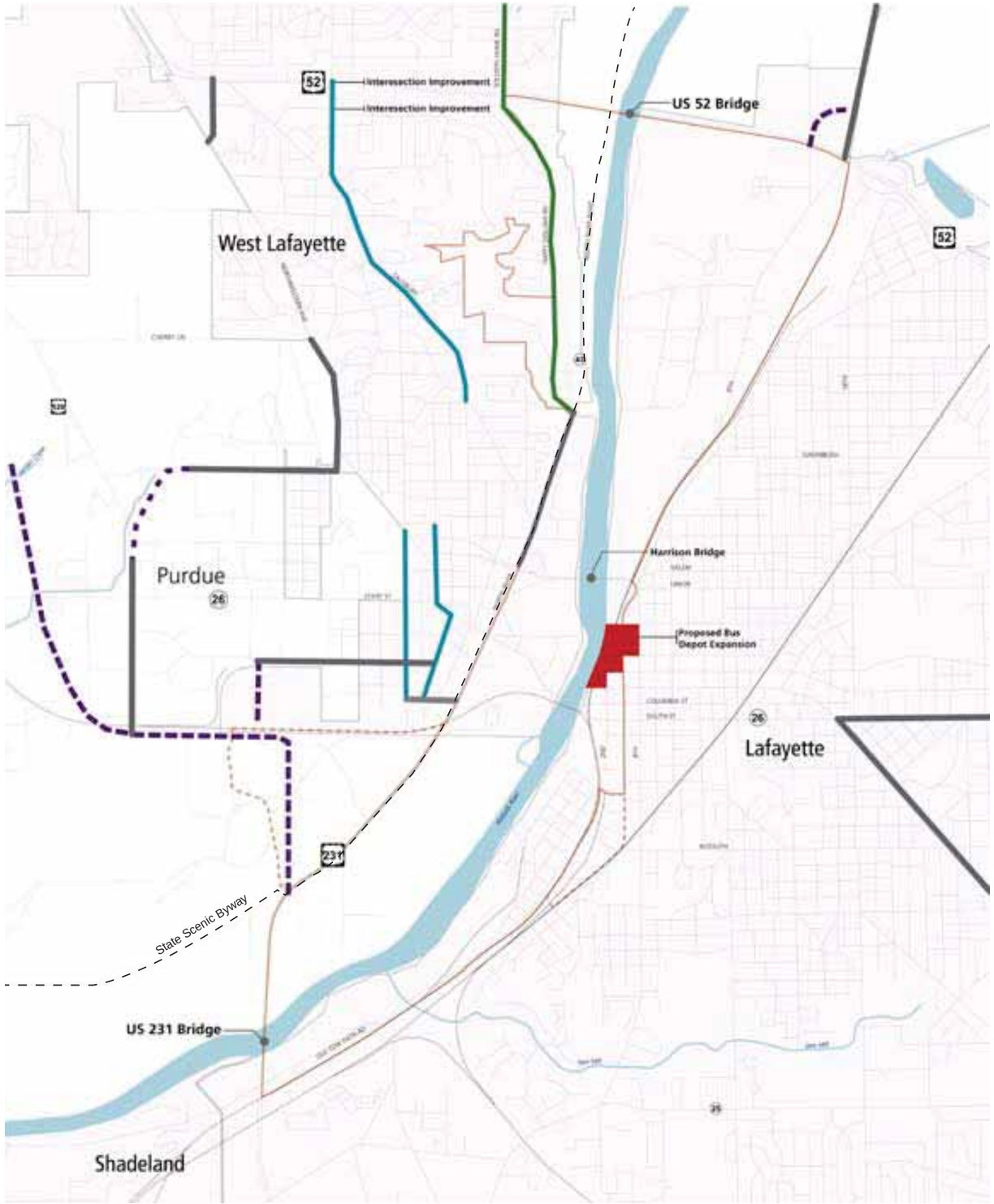
Roadways near the Wabash present a range of issues and opportunities. When the west section of Harrison Memorial Bridge is delisted as part of US 231 highway system in 2013, there is an opportunity to enhance bridge programming to include riverfront trail connections and recreation access between Fowler and Wiggins Avenues in West Lafayette and Union and Salem Streets in Lafayette.

Flooding is a significant issue for low-lying segments of roads and trails within the floodplain. When these circulation routes, such as River Road, are flooded, they are temporarily unusable and break critical linkages. Flooding is also likely to damage transportation infrastructure and increase maintenance requirements. Still, the scenic qualities of River Road are clear. The Wabash River Enhancement Corporation's recent project achievements include having River Road with portions of Division Road, US 231, and IN 43 designated as a State Scenic Byway.

Lafayette has an important intermodal hub in the Big Four Depot, which houses facilities for Amtrak, Greyhound Bus, and CityBus transportation services. As part of the Rail Relocation Project, the Big Four Depot was moved from its original location at Second and South Streets to its current location. Riehle Plaza was built in front of the Big Four Depot as it was being restored. Adjacent to the Amtrak station is the primary station area for CityBus, or the Greater Lafayette Public Transportation Corporation (GLPTC)—a municipal corporation led by a board of directors appointed by the mayors and city councils of Lafayette and West Lafayette. Currently, CityBus provides about 5 million rides per year and is planning to expand services and facilities, with potential mixed use, transit oriented development in the intermodal hub area in downtown Lafayette. The proposed Centennial Village Transit Plaza will consist of a new transit hub, plaza, and mixed-use facilities for residential, secondary education class space, and business/retail uses. The Transit Village will connect the corridor and the Lafayette-West Lafayette communities via public and alternate transportation systems. This will provide area residents access to existing and proposed green space, parks, and trails along the corridor.

The Wabash River Enhancement Corporation has also followed through on a Vision 2020 initiative to have the vehicular route on the west side of the river starting south of the project area in the county and passing through West Lafayette ending at the I65 Interchange designated as a State Scenic Byway. The Byway starts at its south terminus at Ross Hills County Park on Division Road, moving north and east becoming South River Road; it then intersects and continues north onto US 231/St. Road 43 ending at its north terminus at the I65 interchange. The State Scenic Byway program is a component of the National Scenic Byway program (NSB) administered by the Federal Highway Administration's U.S. Department of Transportation. The goals of the NSB program are congruent to the Wabash River Corridor Enhancement project. The Byway designation provides excellent potential for developing and funding future enhancement projects along the Byway and as a part of the overall corridor enhancement project. A prerequisite for being eligible for NSB funding is to have an approved Byway Management Plan. The planning team recommends developing this plan as a first phase corridor enhancement project.

Long-Range Transportation Plan Map

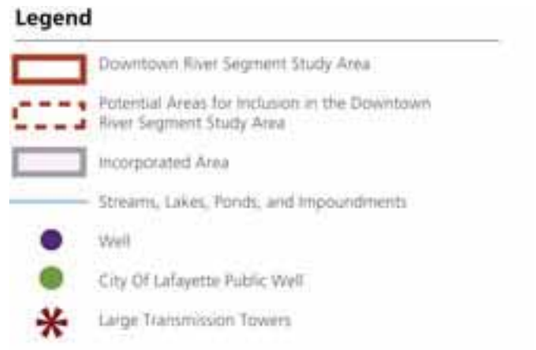


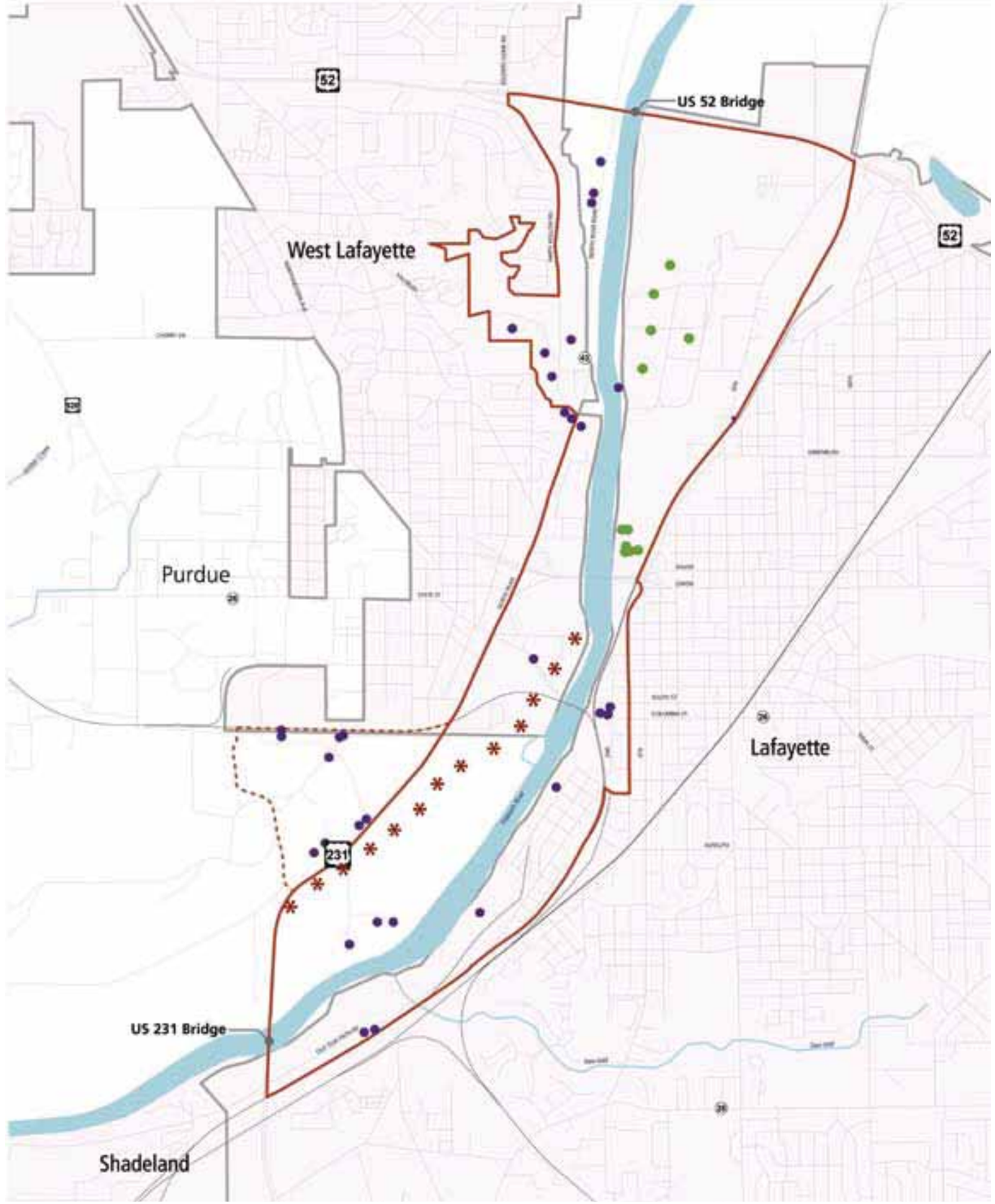
UTILITIES

The majority of the study area gets potable water from wells, making wellhead protection an important issue. Planning and collaboration on issues such as land uses, hazardous material practices, and education are key to stewardship of water resources. West Lafayette has a more complex network of utility service than Lafayette. West Lafayette is partially served by individual wells, but a part of the city water is distributed by Indiana American Water, a subsidiary of American Water. Additionally, Purdue's West Lafayette Campus Water Works distributes water for the campus. Water is drawn from wells on the west side of campus that has as it's source the Wabash River Valley Aquifer, also known as the Teays River Valley Aquifer.

Another utility concern is the negative visual impact created by large transmission towers within West Lafayette and other segments of the river corridor. Visual impact should continue to be a consideration as future utilities are built, including tall infrastructure like wind turbines. If in the future the opportunity arises to relocate or redesign the placement of the large transmission lines to reduce or eliminate their impact on corridor this should be done.

Utilities Map





COMBINED SEWER OUTFALLS AND TREATMENT PLANT EFFLUENT

Lafayette and West Lafayette have combined sanitary and stormwater sewer systems wherein during heavy rain events, the capacity of the system is overwhelmed, causing mixed stormwater and untreated sewage to discharge into the Wabash. Neither city has met regulators' clean water targets for the Wabash, but both are working to reduce the number of combined sewer discharges.

Lafayette recently completed a major stormwater interceptor that holds stormwater and delays its release. The interceptor, called the Pearl River CSO Project, begins on Second Street north of Riehle Plaza and continues south to the Pearl River Lift Station, just south of downtown.

Combined Sewer Outfalls and Treatment Plant Effluent Map

Lafayette has also piloted the use of green infrastructure best management practices — practices that detain stormwater locally and that promote infiltration and re-charge of the groundwater table. In downtown Lafayette, stormwater "bump-outs," also called raingardens, have been implemented to test the survivability and maintenance of vegetation as well as the effectiveness of the design used in detaining stormwater.

Both cities' sewage treatment facilities are in the southern half of the study area, and they release treated water directly into the Wabash. West Lafayette treats approximately 9 million gallons per day, and Lafayette treats approximately 17 million gallons per day. The release of effluent directly into the Wabash means that the cleansed water is not being used as a resource for water recharge or any direct use. The most challenging obstacles to re-use of the effluent appear to be:

- identifying users with very high volume source water needs and building the infrastructure to transport the water to the users and
- identifying large enough areas to surface-apply effluent while meeting Indiana Department of Environmental Management requirements for access and pre-application treatment.

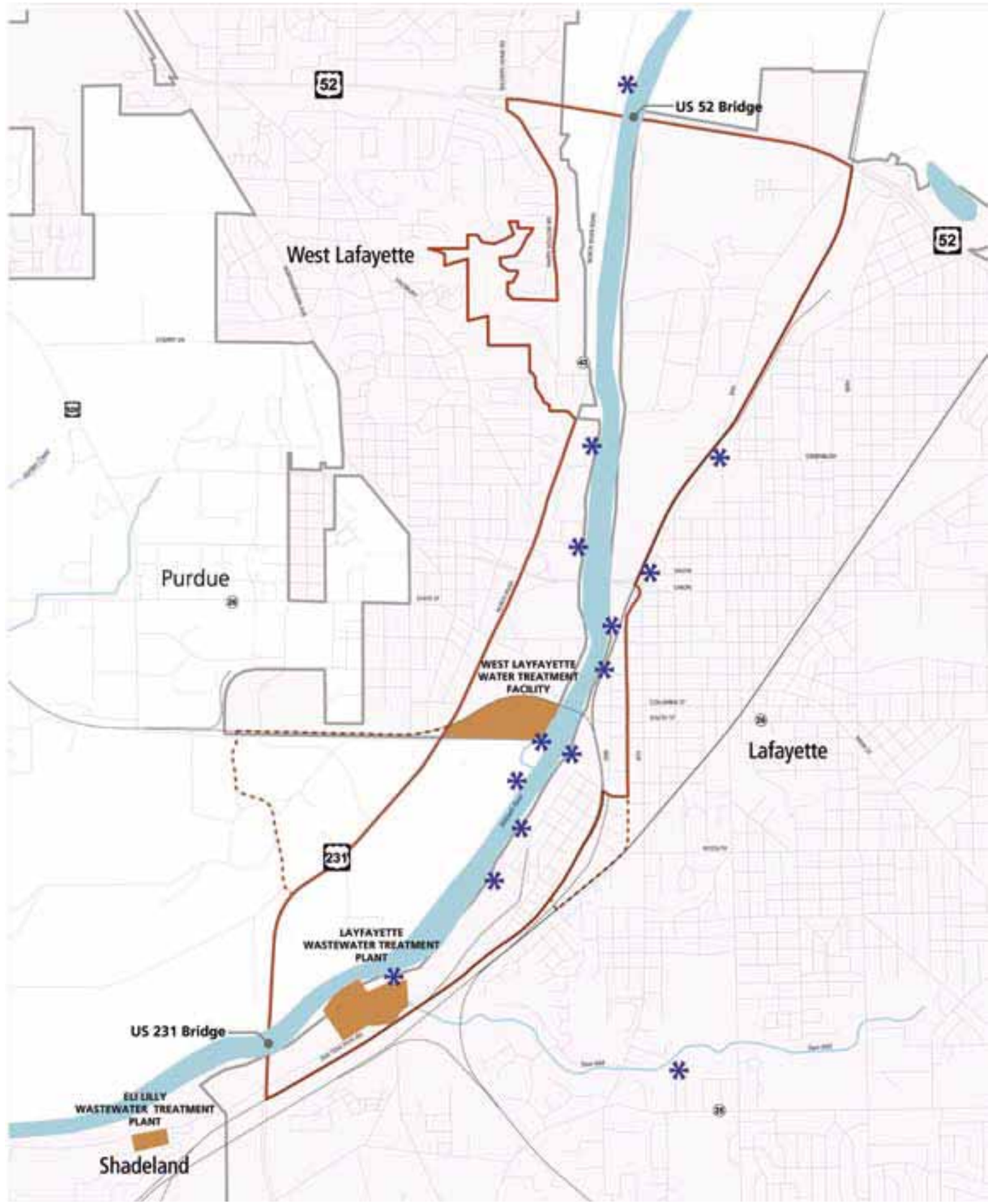
West Lafayette has built a new western interceptor on its southwest side to address CSO issues on its side of the river.

Despite these challenges, finding areas for polishing the plant effluent through constructed wetlands and prairies should be an on-going area of research, especially as new opportunities arise.

Promoting water conservation to reduce wastewater flow to the treatment plants is important in reducing effluent output into the Wabash. Reducing stormwater inputs to the combined sewer system could have an even larger impact on reducing flows to the treatment plants as well as reducing overflows of untreated sewage to the Wabash. Stormwater inputs to the combined sewers could be greatly reduced through use of green infrastructure techniques such as porous pavement, green roofs, rainwater harvesting, and bioretention rain gardens integrated into street rights-of-way, parks, and most other landscape areas.

A large portion of treated sludge created at both plants is distributed for agricultural use. In addition to this use, further efficiencies in the waste and energy cycle should be an ongoing goal for both plants.

The following section is a graphic primer for stormwater management for consideration in implementing the recommendations contained in the plan.



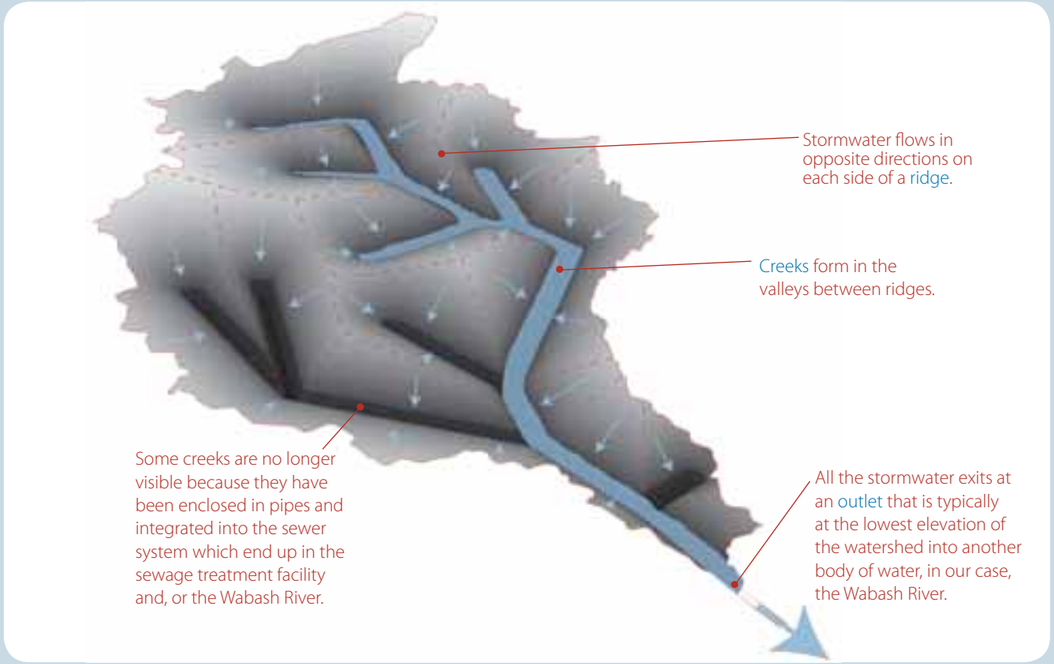
A GRAPHIC PRIMER ON STORMWATER MANAGEMENT

If the amount of stormwater and debris that inundates the Wabash can be lessened over time by employing green stormwater infrastructure, an expansive range of benefits becomes possible—clean water, places to gather and play, places to invest safely, habitat—the list goes on. Green stormwater infrastructure investments have immediate benefits as well. Planting trees and installing rain barrels and green roofs saves property owners money and makes buildings and neighborhoods more comfortable and valuable. Wetlands, meadows, and woodlands filter our air and water, give respite from compact urban neighborhoods, and offer home and food to animals. All of those measures, and others such as pervious paving, help to replenish the underlying water table, securing future drinking water.

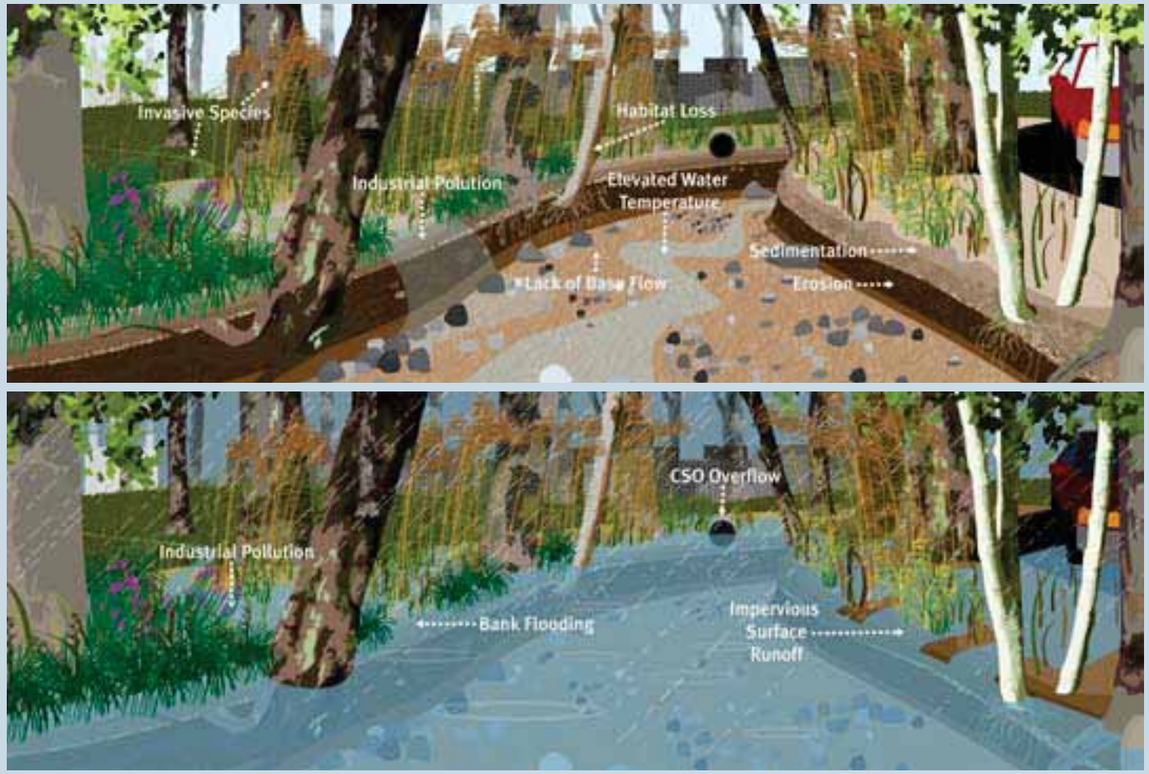
Although some parts of the study area may feel disconnected from the Wabash because of limited access or views, all neighborhoods in the study area drain to the river and must share responsibility for its health.

WHAT IS A WATERSHED?

A watershed is a drainage basin within which all water flows to a single location.

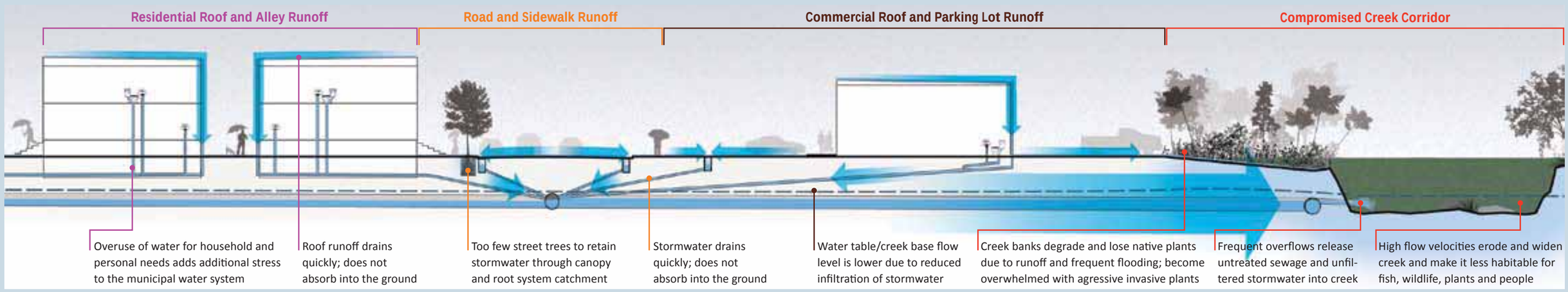


DEGRADED WATERWAYS

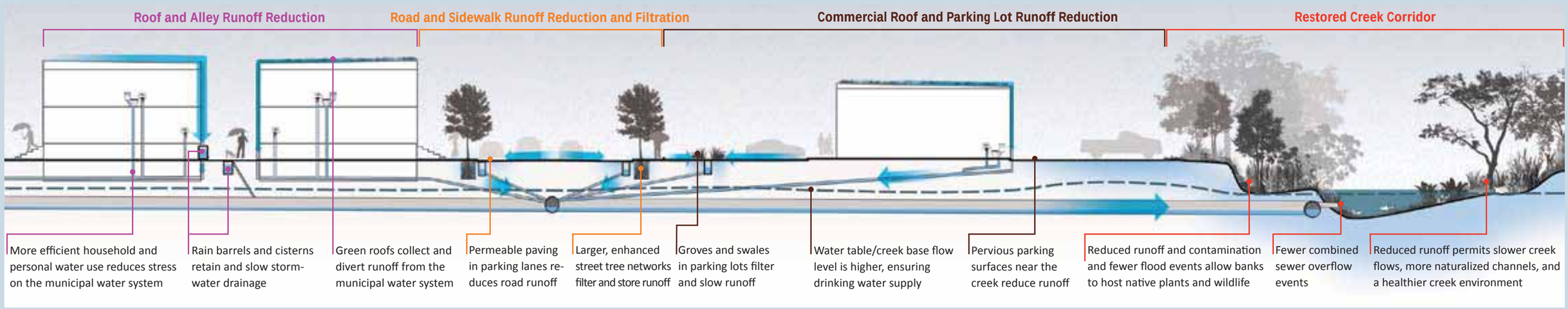


RESTORED WATERWAY

A TYPICAL urban watershed has negative effects on its creeks:



A more SUSTAINABLE approach to stormwater will positively affect the watershed:



RIPARIAN BUFFERS

Naturalized Storm Water Management Facilities, Montgomery, IL

Riparian vegetation is a forested strip along waterways that helps protect a stream from the impact of adjacent land uses. The vegetation acts as a buffer that intercepts sediment, nutrients, pesticides, and other materials in surface runoff before it reaches the water body. These buffers also reduce nutrients and other pollutants in shallow subsurface water flow, in addition to reducing erosion by providing stream bank stabilization. Riparian vegetation serves as a habitat and wildlife corridor while providing shade, cooling the water, and increasing biodiversity and habitat quality.

STORMWATER TREE TRENCH

West Mill Creek, Philadelphia, PA

A stormwater tree trench is a system of trees that is connected by an underground infiltration structure. On the surface, a stormwater tree trench looks like a series of street tree pits. However, under the sidewalk, an engineered system manages the incoming runoff. This system is composed of a trench dug along the sidewalk, lined with a permeable geotextile fabric, filled with stone or gravel, and topped off with soil and trees. Stormwater runoff flows through a special inlet (storm drain), leading to the stormwater tree trench. The runoff is stored in the empty spaces between the stones, watering the trees and slowly infiltrating through the bottom. If the capacity of this system is exceeded, stormwater runoff can bypass it entirely and flow into an existing street inlet.

GREEN ROOF

PECO Building, Philadelphia, PA

A green roof is a roof or section of roof that is vegetated. A green roof system is composed of multiple layers including waterproofing, a drainage layer, an engineered planting media, and specially selected plants. Green roofs can be installed on many types of roofs, from small slanting roofs to large commercial flat roofs. Two basic types of green roofs have been developed, extensive and intensive. An extensive green roof system is a thin, (usually less than 6 inches), lighter-weight system planted predominantly with drought-tolerant succulent plants and grasses. An intensive green roof is a deeper, heavier system designed to sustain more complex landscapes.

A green roof is effective in reducing the volume and velocity of stormwater runoff from roofs by temporarily storing stormwater, slowing excess stormwater release into the combined sewer system, and promoting evapotranspiration.

RAIN BARREL

Philadelphia, PA

A rain barrel or cistern is a structure that collects and stores stormwater runoff from rooftops. The collected rain water can be used for irrigation to water lawns, gardens, window boxes or street trees. By temporarily holding the stormwater runoff during a rain event, more capacity can be added to the city's sewer system. However, rain barrels and cisterns only serve an effective stormwater control function if the stored water is used or emptied between most storms so that there is free storage volume for the next storm. Rain barrels are designed to overflow into the sewer system through the existing downspout connection in large storm events. Although these systems only store a small volume of stormwater, collectively, they can be effective at preventing large volumes of runoff from entering the sewer system

FLOW-THROUGH PLANTER

New Seasons Market, Portland, OR

A flow-through planter is a structure that is designed to allow stormwater from roof gutters to flow through and be used by the plants. Flow-through planters are filled with gravel, soil, vegetation and a connection to the roof downspout to let water flow in. They temporarily store stormwater runoff on top of the soil and filter sediment and pollutants as water infitrates down through the planter. They are typically waterproofed, and the bottom of the planter is normally impervious. Thereby, planters do not infiltrate runoff into the ground, rather they rely on evapotranspiration and short-term storage to manage stormwater. Excess water can overflow into the existing downspout connection. Flow-through planters can be constructed in many sizes and shapes, and with various materials, including concrete, brick, plastic lumber or wood.

BUMP-OUT

NE Siskiyou Street, Portland, OR

A stormwater bump-out is a vegetated curb extension that protrudes into the street either mid-block or at an intersection, creating a new curb some distance from the existing curb. A bump-out is composed of a layer of stone that is topped with soil and plants. An inlet or curb-cut directs runoff into the bump-out structure where it can be stored, infiltrated, and taken up by the plants (evapotranspiration). Excess runoff is permitted to leave the system and flow to an existing inlet. The vegetation of the bump-out will be short enough to allow for open site lines of traffic. Aside from managing stormwater, bump-outs also help with traffic calming, and when located at crosswalks, they provide a pedestrian safety benefit by reducing the street crossing distance.

STORMWATER PLANTER

People's Food Coop, Portland, OR

A stormwater planter is a specialized planter installed into the sidewalk area that is designed to manage street and sidewalk runoff. It is normally rectangular, with four concrete sides providing structure and curbs for the planter. The planter is lined with a permeable fabric, filled with gravel or stone, and topped off with soil, plants, and, sometimes, trees. The top of the soil in the planter is lower in elevation than the sidewalk, allowing for runoff to flow into the planter through an inlet at street level. These planters manage stormwater by providing storage, infiltration, and evapotranspiration of runoff. Excess runoff is directed into an overflow pipe connected to the existing combined sewer pipe.

PERVIOUS PAVING

Mill Creek Basketball Court, Philadelphia, PA

Pervious pavement is a specially designed pavement system that allows water to infiltrate through the pavement and prevents it from becoming runoff. This system provides the structural support of conventional pavement, but is made up of a porous surface and an underground stone reservoir. The stone reservoir provides temporary storage before the water infiltrates into the soil. There are many different types of porous surfaces including pervious asphalt, pervious concrete, and interlocking pavers. Interlocking pavers function in a slightly different way than pervious concrete and asphalt. Rather than allowing the water to penetrate through the paving, pavers are spaced apart with gravel or grass in between the pavers that allows for infiltration.

RAIN GARDEN

Wissahickon Charter School, Philadelphia, PA

A rain garden is a garden designed to collect runoff from impervious surfaces such as roofs, walkways, and parking lots, allowing water to infiltrate intothe ground. The garden is typically moderately depressed (lower than the surrounding ground level), with the bottom layer filled with stone, so runoff can collect and pond within it. The site is graded appropriately to cause stormwater to flow into the rain garden area from the nearby impervious area. The water ponds on the surface, is used by the vegetation in evapotranspiration, and infiltrates into the subsurface stone storage and soil. Rain gardens can be connected to sewer systems through an overflow structure, but usually they are sized to infiltrate the collected stormwater runoff within 72 hours. Flexible and easy to incorporate into landscaped areas, rain gardens are suitable for many types and sizes of development and retrofits. Rain gardens are effective at removing pollutants and reducing stormwater runoff volume.

STORMWATER WETLAND

Saylor Grove, Philadelphia, PA

A stormwater wetland is a man-made shallow marsh system that is engineered to serve as both a temporary storage location as well as a natural filter for stormwater runoff. Each wetland is composed of various depths of storage areas, including surface, shallow, and deep areas, and a complex mix of wetland-appropriate landscaping. Stormwater wetlands are one of the best stormwater management tools for pollutant removal and can provide considerable aesthetic and wildlife benefits.

IDENTIFICATION OF REACHES, ENHANCEMENT AREAS, AND RISK LEVELS OF INVESTMENTS

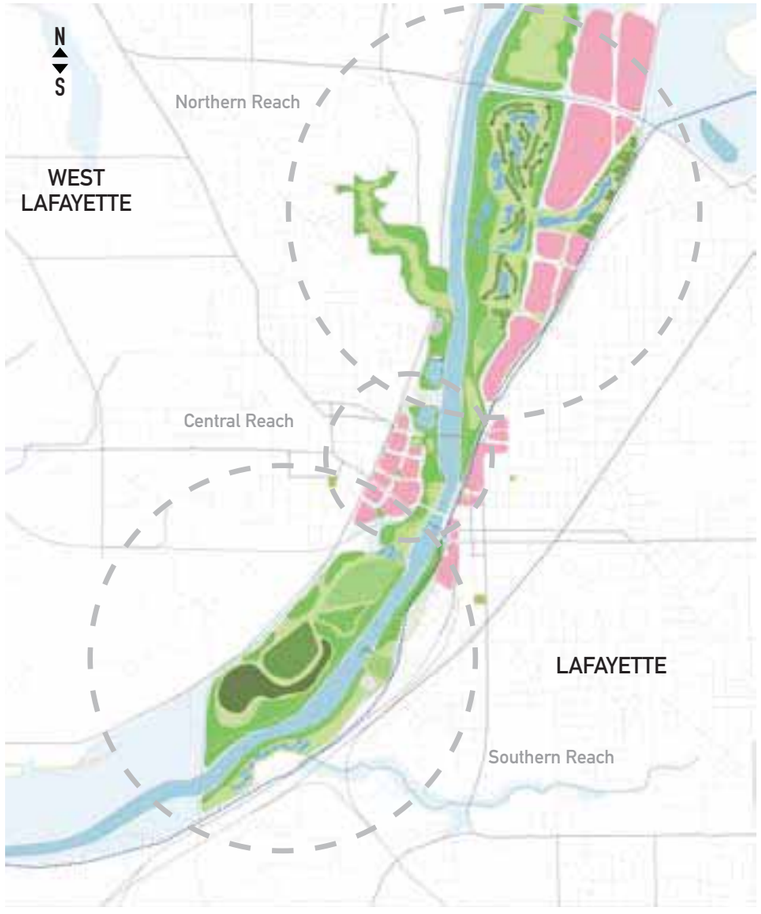
Prior to development of plan recommendations and identification of possible strategic projects, the urban section was assessed for:

- General corridor reaches, areas with the same general physical characteristics of land use, density, and vegetation
- Landscape sub-zones based on the extent of floodplains and their potential for enhancement (at a finer level than general corridor reaches)
- Levels of risk and suitable levels of investments associated with each floodplain

Those assessments are described in the following three sections. It is important to note that the analyses inform plan development but are subject to interpretation and coherence with overall plan recommendations.

IDENTIFICATION OF REACHES

The 4-mile length of the study area has been characterized as having three reaches - the Northern, Central and Southern. These reaches are later used to organize plan recommendations.



NORTHERN REACH – US 52 BRIDGE TO HARRISON BRIDGE

The Northern Reach includes significant recreational resources such as Happy Hollow Park, Mascouten Park, with its popular boat launch on the West Lafayette side, and McAllister Park, containing Lafayette Municipal Golf Course on the Lafayette side. In several key areas along McAllister Park, adjacent land uses do not capitalize upon the potential value of being near well maintained parkland. Bank morphology is dynamic along the banks of the Northern Reach, with scouring and siltation occurring irregularly, undermining existing pathways and preventing a range of ecological and recreational investments in the lower floodplains. Over the long term, the Northern Reach presents great opportunity for ecological, educational and recreational enhancements, as well as investments in neighborhood development .

Image | Tippecanoe County

CENTRAL REACH – HARRISON BRIDGE TO RAIL BRIDGE

The Central Reach includes the civic cores of Lafayette and West Lafayette with key assets such as Tapawingo Park, Wabash Landing, John T. Myers Pedestrian Bridge, downtown Lafayette, Historic Big Four Depot – which serves the Amtrak, Grey Hound and CityBus, and adjacent James F. Riehle Plaza. Direct connectivity and sightlines to the Wabash River are much stronger on the West Lafayette side than on the Lafayette side. Even with the presence of the rail line along the Lafayette side and the virtual barrier that the Levee Plaza area currently presents on the West Lafayette side, there are enormous opportunities to enhance the relationship of the civic cores to the riverfront, the connectivity between the two cities and benefits they offer one another. WREC working with North Central Health Services has already acquired 20+ acres in the Central Reach

Image | Tippecanoe County

SOUTHERN REACH – RAIL BRIDGE TO US 231 BRIDGE

The Southern Reach includes both cities' wastewater treatment plants; large open fields and wetlands on the West Lafayette side; and on the Lafayette side, the Wabash Avenue neighborhood, Shamrock Park and key waterfront properties newly acquired by WREC (through funding by North Central Health Services) between the rail bridge and Shamrock Park. As with the other reaches, there is great potential for interpretation of historical features and activities. The Southern Reach also offers exciting and significant opportunities for other cultural features, ecological enhancement, environmental education, and recreation.

Together, these reaches constitute a strategically significant investment area. Purdue, West Lafayette, and Lafayette comprise a community of high capacity and cohesion. The civic, educational, and non-profit leaders of the community are active in soliciting and shepherding the community's shared vision of its future.

Image | Tippecanoe County

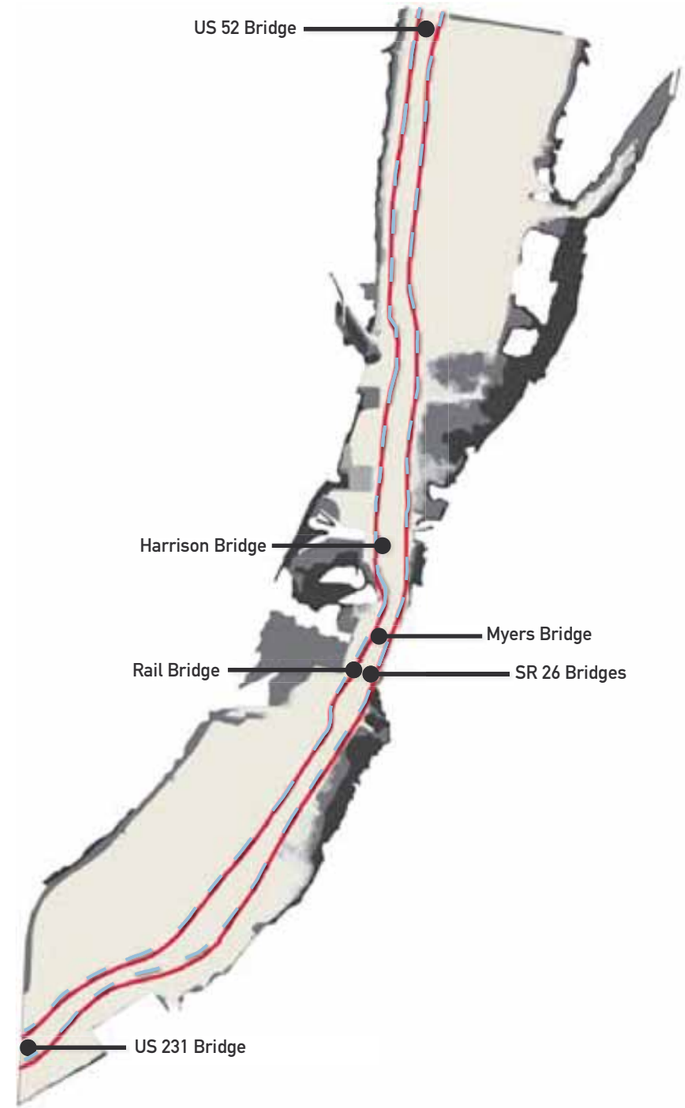
RISK AND SUITABILITY OF INVESTMENT BY FLOODPLAIN ELEVATION ZONE

A large majority of the study area is within the 100- and 500-year floodplains. Because of this, and the great impacts of flooding in the area, it is necessary to gauge the risk of any investments against the probability of flooding. The 100- and 500-year flood plain boundaries are too coarse to guide the assessment of risk associated with park and other improvements. Therefore, the study area is subdivided into a finer grain of flood elevation zones, from the active zone up to the 500-year floodplain. Investment risk for planting / environmental assets and building investments are assessed, and an estimate of suitable types and cost of planting and building is provided.

The following are descriptions of each floodplain elevation zone and recommended ranges of investment (per 2010 values):

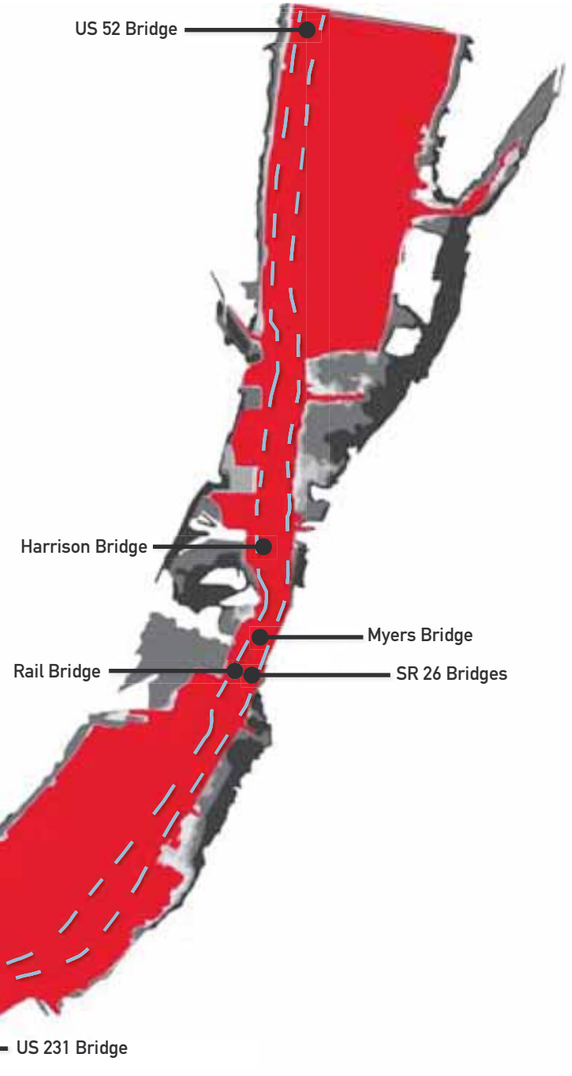
Floodplain Stages: Active Zone

	Normal River Elevation Zone	Active Zone
Environmental Enhancement and Planting	Planting	Significant planting expense should be avoided in this zone due to active erosion and likely failure of planting.
	Suitable Landscape Types	Use aggressive streambank stabilization measures where necessary to reduce intolerable channel migration and protect structures. Apply more naturalized stabilization measures in open areas where consequence of migration is low.
	5-Year Planting Costs (not including annual management costs)	$0/acre recommended (approximate)
	Investment Risk	Extremely high risk
Structures and Circulation	Trails	No trails without further, site specific evaluation. Generally, expect frequent (at least annually) deposition and erosion; frequent repair and maintenance.
	Roads and Parking	No Roads, No parking. (Boat launches and boat launch parking okay.)
	Buildings (see Note below)	Not suitable here.
	Investment Risk	Extremely high risk (Undermining and/or significant deposition)



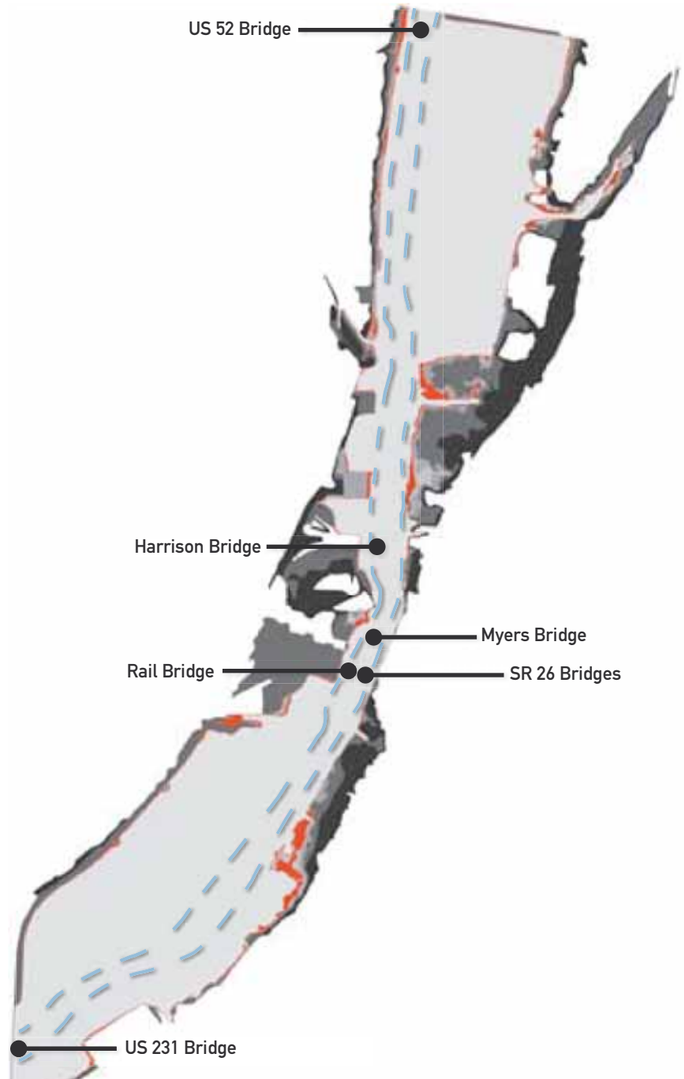
Floodplain Stages: 0- to 2-Year Floodplain

	Normal River Elevation Zone	0- to 2-Year Floodplain
Environmental Enhancement and Planting	Planting	Significant planting expense should be avoided due to extremely high probability of flooding.
	Suitable Landscape Types	Allow natural colonization of adapted species. Select areas deemed worthy of planting for demonstration or education will require a high degree of management to promote native species and control invasive species.
	5-Year Planting Costs (not including annual management costs)	$0/acre recommended (approximate)
	Investment Risk	Extremely high risk
Structures and Circulation	Trails	Paved/pavers: Limit. Expect a lot of deposition & erosion; frequent repair & maintenance. Boardwalk/Gator: OK, if they can be protected from debris flows. Mown: OK. Gravel/fines: Not recommended due to erosive forces of floods.
	Roads and Parking	Generally, strongly not recommended. Paved/pavers: Expect a lot of erosion & deposition; high degree of repair & maintenance. Gravel/fines: Not recommended due to erosive forces of floods.
	Buildings (see Note below)	Not suitable here.
	Investment Risk	Extremely high risk Significant flooding, erosion and/or deposition.



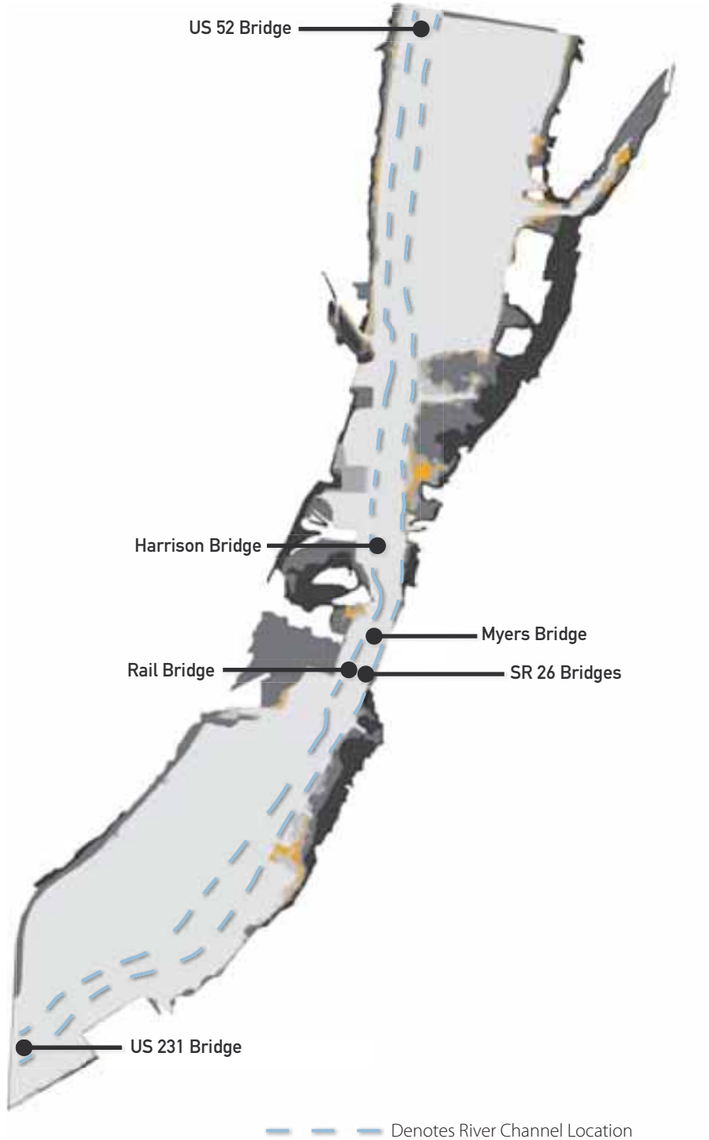
Floodplain Stages: 2- to 5-Year Floodplain

	Normal River Elevation Zone	2- to 5-Year Floodplain
Environmental Enhancement and Planting	Planting	Use caution when planting in this zone. Plants should be tolerant of flooding. Anticipate a high degree of maintenance to mitigate soil erosion and deposition. Significant planting expense should be avoided due to extremely high probability of flooding.
	Suitable Landscape Types	Allow natural colonization of adapted species. Select areas deemed worthy of planting for demonstration or education will require a high degree of management to promote native species and control invasive species.
	5-Year Planting Costs (not including annual management costs)	$0/acre recommended (approximate)
	Investment Risk	Very high risk
Structures and Circulation	Trails	Paved/Pavers: Limit. Expect erosion & deposition, repair & maintenance. Boardwalk/Gator: OK, if they can be protected from debris flows. Mown: OK. Gravel/Fines: Not recommended due to erosive forces of floods.
	Roads and Parking	Generally, not recommended. Paved/pavers: Expect erosion & deposition, repair, maintenance. Mown (event parking): OK. Gravel/fines: Not recommended due to erosive forces of floods.
	Buildings (see Note below)	Temporary and easily removable (so they can be moved inland before flood events).
	Investment Risk	Very high risk Frequent flooding, deposition and/or erosion.



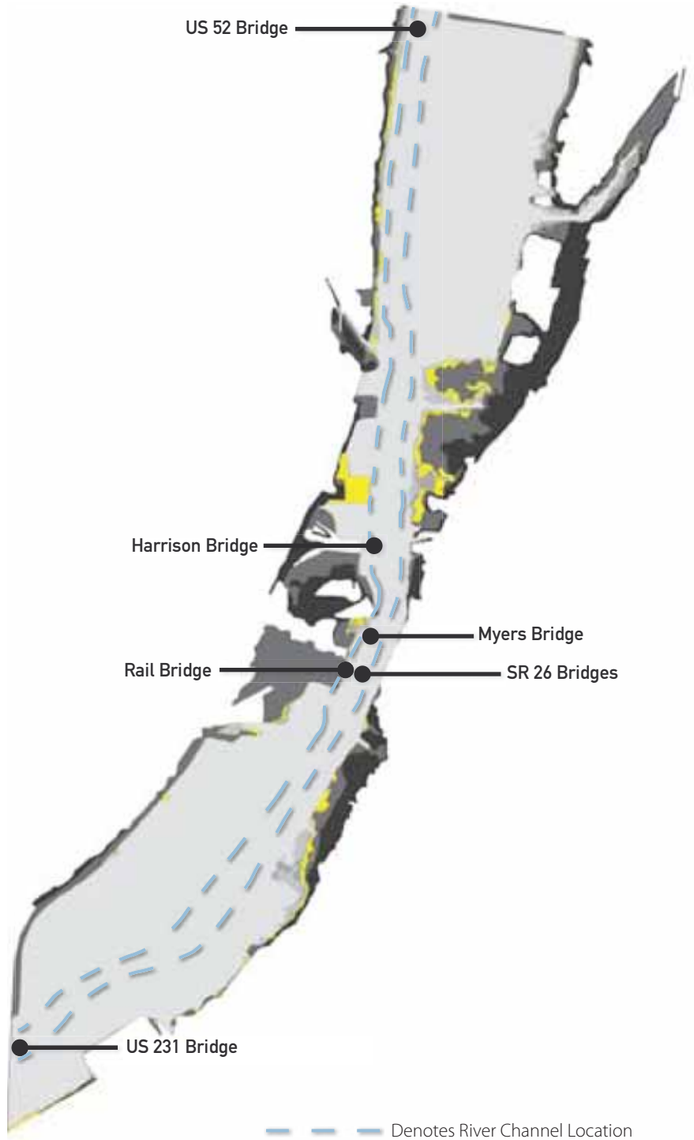
Floodplain Stages: 5- to 10-Year Floodplain

Normal River Elevation Zone	5- to 10-Year Floodplain
Environmental Enhancement and Planting — Planting	Use caution when planting in this zone. Plants should be tolerant of occasional flooding. Planting should consist of a mix of hearty prairie species.
Suitable Landscape Types	Bottomland systems similar to those that are already present where trees are desired. Simple prairie restoration in areas receiving high levels of sunlight, or highly visible areas where canopy thinning/removal allows much sunlight to reach ground level.
5-Year Planting Costs (not including annual management costs)	$300/acre recommended (approximate)
Investment Risk	High risk
Structures and Circulation — Trails	Paved/Pavers: Occasional depositions & erosion, regular repair & maintenance. Boardwalk/Grate: OK, if they can be protected from debris flows. Gravel/Fines: OK. Mown: OK.
Roads and Parking	Roads generally not recommended. Paved/pavers: Occasional erosion & deposition, repair, maintenance. Permeable pavers will experience clogging. Mown/Grasspave (event parking): OK. Gravel/fines: Occasional erosion & deposition.
Buildings (see Note below)	Open-walled pavilions OK, if they can be flood-tolerant & protected from debris flows. Removable structures OK.
Investment Risk	High risk — Occasional flooding and deposition.



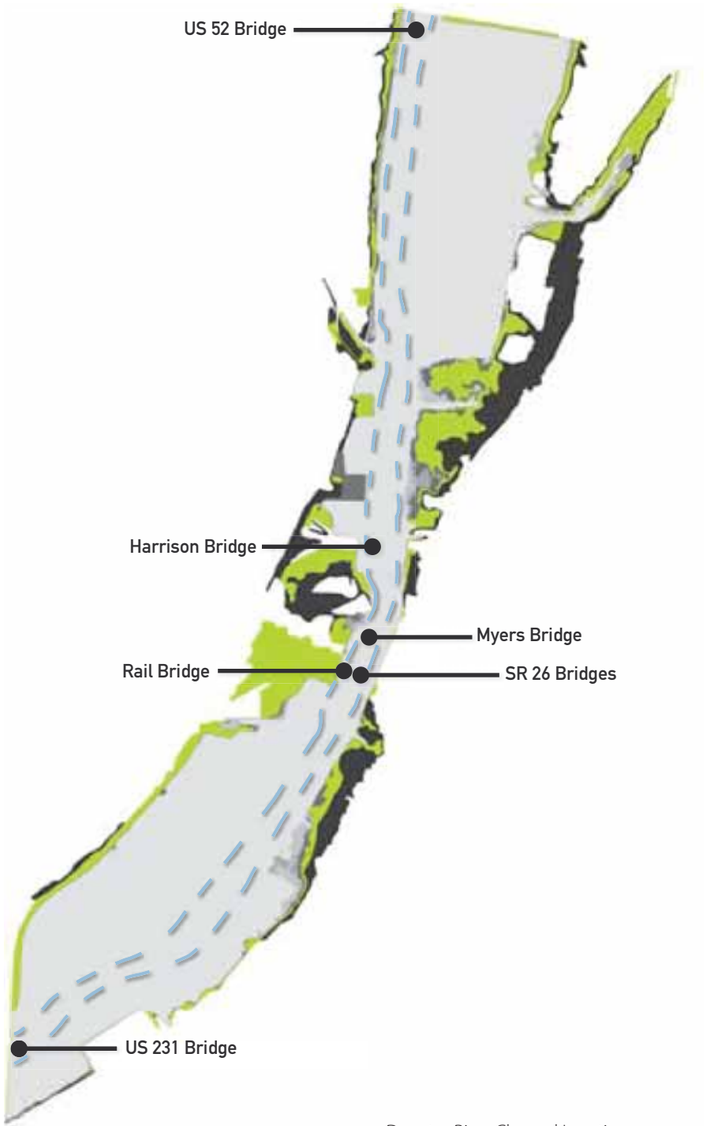
Floodplain Stages: 10- to 25-Year Floodplain

Normal River Elevation Zone	10- to 25-Year Floodplain
Environmental Enhancement and Planting — Planting	Moderate quality prairie species similar to the mix present at Tippecanoe State Park may be planted. However, significant management will be required to repair damage due to occasional flooding, especially within the 10-year flood fringe.
Suitable Landscape Types	Bottomland systems similar to those that are already present where trees are desired. Moderate quality prairie restoration in areas receiving high levels of sunlight, or highly visible areas where canopy thinning/removal allows much sunlight to reach ground level.
5-Year Planting Costs (not including annual management costs)	$500/acre recommended (approximate)
Investment Risk	Moderate risk
Structures and Circulation — Trails	Paved/Pavers: OK. Boardwalk/Grate: OK. Gravel/Fines: OK. Mown: OK.
Roads and Parking	Paved/pavers: Occasional erosion & deposition, repair, maintenance. Permeable pavement may experience some clogging. Mown/Grasspave (event parking): OK. Gravel/fines: OK.
Buildings (see Note below)	Open-walled pavilions OK, if they can be flood-tolerant & protected from debris flows. Removable structures OK.
Investment Risk	High risk — Occasional flooding and deposition.



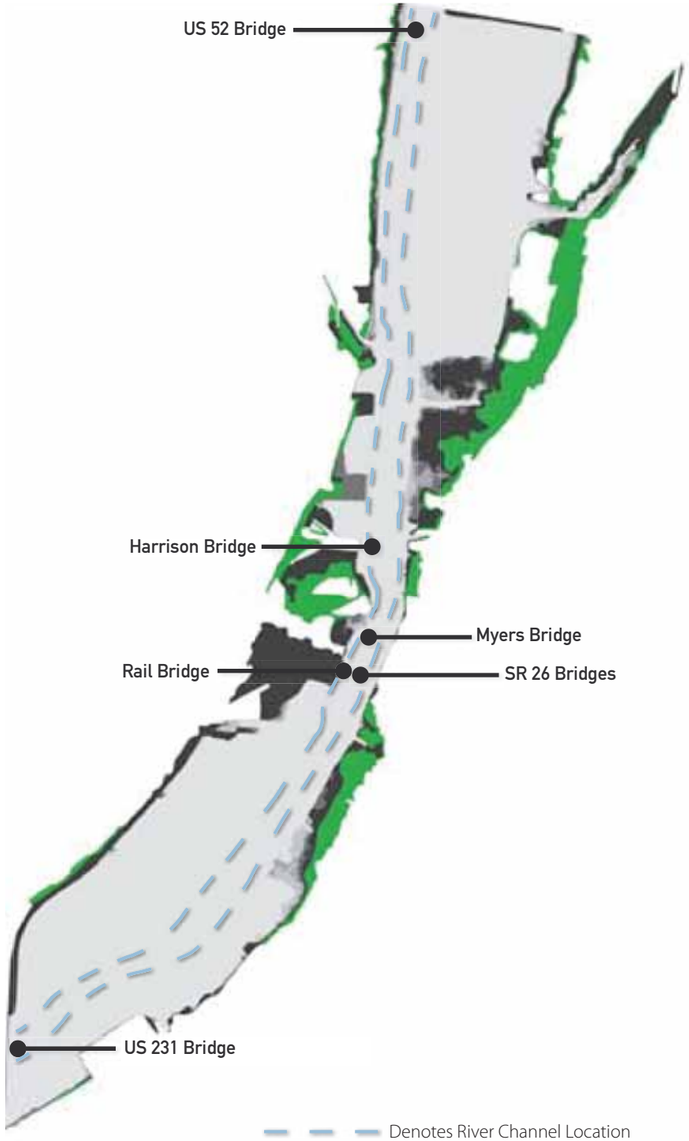
Floodplain Stages: 25- to 100-Year Floodplain

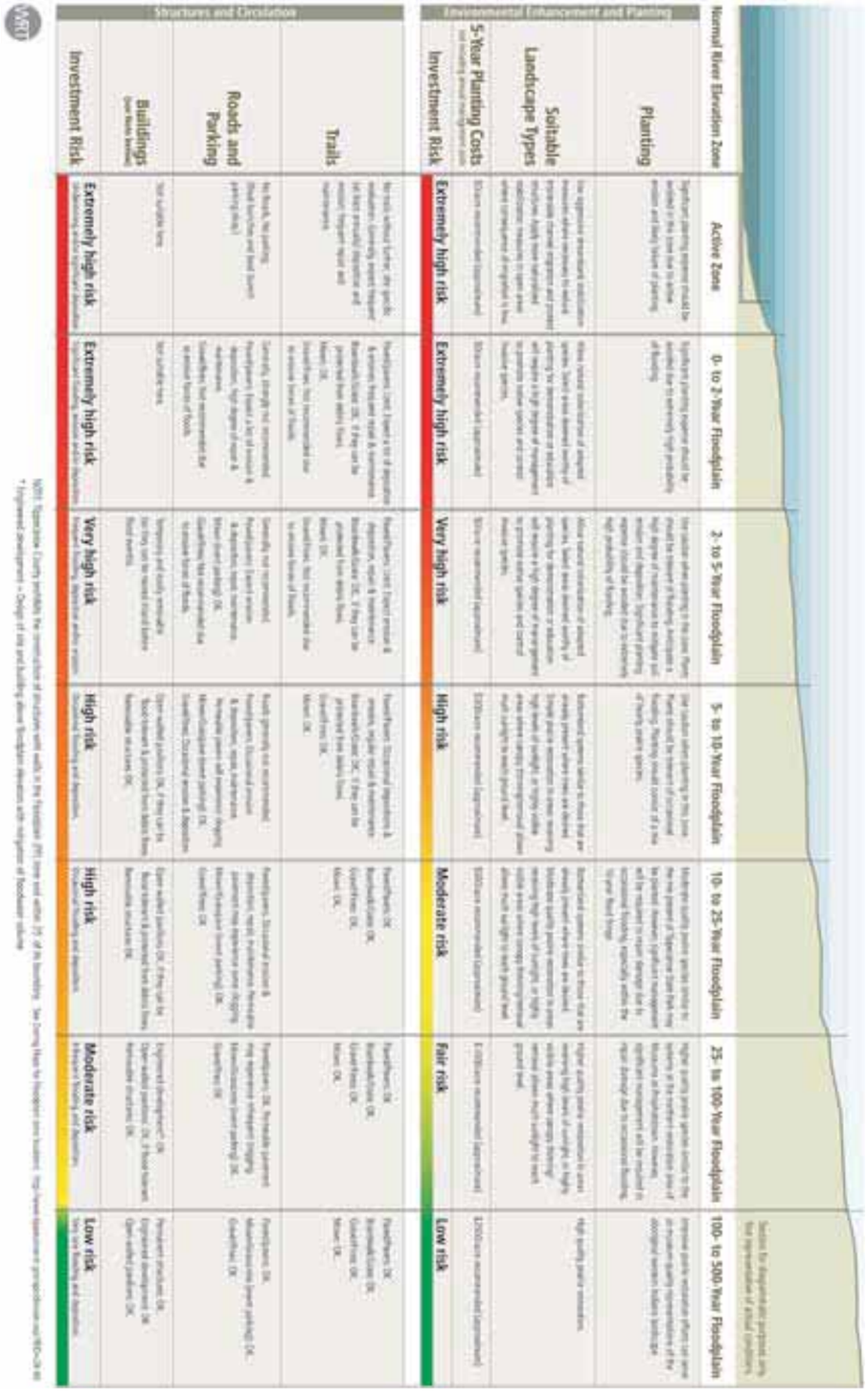
	Normal River Elevation Zone	25- to 100-Year Floodplain
Environmental Enhancement and Planting	Planting	Higher quality prairie species similar to the systems at the northern restoration area of Museums at Prophetstown. However, significant management will be required to repair damage due to occasional flooding.
	Suitable Landscape Types	Higher quality prairie restoration in areas receiving high levels of sunlight, or highly visible areas where canopy thinning/ removal allows much sunlight to reach ground level.
	5-Year Planting Costs not including annual management costs	$1000/acre recommended (approximate)
	Investment Risk	Fair risk
Structures and Circulation	Trails	Paved/Pavers: OK Boardwalk/Grate: OK. Gravel/Fines: OK. Mown: OK.
	Roads and Parking	Paved/pavers: OK. Permeable pavement may experience infrequent clogging. Mown/Grasscrete (event parking): OK. Gravel/Fines: OK
	Buildings (see Note below)	Engineered development*: OK. Open-walled pavilions: OK, if flood-tolerant. Removable structures: OK.
	Investment Risk	Moderate risk Infrequent flooding and deposition.



Floodplain Stages: 100- to 500-Year Floodplain

	Normal River Elevation Zone	100- to 500-Year Floodplain
		Section for diagrammatic purposes only. Not representative of actual conditions.
Environmental Enhancement and Planting	Planting	Intensive prairie restoration efforts can serve as museum-quality representations of the aboriginal western Indiana landscape.
	Suitable Landscape Types	High quality prairie restoration.
	5-Year Planting Costs not including annual management costs	$2500/acre recommended (approximate)
	Investment Risk	Low risk
Structures and Circulation	Trails	Paved/Pavers: OK Boardwalk/Grate: OK. Gravel/Fines: OK. Mown: OK.
	Roads and Parking	Paved/pavers: OK. Mown/Grasscrete (event parking): OK. Gravel/Fines: OK
	Buildings (see Note below)	Permanent structures: OK. Engineered development: OK. Open-walled pavilions: OK.
	Investment Risk	Low risk Very rare flooding and deposition.





The overall matrix showing floodplain stages against assessment of risk and suitable investment.

ISSUES AND OPPORTUNITIES

SUMMARY OF EXISTING CONDITIONS

The Lafayette–West Lafayette area is much more than a college town with charming and livable neighborhoods. It is an important cultural, research, and economic center of the Midwest, with institutions like Alcoa, Caterpillar, Fairfield Manufacturing, Wabash National, Subaru of Indiana Automotive, Evonik Industries, Tate & Lyle, TRW, Landis+Gyr, and Purdue University.

The area is connected to the national rail system via Amtrak's Cardinal and Hoosier State routes. The Cardinal route connects Chicago to New York City, running through Indiana, Ohio, Kentucky, West Virginia, and Virginia, then up the east coast to New York. The region is also well served by the CityBus system, whose investments in the area are expanding. In addition, the trail system continues to improve and bicycle use is relatively high, partially due to the high percentage of students.

The role of the region in American history has been significant and diverse. The Feast of the Hunters' Moon, a significant, local, annual living history event held at Fort Ouiatenon Park (historically, a site of these gatherings in the 1700's) celebrates the annual fall gatherings typical to the mid 1700's French/European/Native American fur trading economy of the region. Tippecanoe Battlefield and Prophetstown State Park mark the site where western forces overtook a nascent confederacy of Native Americans and its capital, Prophet's Town. There are also many homes and sites of historic and architectural significance, contributing to a rich and layered historic context.

Places of cultural and horticultural interest in the greater Lafayette region include Jerry E. Clegg Botanic Garden, the Horticulture Gardens at Purdue University , Wolf Park, and Columbian Park and Zoo. There is not yet a fully interconnected and comprehensive parks and trails system along the Wabash, but existing parks offer places for fishing, occasional boating, golfing, picnicking, skating, cross country skiing, performance spaces, trails, a dog run, and playgrounds. Rowing became a part of the recreational mix when Purdue Crew opened its rowing facility in 2010.

The Wabash is not currently at the center of community life. It is not even visible from many places along the corridor. The edges of the river are frayed, in terms of development pattern, recreation access, and ecological function. However, the Wabash is a key feature at Tapawingo Park and the Myers Bridge. It is there that one can get a glimpse of the river and its potential.

With poor land and stormwater management practices upriver, the Wabash is an unreliable source of recreation and is often of poor visual quality. Runoff and subsequent sedimentation in the river give it a muddy appearance. In wet weather, it can overreach its banks and bring significant destruction. In dry weather, it can be virtually traversed by foot. Advocates, including Purdue, WREC, the Living Laboratory on the Wabash, a Purdue University research center and partner with WREC, Lafayette, West Lafayette, and Tippecanoe County are collaborating to improve the hydrology and ecology of the Wabash including addressing combined sewer overflow issues, and water quality research and remediation projects. Most importantly, area residents have great ambitions and support necessary investments in education, environmental stewardship, and economic development.

KEY CONSIDERATIONS

Key considerations that arose in the review of the existing conditions include:

- The importance of coordination with concurrent and related planning efforts—as well as the relevance of past visioning efforts such as the Purdue-led River Vision: The Wabash. Our River, Our Community.
- The exceptional motivation of the Lafayette and West Lafayette community to enhance the Wabash River corridor
- The vulnerability of the project area, with the great majority of the area within the floodplain
- The limited degree of connections to the waterfront, with many barriers such as rail, roadways, topography, and limited public ownership
- The large volume of treated sanitary effluent discharged by Lafayette and West Lafayette wastewater treatment plants, with an average daily discharge of approximately 26million gallons/day
- The prioritization of sites based upon the opportunities for enhancement they offer, as well as the reasonableness of risk for investment

MARKET AND ECONOMICS

INTRODUCTION

Since 2008, the Washington, D.C. office of ERA/AECOM (formerly Economics Research Associates) has prepared the market and economic elements of a 20-year vision plan for the Wabash River corridor in Tippecanoe County, Indiana. These studies, which were prepared for Wallace, Roberts and Todd (WRT) of Philadelphia on behalf of the Wabash River Enhancement Corporation (WREC), have tested market potentials, financial feasibility, and economic impacts associated with general development opportunities for three planning areas identified as the Northern Reach, the Central Reach, and the Southern Reach that, collectively, comprise approximately 972 acres of land on both sides of the river in Lafayette and West Lafayette. The economic studies also tested the feasibility of mixed-use development concepts for two, small prototype sites in the core area of the river corridor.

Why a Market Analysis?

The market analysis, completed in 2008-09, examines how much of Tippecanoe County's anticipated future growth could be focused in these three areas along the river corridor. As such, the market analysis is intended to frame the economic fundamentals of Tippecanoe County—and more specifically Lafayette and West Lafayette.

The market analysis includes three key elements:

Tippecanoe County serves as a regional economic destination among 12 largely rural, surrounding counties that comprise a regional "trade area" of 489,000 residents.

Table 1: Regional Population Forecasts, 2005—2040

	2005	2010	2020	2030	2040	Change: 2005-2040 Amount	CAGR*
Tippecanoe	153,875	157,524	164,589	174,919	182,992	29,117	0.5%
As % of Region	***77%***	***77%***	***78%***	***79%***	***80%***		
Warren	8,785	9,040	9,238	9,119	8,825	40	0.0%
Carroll	20,426	20,428	20,705	20,966	20,769	343	0.0%
Fountain	17,462	16,897	16,459	16,709	16,804	(658)	-0.1%
Total-Region	**200,548**	**203,889**	**210,991**	**221,713**	**229,390**	**28,842**	**0.4%**

*Compound Annual Growth Rate

Source: Stats Indiana; Economics Research Associates, July 2008

- A profile of **demographic and economic characteristics** that measures factors driving fundamental demand for real estate, such as population and employment growth, consumer retail spending, and other indicators;
- A review of historic and current **real estate market conditions** across Tippecanoe County in housing, "workplace" uses such as professional office and industrial, and supporting services such as commercial retail and lodging to understand how historic and current economic conditions may affect near-term development opportunities in the river corridor; and
- A **"demand analysis"** that translates future growth in Tippecanoe County into demand for new real estate development through a series of economic models. Key inputs include market factors and assumptions such as "capture" rates, or estimates of future growth that each of the three planning areas could potentially capture based on various assumptions.

Figure 1: Households by Income, Tippecanoe County, 2007—2012

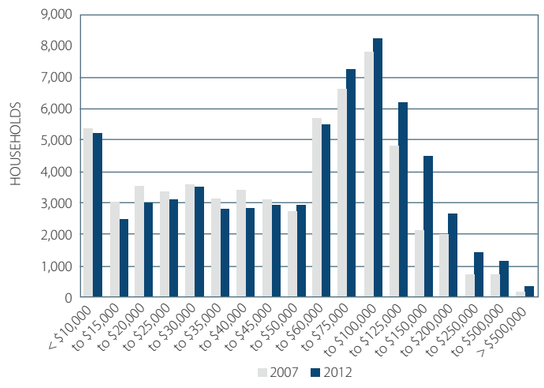
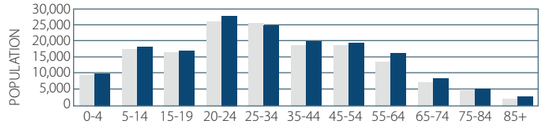


Figure 2: Population by Age Cohort, Tippecanoe County, 2007-2012



Moreover, the market study is intended to guide the many critical policy decisions required by WREC as well as the cities of Lafayette and West Lafayette to ensure that the recommendations contained throughout the plan are realized. We note that the market analysis is not a regional or local economic development strategy per se. However, several recommendations characteristic of such a strategy may be required to maximize economic potentials of the river corridor and the three planning areas. Such critical next steps are noted in this chapter; they include, but are not limited, to:

- Implementing appropriate zoning and land use regulations designed to meet key planning objectives noted in the master plan;
- Outlining specific approaches to real estate development on priority parcels—whether under private or public ownership. This may range from land acquisition strategies to partnerships with qualified developers of specific uses to build-to-suit approaches for specific users;
- Defining marketing strategies and tenant recruitment efforts, particularly for new retail and office/research & development uses due to significant competition from other areas in Tippecanoe County, including State Road 26 (the region's primary retail corridor) and Purdue Research Park (the region's premiere research and development campus);
- Conducting additional economic studies, including financial feasibility, to measure the overall investment viability of proposed projects to understand whether funding gaps exist and to identify the type and magnitude of public incentives; and
- Identifying a "toolkit" of financial and/or other regulatory incentives that may be needed to attract specific uses and/or tenants to the planning areas generally and to specific locations such as priority sites within the planning areas.

Purdue University's 725-acre West Lafayette-based park research park is located just north of the University's main campus and represents the largest cluster of technology-related businesses in the state.

Key Market Findings

Key findings from the market analysis are summarized below:

Demographics

Changes in population and households are a key metric of demand for new housing, and characteristics of the labor force and specific population indices such as age and education are critical measures in a jurisdiction's ability to attract economic growth and expansion. Tippecanoe County serves as a regional economic destination among 12 largely rural, surrounding counties that comprise a regional "trade area" of 489,000 residents. The county's historic growth patterns over the past 25 years are characteristic of a rural-to-suburban evolution—with new growth occurring on greenfields sites in outlying locations. Ready access to I-65 coupled with low land costs are contributing factors to this trend and are a consideration in estimating the amount of future growth that could be captured in the three planning areas.

- According to Stats Indiana, between 2000 and 2007, Tippecanoe County's population increased by **12,000 new residents in 6,800 new households,** a period of significant new growth generated by surging national and local economies and new job creation. At this pace, sustained annual growth averaged **850 households (units) per year** across the county. In response, new residential development surged—with an annual pace of 1,200+ permits per year issued countywide during this period.
- When the market study was prepared in 2008-09, Tippecanoe County contained 161,000 residents in 62,000 households. At the municipal level, Lafayette, the county's largest city, contains 63,700 residents (39 percent of the county) and West Lafayette has a population of slightly more than 31,000 residents (19 percent).
- As illustrated in Table 1, population growth forecasts prepared by Stats Indiana suggest that Tippecanoe County will gain **29,100+ new residents in 12,300+ new households** between 2005 and 2040.
- Presuming this forecast materializes, this equates to sustained **average annual growth of 350 households (units) per year** over the 35-year forecast period. Interestingly, state forecasts suggest that average growth over the next 35 years will occur at a more moderate pace than the rapid rate of growth that took place between 2000 and 2007. Interviews with local officials during the market analysis suggested that state population forecasts may be conservative given recent trends.

Economic Characteristics

The economic profile examined key indices in Tippecanoe County's overall economy—focusing on business expansion, household consumer retail spending, and job growth in specific sectors of the economy to understand and measure development potentials for the planning areas.

This aerial view of the Purdue Research Park shows the expansion opportunities in future development sites.

These forecasts suggest that continued economic expansion in Tippecanoe County will produce 35,000 new jobs by 2030.

Purdue Research Park

Purdue Research Park is a major regional economic development initiative, with infrastructure completed on 200 acres of its 725-acre campus. The park, which is operated by the Purdue Research Foundation, contains 52 buildings comprising 1.3 million sq. ft. of owned or leased space occupied by 160 companies providing 3,700 jobs. The park contains 364,000 sq. ft. of business incubation space, the largest university-affiliated complex in the United States.

Purdue Research Park was designated an Indiana Certified Technology Park in 2003, allowing local option and state income taxes collected from employees to be placed in a fund to finance future improvements. It has also won several other awards.

The region's diversifying economy is reflected in the fact that there are over 100 high-tech and life sciences companies in Lafayette-West Lafayette, many of which are located in the Purdue Research Park, including Lake View Technology Center, and the recently opened Innovation Center, an 80,000 sq. ft. facility.

The park has announced plans to expand its developed area by 95 acres (17 lots) in 2009. Presuming that all (or even a portion) of the 525 acres can be developed, the park contains a sizable amount of land remaining to accommodate the region's future economic growth/new development.

Job Growth

Changes in a region's labor force are a key driver of demand for various types of "workplace" real estate such as office space, retail centers and industrial parks. A profile of occupational and employment characteristics in Tippecanoe County was prepared based on available data.

As illustrated in Table 2, key findings suggest that:

- Since 2001, job growth in Tippecanoe County has been uneven—with declines in Manufacturing offsetting gains primarily in the Government and Services sectors. Job growth has occurred in education, medical/health care (with projects such as Franciscan St. Elizabeth Health -Lafayette Central and Lafayette East, IU Health Arnett Medical Center, and Lafayette Medical Park), lodging (Baymont Inn & Suites, Residence Inn), and professional and business services.
- Concerted efforts among economic development entities such as the Greater Lafayette Commerce (at the local level) to Midwest Indiana Economic Development (at the regional level) to diversify Tippecanoe's economy are paying off: 5,500 new jobs have been created since 2001. However, the loss of over 3,100 jobs in Manufacturing and several other sectors resulted in a net gain of 2,400 new jobs in Tippecanoe County during this eight-year period. (More recently, the impacts of the national economic downturn have resulted in additional job losses and furloughs across many sectors of the county's economy).

New subdivision in West Lafayette.

As noted, new jobs will translate into demand for 'workplace' real estate such as industrial parks, professional office space, and retail centers. Woods & Poole, Inc., a demographic forecasting service based in Washington, D.C., is the only service that prepares long-term employment forecasts for every county in the United States. Its forecasts for Tippecanoe County are also illustrated in Table 2.

- These forecasts suggest that continued economic expansion in Tippecanoe County will produce **35,000 new jobs by 2030**. We note that these forecasts include both part-time and self-employed individuals; such jobs may not necessarily demand new workplace real estate if such individuals work at home or can be accommodated in existing vacant space, for example.

Renaissance Place, a new mixed use development in the Lafayette urban core – Central Reach.

Table 2: Employment Trends & Forecasts, Tippecanoe County, 2000—2030

						Change Per Period	
Industry Sector	**2000**	**2007**	**2012**	**2020**	**2030**	**2000-2007**	**2007-2020**	**2020-2030**
Tippecanoe County								
Mining & Construction	4,793	4,965	5,490	6,307	7,274	172	1,342	967
Manufacturing	18,386	15,255	15,301	15,369	15,443	(3,131)	114	74
Transp/ Communications	2,839	3,124	3,242	3,430	3,664	285	306	234
Wholesale & Retail Trade	20,194	20,304	21,921	24,434	27,428	110	4,130	2,994
Finance/ Institution/ Real Estate	5,676	5,737	5,722	5,677	5,585	61	(60)	(92)
Services	24,140	27,227	30,386	35,059	40,174	3,087	**7,832**	**5,115**
Government	21,119	22,942	25,635	29,869	34,950	1,823	**6,927**	**5,081**
Total	**97,147**	**99,554**	**107,697**	**120,145**	**134,518**	**2,407**	**20,591**	**14,373**
Total new Jobs (2007-2030)								**35,000**
Annual Increase (Rounded)						300	1,600	1,400

Source: Woods & Poole Economics, Inc; Economics Research Associates, July 2008

Table 3: Residential Permit Activity, 2000—2007

							Change: 2001-2007			
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**Total**	**Avg. Ann'l**
Total Permits										
Tippencanoe	1,710	1,476	1,295	1,376	1,365	939	814	826	9,792	**1,224**
Lafayette	583	356	292	483	304	153	93	97	2,361	**295**
As % of County	***34%***	***24%***	***23%***	***39%***	***22%***	***16%***	***11%***	***12%***	***24%***	
West Lafayette	58	509	360	148	93	100	228	148	1,644	**206**
As % of County	***3%***	***34%***	***28%***	***11%***	***7%***	***11%***	***28%***	***18%***	***17%***	
Carroll	92	100	125	128	126	121	93	81	857	108
Fountain	8	9	15	10	6	11	11	10	80	10
Warren	67	54	53	56	37	29	46	22	364	46
Total	**1,877**	**1,639**	**1,480**	**1,570**	**1,534**	**1,100**	**964**	**939**	**11,103**	**1,388**

Source: Tippecanoe County; US Department of Housing & Urban Development; Economics Research Associates, July 2008

Real Estate Market Conditions

As part of the market analysis, ERA/AECOM evaluated real estate market conditions in Tippecanoe County in housing, "workplace" uses such as professional office and industrial, and supporting services such as commercial retail and lodging to understand how recent trends, current economic conditions, and future growth forecasts affect both near- and long-term development opportunities in the planning areas.

A key challenge in tertiary (emerging) markets such as Tippecanoe County include limited historic data to evaluate market conditions, such as absorption (i.e., leasing activity) to understand historic occupancy patterns in office, retail and industrial space. This is not uncommon in small markets. However, we strongly recommend that regional economic development entities such as Greater Lafayette Commerce initiate annual or semi-annual surveys in association with local commercial and industrial brokers to track activity in key indicators such as construction deliveries, vacant space, absorption/leasing activity by building type, rental rates, etc. Ultimately, this will assist economic development efforts and tenant recruitment.

Residential

Long-term residential permit activity was compiled to understand the pace of new housing development by specific product (i.e., single-family, multi-family, etc.), and to understand residential development trends within specific communities such as Lafayette and West Lafayette.

Table 3 summarizes permit activity in Tippecanoe County and the four-county Wabash River Enhancement Corporation's long term project area since 2000. As noted, this period was one of significant population growth, and new residential development reflected this new growth. Key findings are summarized below:

- Fully 9,800 residential building permits were issued between 2000 and 2007, for an average annual pace of more than 1,200 permits per year across both single- and multi-family product.
- The majority of new housing is being constructed in unincorporated parts of the county. In fact, Lafayette accounts for 24 percent of the county's activity while West Lafayette accounts for only 17 percent, reflecting an annual pace of 200 to 300 units per year in each municipality.

While single-family units comprise the lion's share of new housing in Lafayette as well as the county as a whole, it accounts for only 30 percent of new residential development in West Lafayette. The presence of Purdue University likely drives significant demand for off-campus, multi-family rental product (such as garden apartments). In fact, over 1,100 permits have been issued for multi-family units in West Lafayette since 2000.

Table 4: Regional Office Market Conditions

City/ Supermarket	**Rentable Bldg. Area**	**% Share**	**Sq. Ft. Available**	**% Vacant**
Lafayette	1431,514	78%	360,015	25.1%
West Lafayette	413,107	22%	45,567	11.0%
Total	**1,844,621**	**100%**	**405,582**	**22.0%**

Source: CoStar Realty Information; Economics Research Associates, December 2008

Speculative/Multi-tenant Office

ERA/AECOM also examined market conditions and trends among workplace uses in Tippecanoe County. Notably, specific data on leasing/absorption activity—a key barometer in evaluating market strengths and weaknesses as well as development opportunities for such uses—is not available.

In addition to the area's key economic generators of manufacturing, life sciences and education, demand for office space in Tippecanoe County is fueled by its role as a regional financial center. There are 14 banks, two credits unions, the headquarters of Lafayette Life Insurance Company (215 employees), and State Farm Insurance has a regional office (750 employees).

Limited information on the area office market was obtained from CoStar Realty, a national database that tracks market conditions in office, retail and industrial real estate for localities across the United States. However, CoStar does not track historic absorption activity in Tippecanoe County.

Available information is illustrated in Table 4 and noted as follows:

- Data indicate that Lafayette contains the majority of the region's office space, with 1.4 million sq. ft. of inventory.
- Recently-delivered office buildings include Renaissance Place, a $25 million mixed-use project in downtown Lafayette; and Cascada Business Park, a suburban business park located on McCarty Lane. Other office buildings are located in the Purdue Research Park, INOK Business Park, Sagamore Parkway, and in historic buildings in downtown Lafayette, several of which have been restored.
- There are a reported 360,000 sq. ft. of vacant space in Lafayette, which translates into a 25 percent vacancy rate.

Table 5: Regional Retail Market Conditions

	Total RBA (In Sq. Ft.)	Sq. Ft. Available	Occupancy	Average Asking Rents (Per Sq. Ft.)
West Lafayette	1,106,698	100,289	90.9% $	11.87
Lafayette	6,446,110	816,551	87.3% $	14.62
Other	37,741	12,200	67.7% $	
Total	**7,590,549**	**929,040**	**87.8% $**	**12.36**

ERA notes that historical trend information (occupancy, absorption, supply) for the Tippecanoe retail market is not available from CoStar or local market sources.
Source: CoStar Realty Information; Economics Research Associates, July 2008

- By comparison, the office inventory in West Lafayette is significantly smaller, with 413,000 sq. ft. of multi-tenant office space. It is also a stronger market, with a reported 45,600 sq. ft. of vacant space (11 percent). In combination, the region's 1.8 million sq. ft. of office space has a vacancy rate of 22 percent.
- Regional market dynamics suggest that short-term opportunities for new office development will be limited. Capital markets seek sustained annual occupancies in the range of 90 percent or higher as a threshold in financing new office development.

Commercial Retail

Tippecanoe County serves as a regional retail hub for the surrounding rural counties, with a regional inventory totaling 7.5 million sq. ft. of retail space among neighborhood and community shopping centers, power centers, and a regional mall. The State Road 26 corridor serves as the region's primary retail cluster, and State Road 52/Sagamore Parkway and State Road 38 are also retail concentrations.

The region's 930,000 sq. ft. of vacant retail space (12 percent) is scattered across multiple locations. However, key vacancies include several empty "Big Box" retailers such as K-mart, the shuttered center adjacent to Tippecanoe Mall, and others. Vacancy rates have increased with the economic downturn, as the retail industry contracts due to bankruptcies, mergers and consolidations, and reduced consumer spending.
The county's largest retail venues include:

- Tippecanoe Mall with 840,000 sq. ft. anchored by Macy's, Kohl's, Sears, J.C. Penney, HH Gregg and Dick's Sporting Goods, with 100 in-line retailers;
- Lafayette Pavilions, a 350,700 sq. ft. power center on a 32-acre site on State Road 26 delivered in 2006. Anchors include: Hobby Lobby, TJ Maxx, and Gordman's department store. The center contains several pad retail sites, and has relatively low vacancy.

Figure 3: Market Performance—Full-service Properties

- Tippecanoe Court and Lafayette Market Place, both secondary retail centers containing 50 or so retailers.
- The City of Lafayette is the region's retail powerhouse, with 6.4 million sq. ft., with retail clustered in the highway corridors noted above. A reported 816,000 sq. ft., or 13 percent, is vacant.
- By comparison, West Lafayette contains 1.1 million sq. ft., with 100,300 sq. ft., or nine percent, reportedly vacant. Shopping venues in West Lafayette reflect its preeminent role as a college town, with university-related and specialty retail centers that include: Wabash Landing, Sagamore West, University Square, and the Chauncey Village shopping district near the Purdue University campus. Restaurants range from ethnic eateries to national chains.

Hotel/Lodging

According to the Greater Lafayette Convention and Visitors Bureau, Lafayette and West Lafayette attract 3.5 million visitors annually. These visitors generate more than $200 million in indirect expenditures on lodging, food, retail, entertainment, and other spending. Some of the area's attractions include the sports and cultural venues associated with Purdue University, Civic Theatre of Greater Lafayette, Wolf Park-NAWPF, Prophetstown State Park, Historic Prophetstown, the City of Lafayette's community zoo and aquatic park, the Long Center for the Performing Arts, Imagination Station and Wildcat Creek Winery.

The area contains a range of full- and limited-service and extended-stay hotel properties, such as Holiday Inn City Centre, Best Western Lafayette Executive Plaza & Conference Center, Hilton Garden Inn, and Homewood Suites. According to the Convention and Visitors Bureau, there are more than 2,600 hotel rooms in Tippecanoe County. Market dynamics during the market analysis in 2008 are illustrated in Table 6. In addition, several hotel/lodging projects were announced at the time the market analysis was completed, including:

- Candlewood Suites announced plans in December 2007 to build an 81-suite, 12,500 sq. ft. hotel on Meijer Drive proximate to I-65 (this project was delayed as of December 2008);
- Courtyard Lafayette by Marriott, a $10 million, three-story, 90-room and suite hotel on State Road 26 (opened March 2009); and
- Spring Hill Suites plans a $16 million, 151-room hotel on Tapawingo Drive in West Lafayette. The project has been delayed due to the economic downturn, and no timeline is available.

ERA/AECOM examined hotel market dynamics based on data provided by Smith Travel Research, a national lodging database that tracks performance characteristics for properties across the United States. The regional hotel market has exhibited fluctuating market dynamics over the past five years. In fact, for both full- and limited-service properties, annual occupancies increased from 12 to 17 percent; average daily rates jumped between 17 and 19 percent; and, revenue per available room (REVPAR) increased between 33 and 38 percent.

- For limited-service properties, average annual occupancy in 2008 was over 71 percent. This meets the threshold of 70 percent that capital markets seek when financing new hotel construction, which resulted in the deliveries of new limited-service properties such as the Marriott Courtyard.
- By comparison, occupancy levels among the area's full-service hotels were significantly weaker—only 57.5 percent—in 2008. Additional full-service hotel rooms would not be market-supportable under current conditions.

Figure 4: Market Performance—Limited-service Properties

According to the Greater Lafayette Convention and Visitors Bureau, Lafayette and West Lafayette attract 3.5 million visitors annually.

Table 6: Hotel Market Dynamics, 2003—2008

	2003	2004	2005	2006	2007	YTD 2008	% Change
Full-Service Properties							
Available Roomnights (Supply)	—	—	26,545	267,545	267,545	267,545	0.0%
Occupied Roomnights (Demand)	—	—	137,055	147,707	161,908	153,733	12.2%
Annual Occupancy (%)	$ —	$ —	51.2%	55.2%	60.5%	57.5%	12.2%
Average Daily Rate	$ —	$ —	$ 84.50	$ 86.57	$ 93.20	$ 100.43	18.9%
Revenue/Available Room	$ —	$ —	$ 43.28	$ 47.80	$ 56.40	$ 57.70	***33.3%***
Year-to-Year Growth							
Annual Occupancy				7.8%	9.6%	-5.0%	
Average Daily Rate				2.5%	7.6%	7.8%	
Revenue/Available Room				10.4%	18.0%	2.3%	
Limited-Service Properties							
Available Roomnights (Supply)	226,665	226,665	226,665	226,665	226,665	226,665	0%
Occupied Roomnights (Demand)	137,161	135,528	136,460	134,469	155,570	161,099	17%
Annual Occupancy (%)	60.51%	59.79%	60.2%	59.3%	68.6%	71.1%	17%
Average Daily Rate	$ 75.82	$76.15	$ 78.32	$ 80.63	$ 82.25	$ 89.08	17%
Revenue/Available Room	$ 45.88	$ 45.53	$ 47.15	$ 47.83	$ 56.45	$ 63.31	38%
Year-to-Year Growth							
Annual Occupancy		-1.2%	0.7%	-1.5%	15.7%	3.6%	
Average Daily Rate		0.4%	2.8%	2.9%	2.0%	8.3%	
Revenue/Available Room		-0.8%	3.6%	1.4%	18.0%	12.1%	

Source: Smith Travel Research; Economics Research Associates, August 2008

Value Created by Recreational Amenities & Open Space

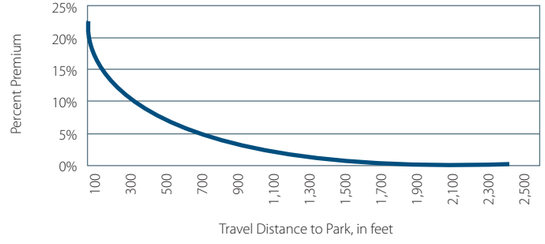
A key element of the plan for the Wabash River corridor includes recommendations regarding investment in recreational amenities, open space, and other public realm improvements intended to enhance the overall quality-of-life along the river corridor. Moreover, as has been documented in places across the United States that have implemented similar projects, such public realm improvements frequently enhance land and property values of surrounding real estate. A summary of the literature examining such initiatives indicates the following:

- Trails and greenways generally add a premium of six percent to nine percent in value for adjacent and nearby properties;
- Greenbelts add a premium of six percent to 12 percent for adjacent properties;
- Open space and recreational amenities are important considerations in corporate site selection;
- Construction and operating costs of public realm improvements can be offset or mitigated by increases in property values, particularly if a special assessment district is created that allocates annual incremental fees (such as tax increment financing) to debt service payments for infrastructure costs;
- Residential lot premiums vary by distance, view, type of amenity, with the highest premiums typically commanded by water views and "long" views over golf courses. Secondary premiums created by partial and unobstructed golf or water views.

Development Potentials

Based on the information and analysis completed as part of the market study, the following examines how much of Tippecanoe County's anticipated future growth can be focused in the three planning areas located along the Wabash River corridor.

Figure 5: Impacts of Park & Recreational Amenities on Property Values



Market-rate Residential

There are several overarching issues affecting the amount of new housing that can allocated to the three planning areas. As noted, the focus of new residential development in Tippecanoe County over the past 25+ years has been on greenfields sites in outlying locations. While the introduction of new housing in the downtown core (such as Renaissance Place) is positive, it is incremental and has resulted in a very small capture of overall demand for new housing.

Therefore, to induce new housing to the three planning areas, this trend will need to shift, with resources and public policies tailored to attract an increasing share of new housing to the core areas of Lafayette and West Lafayette. Notably, area planners suggest that state enabling legislation regarding land use controls in Indiana is weak, which may hinder regulations such as urban growth boundaries that could redirect new residential development to the core. As a result, incentives—both regulatory and financial—may be necessary to enhance or induce market potentials for new residential development in the three planning areas.

Moreover, another factor affecting housing potentials in the planning areas includes the amount of growth expected to occur in unincorporated parts of Tippecanoe County, that is, in those areas where land costs are lowest. Municipal officials in Lafayette and West Lafayette will have to compare the fiscal costs and impacts of annexation in outlying locations (such as the costs of providing new municipal infrastructure for new development) against the fiscal benefits created (such as new tax revenues). As part of this analysis, it is recommended that each municipality also compare similar costs and benefits generated by policies that direct new growth to the planning areas, including the costs of incentives, to derive the net fiscal impacts of each growth scenario.

The analysis in Table 7 distributes new housing based on the current pattern of construction by unit type. If current patterns continue the lion's share of new housing (7,500 units) by 2040 would be single-family detached. As low-density sprawl will reduce the amount of land available for new development, infill sites such as the core areas could become increasingly attractive, particularly with the provision of incentives that redirect development to such locations. In addition, as Tippecanoe urbanizes, it is likely that new housing will be built at higher densities, shifting the focus away from low-density single-family to a mix of moderate- to higher-density product that would characterize infill sites such as the core areas.

On the other hand, since high land costs (and other potential challenges such as environmental remediation) of core area sites may hinder overall marketability, additional studies will be necessary to identify appropriate financial incentives and other land use strategies to enhance overall market potentials. Mechanisms designed to reduce potential funding gaps in project feasibility, including the use of tax abatements, are appropriate incentives and should be examined further.

Planning Targets: New Housing

Market potentials for new housing are illustrated in Table 7.

- Population and household growth forecasts prepared by Stats Indiana suggest 29,000+ new residents by 2040, which would translate into **12,300+ new households** based on current occupancy patterns. Over the next 35 years, this equates to annual average demand for **350 new housing units per year across Tippecanoe County**.
- The "carrying capacity" studies conducted during the planning process suggested that the three planning areas have sufficient land to accommodate more than 8,000+ units, or fully 66 percent of the 12,300 total units generated by household growth by 2040. This would require average densities of 26 units per acre across the estimated 309 acres of net developable land based on WRT's studies. However, given the amount of land available to accommodate new development elsewhere in Tippecanoe County as well as development patterns that reflect generally low densities across the county, capturing fully two-thirds of future countywide housing demand in the three planning areas is unlikely.
- Based on ERA/AECOM's national experience in urban redevelopment, a more reasonable baseline capture is in the range of 10 percent—or 1,200 units. Successful, appropriate incentives tailored to attract additional residential development to the core—coupled with ongoing economic development initiatives that enhance job creation—could serve to induce demand—with a capture of up to 20 percent—or 2,500 units. This would reflect average densities ranging from four to eight units per acre on the net developable acreage.
- By comparison, in cities across the United States the rule-of-thumb is that one to three percent of a metropolitan area's population will reside in a downtown core, although it ranges from 10 percent or more in several high-density Northeastern cities.
- As specific projects move forward, detailed feasibility studies will be required to determine phasing, appropriate unit mix, and tenure opportunities (i.e., owner vs. renter) as market demand warrants.

Commercial—Multi-tenant/Professional Office

Job growth is the predominant driver of demand for new workplace uses such as office buildings, retail centers and industrial parks. Continuing diversification of Tippecanoe County's economy will be critical for long-term growth and for ensuring that the 2030 forecasts of 35,000 new jobs materialize.

We note that the Woods & Poole forecasts include both part-time and self-employed individuals. As a result, some portion of these may not necessarily translate into new office buildings if, for example, a self-employed individual works at home. Current weakened market conditions, including limited absorption, an existing vacant inventory of over 400,000 sq. ft., and the presence of functional/physical obsolescence that could be expected to result in redevelopment opportunities at some future point in time will necessitate careful testing of market opportunities and financial feasibility as specific projects are identified.

Figure 6: Distribution of Housing Units, by Planning Areas

Planning Areas	Baseline	Induced
Northern Reach	400	800
Central Reach (both sides of river)	600	1,400
Southern Reach	200	200
Total	**1,200**	**2,500**

Another critical issue in understanding market potentials for new office development in the planning areas is that demand for new office space can be satisfied in several other competitive locations across Lafayette and West Lafayette. These include:

- Purdue Research Park—which has over 500 acres of land available to accommodate new office and research and development/laboratory uses
- Other "infill" sites–outside of the three planning areas such as the highway corridors of State Roads 26, 38 and 52. Such locations could become increasingly competitive as functional and physical obsolescence in aging commercial buildings warrants redevelopment
- Undeveloped suburban sites—such as parcels on McCarty Lane, Creasy Lane and other locations; Cascada Business Park exemplifies new, competitive office space on suburban sites
- Existing vacant office space—as noted, there are over 405,000 sq. ft. of vacant office space in Lafayette and West Lafayette available for leasing

Table 7: Housing Market Potentials, 2040

		2005	2010	2015	2020	2030	2040	TOTAL
Estimated Housing Demand								
Tippecanoe County Population Forecast	**(1)**	153,875	157,524	161,474	164,589	174,919	182,992	
Net Population Growth		—	3,649	3,950	3,115	10,330	8,073	**29,117**
No. of Housing Units	**(2)**	65,201						
Estimated Vacancy		7.9%						
Net Occupied Housing Units:		**60,050**						
Estimated Persons/HH		2.36						
Net New Housing Units			**1,546**	**1,674**	**1,320**	**4,377**	**3,421**	**12,338**
Annual Average			309	226	264	438	342	353
Revenue/Available Room					10.4%	18.0%	2.3%	
Distribution by Product Type (3)								
Single-Family	61.0%	—	943	1,021	805	2,670	2,087	7,526
Duplex	4.5%	—	70	75	59	197	154	401
Multi-Family	29.9%	—	462	500	395	1,309	1,023	2,666
Mobile Home	4.4%	—	68	74	58	193	151	392
Other	0.2%	—	3	3	3	9	7	18
Total Units by Period:		**—**	**1,546**	**1,674**	**1,320**	**4,377**	**3,421**	**12,338**
Core Area Market Potentials	**(4)**							
WRT "Buildout Area of use" (All Sites)					In Sq. Ft.		12,146,413	
Assumed Average Unit Size					In Sq. Ft.		1,500	
Estimated WRT "Carrying Capacity" (Units):							**8,098**	
Required Market Penetration (As % of Growth Potentials)							65.6%	
Units Per Acre (of Net Developable Land)							***26***	
Target Capture of Future Growth								
Baseline Market Capture	**(5)**				10%		1,234	
Units per Acre (of Net Developable Land)							4	
Induced Market Capture @					20%		2,468	
Units per Acre (of Net Developable Land)							***8***	

(1) Based on Population forecasts as prepared by Stats Indiana.

(2) Persons per household and housing vacancy data based on 2007 estimates as prepared by ESRI Business Analyst.

(3) Based on the 2000 US Census for Tippecanoe County. Analysis assumes that the current distribution of housing is held constant throughout the forecast period

(4) As estimated by WRT; exclusive of respective parking for residential uses.

(5) In the US, 5% to 10% of a metropolitan area population will reside in a "core" location (e.g., downtown, adjacent neighborhoods.)

Source: Economics Research Associates, December 2008

Planning Targets: New Office

Market potentials for new office space are illustrated in Table 8.

- If 35,000 new jobs are created by 2030, new jobs in office-using sectors suggest countywide demand for up to 2.7 million gross sq. ft.; this includes vacancy and cumulative replacement adjustments, which reflect tenant movement in the marketplace as well as buildings removed from inventory due to obsolescence.
- From a financing perspective, some portion of the large amount of vacant office space (over 400,000 sq. ft.) would have to be leased prior to financing new office development. We assume that fully 75 percent would require pre-leasing (304,000 sq. ft.). In addition, some portion of new job growth will be part-time and self-employed individuals not requiring speculative office space; this could further reduce demand by an estimated 20 percent (535,000 sq. ft.), leaving countywide net demand due to job growth at roughly 1.8 million sq. ft. by 2030.

Lafayette

- Currently, Lafayette contains 78 percent of the region's office inventory. We estimate that will decline to 75 percent (as development of Purdue Research Park increases West Lafayette's share), resulting in the potential for up to 1.37 million sq. ft. of new office development in Lafayette by 2030.
- We estimate that the Lafayette side of the three planning areas could capture between 25 and 50 percent—a potentially significant capture that may be achievable (particularly in the Central Reach because it is the Central Business District). Combined with the provision of specific incentives (to be determined), the potential exists for the Northern and Central Reaches in Lafayette to capture between 350,000 and 700,000 sq. ft. of new office space by 2030.
- As illustrated in Figure 7, the majority of new office development in both the Baseline and Induced scenarios should be located in the Central Reach. This will serve to expand the CBD and reinforce its role as the region's primary economic activity generator. Secondary office space can also be located on those blocks at the south end of the Northern Reach (adjacent to the CBD).
- Thus, the unallocated office space could be built anywhere else in the city—considering redevelopment potentials along the highway corridors, additional development capacity on suburban sites like Cascada, potential medical office development surrounding the two new hospitals, etc.

West Lafayette

- Currently, West Lafayette contains 22 percent of the region's office inventory. We estimate that will increase to 25 percent, resulting in the potential for up to 450,000 sq. ft. of new office development in West Lafayette by 2030. West Lafayette's increasing share is primarily a result of the availability of over 500 acres of land at Purdue Research Park, which could potentially capture all of the future demand for new office space in West Lafayette if marketing and recruitment efforts are successful.
- As a result, this would suggest that new office development elsewhere in West Lafayette would be oriented to smaller, price-sensitive professional services tenants, and product oriented to small Class B, "garden" office buildings. (Conversely, new office development at Purdue Research Park would be oriented to owner-users in Class A, or "signature", higher-priced buildings.
- We estimate that the West Lafayette side of the three planning areas could capture between 20 and 30 percent of office demand. Sites in the Central Reach, such as Levee Plaza, are the best locations to accommodate the estimated 90,000 to 140,000 sq. ft. of new office development in West Lafayette by 2030.
- Other site considerations affecting the overall marketability of new office development in all planning areas include: site size, street frontage, visibility, adequate levels of parking (typically in the range of three spaces per 1,000 gross sq. ft., financial feasibility, etc.

Commercial—General Retail

Retail uses require a concentration of disposable income from nearby households, residents of appropriate surrounding trade areas, employees and/or visitors; strong visibility and extensive frontage; adequate parking; a clear competitive role for the retail center in the trade area; and, market identity. Moreover, supporting tenants oftentimes require an anchor tenant—such as a grocery store—to supplement consumer traffic.

The retail analysis uses an assumed trade area comprised of Carroll, Warren, Fountain and Tippecanoe counties.

The Pavilions, a new shopping center on SR 26 in Lafayette.

Table 8: Office Market Potentials, 2030

Industry Sector		New Jobs 2007-2030	% Office-Using	SF Occupancy Factor	Potential Countywide Demand (Sq. Ft.)
Tippecanoe County					
Mining & Construction		2,309	20%	175	80,800
Manufacturing		188	10%	185	3,500
TCPU 1		540	25%	185	25,000
Wholesale & Retail Trade		7,124	15%	200	213,700
Finance/Insurance/ Real Estate		**(152)**	85%	250	(32,300)
Services		12,947	40%	250	1,294,700
Government		12,008	40%	165	792,500
Total or Weighted Average		**34,964**	**33%**	**204**	**2,377,900**
+ Vacancy Adjustment @	(2)		5.0%		118,900
+ Cumulative Replacement Demand	(3)		7.5%		178,300
Total Gross Demand (In Sq. Ft)					**2,675,100**
- Existing Vacant Office Space	(4)				304,179
- Self Employed/Part-time Employment	(5)				535,020
Total Net Demand (Rounded, In Sq. Ft.)					**1,835,900**
Core Area Market Potentials					
Buildout Area of use (All Sites)	**(6)**				3,706,569
Required Market Penetration (As % of Growth Potentials)					202%

(1) Reflects office-using employees in each employment sector.
(2) This allows for a 5% "frictional" vacancy factor in new space delivered to the market.
(3) This represents new space required by existing businesses to replace obsolete or otherwise unusable space.
(4) Assumes that 50% of existing vacant office space is leased.
(5) Assumes that 20% of new jobs will be self-employed/part-time not requiring new office space.
(6) As estimated by WRT; exclusive of respective parking for office uses.

Table 8: Office Market Potentials, 2030

Industry Sector	New Jobs 2007-2030	% Office-Using	SF Occupancy Factor	Potential Countywide Demand (Sq. Ft.)
Target Capture of Future Growth				
City of Lafayette	(7)			
Share of County Office Space				75%
Subtotal-City of Lafayette (Rounded, In Sq. Ft.)				**1,376,900**
Baseline Market Capture @			25%	**344,000**
Induced Market Capture @			50%	**688,000**
City of West Lafayette	(8)			
Share of County Office Space				25%
Subtotal-City of West Lafayette (Rounded, In Sq. Ft.)				**459,000**
Baseline Market Capture @			20%	**92,000**
Induced Market Capture @			30%	**138,000**

(7) Assumes high-density development in the Central Reach on the Lafayette side of the Wabash River.

(8) Continued development of Purdue Research Park could be expected to enhance marketability for new office and R&D uses in West Lafayette. Remaining potentials will be oriented to professional office space in the Central Reach on the West Lafayette side of the Wabash River.

Source: Woods & Poole, Inc.; Economics Research Associates, updated September 2010.

Figure 7: Distribution of Office Space, by Planning Areas

Planning Areas	Baseline	Induced
Lafayette		
Northern Reach	100,000	200,000
Central Reach	250,000	500,000
Southern Reach	0	0
Total	**350,000**	**700,000**
West Lafayette		
Northern Reach	0	0
Central Reach	90,000	110,000
Southern Reach	0	30,000
Total	**90,000**	**140,000**

Planning Targets: New Retail

Market potentials for new office space are illustrated in Table 9.

- As noted previously in Table 5, Tippecanoe County contains 7.5 million sq. ft. of retail space. This equates to 47 sq. ft. of retail space per county resident and 38 sq. ft. of retail space for each resident of Tippecanoe and the three surrounding counties. This is significantly above the national average of 26 sq. ft. per person, and reflects the fact that Tippecanoe County is a regional (retail) destination serving a largely rural surrounding trade area.
- State forecasts suggest a net gain of more than 28,800 new residents in the trade area by 2040. Using the 38 sq. ft. per capita retail factor translates into almost 1.1 million sq. ft. of gross retail demand by 2040. This could be supplemented by "inflow", that is, additional spending by students and visitors to the region, resulting in additional demand estimated at 273,000 sq. ft.
- The analysis also accounts for vacant space. There is 930,000 sq. ft. of vacant retail space in Tippecanoe County. The analysis assumes that 50 percent of this space would have to be leased prior to financing construction of new retail space. This yields net demand for **900,000 sq. ft. of new retail space across the trade area by 2040.**

Lafayette

- Currently, Lafayette contains 85 percent of the region's retail inventory. We estimate that will decline slightly to 80 percent, resulting in the potential for up to 720,000+ sq. ft. of new retail development in Lafayette by 2040.
- We estimate that the capture of new retail space on the Lafayette side of the three planning areas will be limited because of the critical mass/clustering effect of a significant amount of retail elsewhere in the city—such as the 26, 52 and 38 commercial corridors.
- A limited capture ranging from 10 to 15 percent yields demand for 72,000 to 108,000 sq. ft. by 2040, which suggests two to three small neighborhood centers providing new residents of the Northern and Central Reaches with supporting convenience and service retail options. Alternatively, a small grocery-anchored community center of 50,000 to 75,000 sq. ft. could be centrally located proximate to new residential clusters in both of these planning areas. Market support for supporting retail in the Southern Reach will be largely determined by the number of new housing units in this planning area; however, it is likely to be limited.

West Lafayette

- Currently, West Lafayette contains 15 percent of the region's retail inventory. We estimate that the city's market share has the potential to increase to 20 percent, as Purdue Research Park, expansion of Purdue University, and redevelopment of the core enhance overall prospects for new retail development in the city.

This could produce demand for up to 180,000 sq. ft. of new retail uses in West Lafayette by 2040.

- We estimate that the three planning areas in West Lafayette could capture between 30 and 60 percent or more of this future retail demand. Other locations competing for market share will include the Chauncey retail district as well as Purdue Research Park, which is likely to provide supporting amenities such as retail as on-site employment increases over time.
- West Lafayette sites in the Central Reach, such as Levee Plaza, are the best locations to cluster new retail development in mixed-use projects. Incremental retail development in the Southern Reach will be largely determined by access, visibility and frontage of sites that could be developed along the parkway/bypass road extending to the Purdue campus. However, such sites will require uses such as new residential or office development to support any retail space in this location. In total, the Central and Northern Reaches are able to best accommodate the estimated **54,000 to 108,000 sq. ft. of new retail development in West Lafayette by 2040**.

Figure 8: Distribution of Retail Space, by Planning Areas

Planning Areas	Baseline	Induced
Lafayette		
Northern Reach	35,000	50,000
Central Reach	35,000	55,000
Southern Reach	2,000	3,000
Total	**72,000**	**108,000**
West Lafayette		
Northern Reach	0	0
Central Reach	50,000	100,000
Southern Reach	4,000	8,000
Total	**54,000**	**108,000**

Continuing diversification of Tippecanoe County's economy will be critical for long-term growth and for ensuring that the 2030 forecasts of 35,000 new jobs materialize.

Table 9: Retail Market Potentials, 2040

		Tippecanoe	& 4-County Region
Existing Retail Space (In Sq. Ft.)		7,590,549	7,590,549
Current Population		160,816	200,548
Retail Space Per Capita (In Sq. Ft.):		**47**	**38**
Net Population Growth (2005-2040)	**(1)**		28,842
Assumed Retail Space Per Household (Sq. Ft.)			38
Total Gross Demand (Rounded, In Sq. Ft.)			**1,092,000**
+ Inflow @ 25%	(2)		273,000
- Exisiting Vacant Retail Space	(3)		464,500
Total Net Demand (Rounded, In Sq. Ft.)			**900,500**
Core Area Market Potentials			
WRT "Buildout Area of use" (All Sites)			118,900
Required Market Penetration (As % of Growth Potentials)			535,020
Total Net Demand (Rounded, In Sq. Ft.)			**1,835,900**
Target Capture of Future Growth			
City of Lafayette	**(4)**		
Share of County Retail Space			80%
Subtotal-City of Lafayette			**720,400**
Baseline Market Capture @		10%	**72,000**
Induced Market Capture @		15%	**108,000**
City of West Lafayette	**(5)**		
Share of County Retail Space			20%
Subtotal-City of West Lafayette			**180,100**
Baseline Market Capture @		30%	**54,000**
Induced Market Capture @		60%	**108,000**

(1) Based on population forecasts for the four-county region ("trade area") as prepared by Stats Indiana.

(2) Inflow reflects estimated additional retail spending generated by visitors to Tippecanoe County, college students, etc.

(3) Assumes that 50% of the estimated 930,000 sq. ft. of vacant retail space is leased prior to new construction.

(4) Assumes incremental capture of future retail to core area (i.e., retail corridors such as State Road 26 & 52 will remain the predominant retail clusters in Lafayette).

(5) Higher capture assumes continued redevelopment surrounding Wabash Landing with mixed-use retail uses to reinfoce identity/role of West Lafayette core areas. Remaining demand allocated to other areas such as Chauncey Village district.

Source: CoStar Realty; Stats Indiana; Economics Research Associates, updated September 2010.

TWO CITIES, ONE RIVER

Plan Development

- Alternative Development Scenarios
- The Preferred Plan: A 20 Year Vision for the Wabash
- The Central Reach
- The Northern Reach
- The Southern Reach

PLAN DEVELOPMENT

Before drafting plan recommendations, two development scenarios were created to examine site potential. Desirable attributes of both alternatives were later synthesized—along with ideas from stakeholder and public meetings—into a preferred plan, as outlined in following sections.

Plan alternatives considered overall project goals, in addition to:

- achieving the highest long-term return on investment
- employing best environmental practices (even though local impacts are at least partially caused by upstream conditions)
- aligning projects with feasible funding sources
- creating livable, sustainable neighborhoods

Certain ideas that surfaced in previous community visioning discussions were not explored in alternatives development. One such idea is the creation of a dam in this section of the Wabash. Since the Wabash has a highly variable flow, fluctuating between exposed sand bars in the summer and frequent flooding in spring months, recreational use is somewhat unpredictable. Some members of the community have advocated for a dam that would keep the water level more constant, helping to support more water-based recreation on the river. Project research showed very little federal support and funding opportunities for recreational dams, particularly given the negative impact they can have on fish passage and other ecological functions. For these reasons, there are significant regulatory obstacles to constructing dams. Several concepts, such as the dam, were vetted against the considerations listed above and were discussed in meetings with residents and stakeholders.

Phasing, and immediate feasibility were not primary considerations at this stage because the alternatives represented planning "sketches" of long-term site potential. One of the most critical considerations before any investments are made to any given site in the future should be vulnerability to flooding. Flood potential will change along the corridor over time, and a few of the far future proposals for lower elevations may not be feasible in coming decades.

The Connected Community scenario sought to maximize connections between neighborhoods, amenities, and the river.

ALTERNATIVE DEVELOPMENT SCENARIOS

The Connected Community

The Connected Community scenario offers a robust approach to open space and connective elements including:

- a series of new cross-river, city-to-city connections envisioned to connect neighborhoods and key cultural and recreational features using
  - new signature pedestrian/bike bridges and
  - pedestrian infrastructure retrofits on existing bridges, such as the US 52 and US 231 bridges
- several possible connections across, under, and over the Amtrak line
- continuous riverfront trails on both sides the river
- a series of signature parks along both sides of the river
- significant riparian buffers along the Wabash
- slope restoration in areas such as Happy Hollow Park
- transformation of the West Lafayette borrow pits north of the Harrison Bridge into boating basins with adjacent boathouses
- reconfiguration of 9th Street at its connection with Greenbush Street
- connecting the former "Box Board Paper Mill" and Midwest Rentals sites to the downtown area

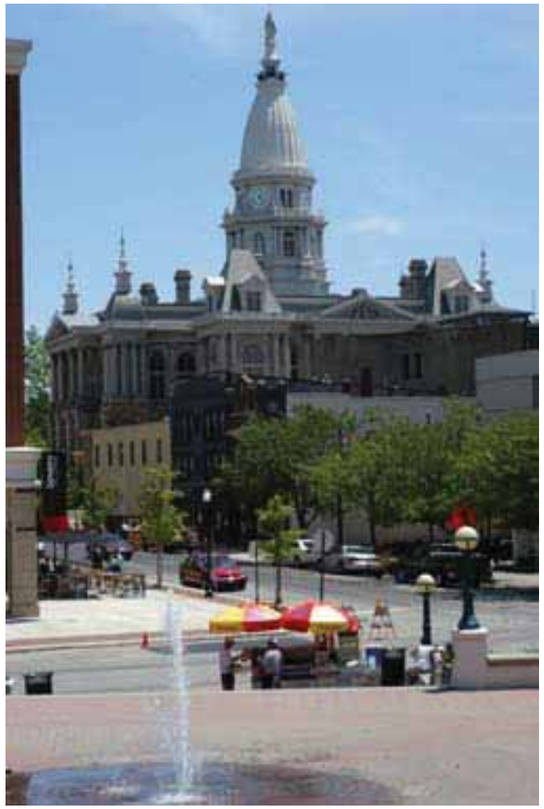
The proposed open space framework provides a physical structure for organizing development and the amenities needed to support high quality, enduring investment. Areas for investment—in either new development or enhancement of existing development—are largely concentrated in the core of both cities and east of Ninth Street in the Northern Reach of the study area.

The Learning Community

The Learning Community focuses on increasing educational resources by integrating environmental, cultural, and economic enhancements and showcasing models of regenerative design and development. This alternative is organized by broad enhancement areas described by general themes. The enhancement areas are:

- The Civic Showcase: the central portion of both cities, connected by pedestrian/bike bridges, trails, and a dense offering of cultural and civic assets
- Water as a Resource: featuring reuse and infiltration of treated water from both sanitary water plants through wetlands and other features
- Living Laboratory on the Wabash (LLOW) Agricultural and Green Technology Demonstration Area: providing an environmental research and education interface for the community and region; providing a research base for the interdisciplinary LLOW consortium; showcasing best practices in low-lying agriculture, buffer management, wetland creation, stormwater management; possible location of a large public gathering space
- Canal Interpretation and Neighborhood Heritage: interpretation of some of the area's greatest assets—its history and unique neighborhoods. The historic canal is generally aligned with current public rights-of-way and has great potential for interpretation and providing distinctive character to the area
- The Green City and Demonstration Projects: focuses on the long-term opportunity to promote smart growth and development in the urbanized area by creating appealing and sustainable neighborhoods
- Ravine Ecology and Landscape Games: focuses on the range of environmental restoration opportunities present in the Happy Hollow area and potential recreational enhancements that capitalize upon the site's terrain and trees

The Learning Community Scenario focused on "learning landscapes" in the northern and southern reaches, connected by the trail system.



The ornate Tippecanoe County Courthouse in Lafayette, listed in the National Register of Historic Places, is one of the area's architectural icons. Image | WRT

Downtown Lafayette is extraordinarily walkable and attractive – as are portions of West Lafayette. Creating enticing and effective pedestrian connections between the cities is a key challenge. Image | Alesa Rubendall

THE PREFERRED PLAN: A 20 YEAR VISION FOR THE WABASH

This vision is a conceptual plan to enhance the corridor over a period of 20 years as resources and opportunities arise. The preferred plan represents a combination of the two alternative development scenarios and has been named the Two Cities, One River concept. The proposed open space framework provides a physical structure for organizing development and the amenities needed to leverage high quality, enduring investment and increases educational resources by integrating environmental, cultural, and economic enhancements and showcasing models of regenerative design and development. Areas for investment—in either new development or enhancement of existing development—are largely concentrated in the core of both cities and east of Ninth Street in the Northern Reach of the study area.

The Myers Bridge is a former vehicular bridge that has been retrofitted to provide a wide pedestrian, city-to-city connection. The Myers Bridge is occasionally the site of important civic events, such as the Taste of Tippecanoe. Image | Mami Hara

The preferred plan is organized and presented in the following section in three reaches – Central, Northern, and Southern:

Central Reach

- **Connections** focus on new and enhanced pedestrian/bike bridges at the Rail, SR 26, and Myers Bridges and at Brown Street, as well as an expanded network of trails, which link a dense offering of civic, cultural and recreational features across the river.

- **Open Space** expansion of Tapawingo Park to the north connects to the recommended Brown Street Pedestrian Bridge and trails in the Northern Reach.

- **Development** leverages recommended connections and open space development, focusing on the redevelopment of the area surrounding Wabash landing in West Lafayette and in Downtown Lafayette around Rhiele Plaza and around the proposed CityBus Transit Plaza.

Northern Reach

- **Connections** focus on new and enhanced pedestrian/bike bridges at Harrison Bridge, Mascouten Park, and US 52 Bridge and new trails, which link enhanced recreational features and northern neighborhoods across the river.

- **Open Space** development includes enhancement to Happy Hollow Park and the expansion of Mascouten Park to include water recreation in boast basins and a series of parks that integrates the Lafayette Municipal Golf Course.

- **Development** leverages recommended connections and open space development along the North 9th Street Corridor and focuses on a concept of Green City Development that showcases the best practices in sustainable building and site development.

Southern Reach

- **Connections** focus on new and enhanced pedestrian/bike bridges, at the US 231, SR 26, Sycamore Avenue and Rail Bridges, that better connect the two sides of the river and link to the Central Reach and trails that connect along the river to the south.

- **Open Space** development includes an expansion of Shamrock Park, with a trail extension, stormwater management, and interpretation of the historic canal trace and the establishment of the Living Laboratory on the Wabash (LLOW) Water Resource Education and Research Center.

- **Development** of waterfront just south of the Downtown Lafayette leverages recommended connections and park expansion and provides a unique residential location with easy access to Downtown amenities and direct access to the river.

The Lafayette–West Lafayette area has an opportunity to be one of the country's most desirable centers of education and commerce, offering a high quality of life. Other such desirable areas—like Boulder, Colorado; Athens, Georgia; Austin, Texas; and Eugene, Oregon—are located within distinctive settings that provide an exceptional range of recreational and cultural experiences. The next sections recommend investments over 25 to 30 years that seek to define a more distinctive, notable, and sustainable setting for the communities and institutions of the Lafayette-West Lafayette area.

The Lafayette-West Lafayette area has the makings of a safe, culturally and recreationally rich environment. Within a relatively compact area, there is potential for a remarkable variety of experiences. Trails and walkable streets can connect historic neighborhoods, educational institutions, shopping, golf, rowing, canal paths, sculpture gardens, birding, and exemplary agricultural and wetland areas. Strategic investments can enhance the character of the Wabash to make it memorable and distinctive. A series of pedestrian bridges can create unique and enjoyable places that help define the profile of the corridor and provide critical connections between the cities. Public art in parks and open spaces can engage visitors with thematic relationships among pieces.

For the region to build on its potential and weave together the threads of history, ecology, and commerce along the Wabash corridor, it must rely on strong partnerships to support building and strategic phasing of investments. These partnerships should also foster stewardship and drive change by promoting use. This can be done by offering a range of seasonal activities and educational opportunities that provide immediate community benefits as well as critical investment in the future. At the same time, the region should continue to build on watershed partnerships and management of water resources but not invest heavily in areas of high flooding risk. For each of the three reaches, the following sections will provide an overview of the reach and enhancement recommendations. These enhancement recommendations fall into the general categories of public sector investment, for transportation, circulation access and trails (Connections) and parks and recreation (Open Space)and private sector investment (Development). As stated previously strong partnerships will be critical to the plan's success with public sector investment leveraging private sector investments that provide higher value to development.

Tapawingo Park provides access to the Wabash River, and views from the park show how close downtown Lafayette is to the river despite poor access. Image | WRT

Tanghe River Park's Red Ribbon is a unifying sculptural element that integrates lighting, seating, interpretation, and orientation. in Against a background of natural terrain and vegetation. Image | Cao Yang via ASLA

The three reaches of the river, as defined previously, are integral to realizing the community's vision. Each offers a different set of potential activities and development. The success of each is ultimately linked to the success of the others. During community meetings, a wide range of landscape programs were discussed, and participants identified activities and features they would most like to see along the Wabash.

The program elements ranked highest by the public were:

Active Recreation

1. Canoeing/Kayaking/Sculling
2. Bicycling/Mountain Biking
3. Splash Park
4. Fishing
5. Skateboarding
6. Running/Jogging

Passive Recreation

1. Overlooks/Viewing
2. Picnicking (Tables & Grills)
3. Community Gardening

Commercial Activities

1. Restaurants/Cafes
2. Canoe/Kayak Operators
3. Art Shows
4. Farmers' Market
5. Bike Shop/Rentals
6. Zip Line

Education/Historical Interpretation

1. Tours/Trails
2. Canal Interpretation
3. Arboretum/Botanical Garden
4. Agronomic/Environmental Studies
5. Water Management Interpretation
6. Bridge Interpretation/Lighting

Cultural

1. Amphitheater (dance/music/drama)
2. Sculpture/Earth Sculpture
3. Four Season Festivals
4. Light Show/Fireworks

A cornfield in the Wabash River flood plain immediately north of the urban project area.

THE CENTRAL REACH

OVERVIEW

The Central Reach encompasses an area roughly between the Harrison Bridge and the Rail Bridge. It includes the downtowns of Lafayette and West Lafayette, which together form a foundation for transforming the study area. This section of the corridor also includes key assets such as Tippecanoe County Courthouse, Myers Pedestrian Bridge, Riehle Plaza, Big Four Depot- home to Amtrak, Greyhound, and CityBus, Tapawingo Park,the Purdue Crew building and Wabash Landing.

The major challenges in this area are auto-oriented streets and development, particularly the area surrounding Wabash Landing and the SR 26 and Harrison Bridges. Commercial and, or industrial uses along the river north of Tapawingo Park and in Lafayette's Wabash Avenue neighborhood are also challenges to general connectivity, an issue that became the focus of the planning process, with many in the community prioritizing reconnecting at Brown Street, where there once stood a bridge over the river.

Existing Site. Image | Tippecanoe County

Central Reach Recommendations

The recommended public and private sector investments for the Central Reach are outlined below, illustrated in the aerial view and described in more detail on the following pages. As stated previously the public sector investments of Connections and Open Space are planned to leverage the private investments of Development.

- **Connections** focus on new and enhanced pedestrian/bike bridges at the Rail, SR 26, and Myers Bridges and at Brown Street, as well as an expanded network of trails, which link a dense offering of civic, cultural and recreational features across the river.

  - New Brown Street Pedestrian Bridge
  - Myers Bridge & Riverside Promenade
  - SR 26 Bridges Pedestrian Enhancements
  - Rail Bridge Pedestrian Enhancements
  - Scenic Byway Enhancement – Develop River Road in support of its State Scenic Byway designation – Trails, Pull Offs, Interpretive Features etc.

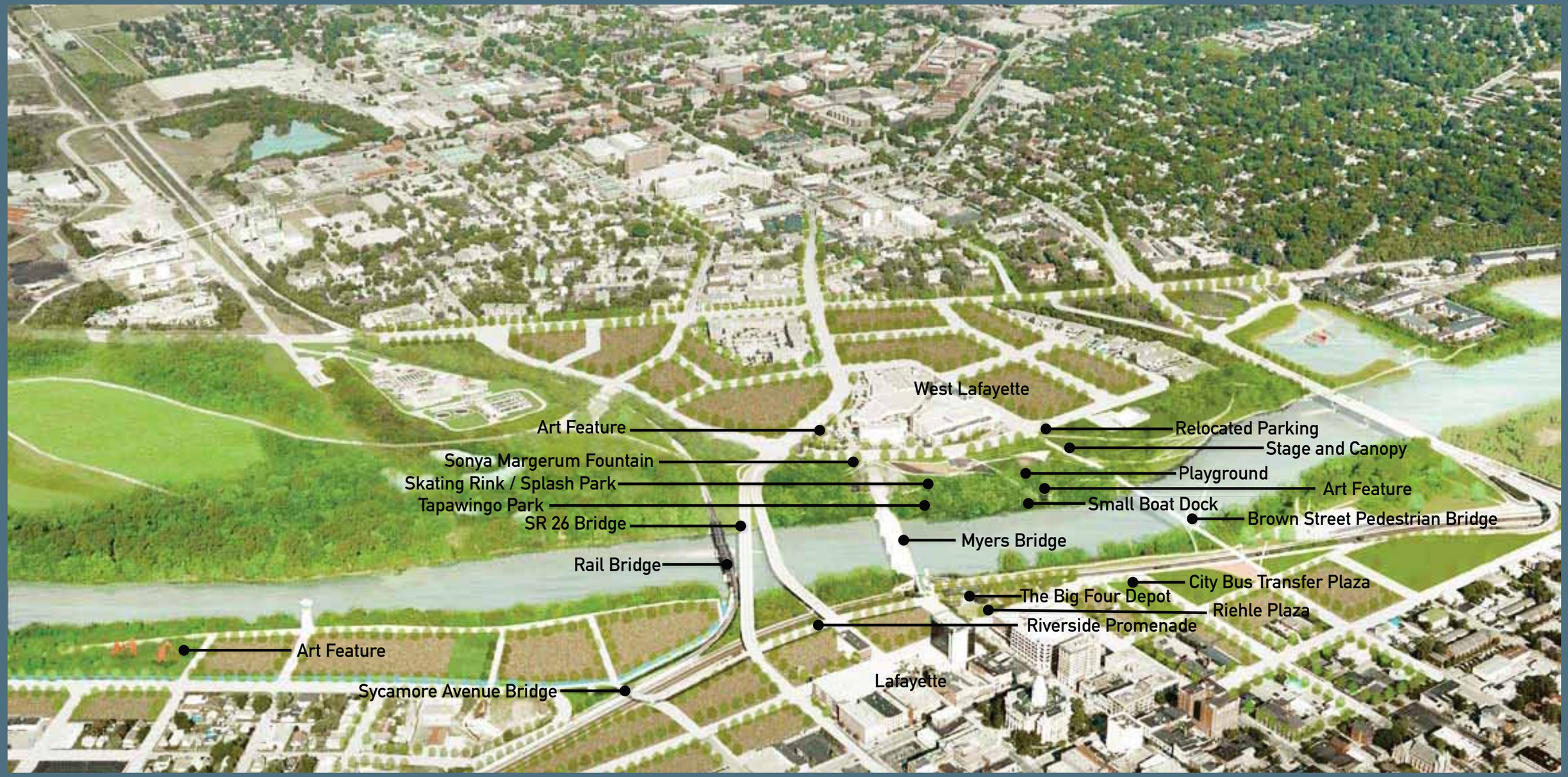
- **Open Space** expansion of Tapawingo Park to the north connects to the recommended Brown Street Pedestrian Bridge and trails in the Northern Reach.

  - Tapawingo Park Enhancement & Expansion

- **Development** leverages recommended connections and open space development, focusing on the redevelopment the area surrounding Wabash landing in West Lafayette and in Downtown Lafayette around Rhiele Plaza and around the proposed CityBus Transit Plaza.

  - West Lafayette Development
  - Lafayette Downtown Redevelopment
  - Rhiele Plaza Redevelopment

THE CENTRAL REACH



Conceptual Design Image | WRT

GOALS

CONNECT

ENGAGE

ELEVATE

Brown Street Pedestrian Bridge

CONNECTIONS

New pedestrian bridges across the Wabash are a key opportunity to create prominent civic symbols, demonstrating the engineering prowess and cultural interests of the community. The image shows a Cable Stay design bridge as an example of a design for the proposed Brown St. Bike/Pedestrian bridge. This design would eliminate the need for new bridge piers in the river." Image | WRT

Providing more opportunities for bikes and pedestrians along and crossing the Wabash River will create increased accessibility in the downtowns of each city and add value to the development. Many community members that used the now removed Brown Street Bridge recall positive associations. A new pedestrian bridge along the historic alignment offers the potential for a new civic landmark—a signature feature that is iconic and exciting. With this new bridge, there can be more direct access between the neighborhoods near downtown Lafayette, Tapawingo Park, adjacent retail, and West Lafayette. The bridge would also enhance a "loop" network of trails. In public meetings, the Brown Street Pedestrian Bridge received more support than any other proposal.

Seri Wawasan Bridge, Putrajaya, Malaysia. Image | Flickr (spOt_ON / Heng Hau Yeo)

The site for the proposed Brown St. Bike/Pedestrian Bridge as it appears today. Image | Stanton Lambert

GOALS

CONNECT

ENGAGE

ELEVATE

Myers Bridge & Riverside Promenade

CONNECTIONS

An elevated promenade at the eastern end of Myers Bridge would bring Lafayette closer to and provide better views of the Wabash, and also connect Wabash Ave neighborhood with downtown Lafayette and West Lafayette. Image | WRT

The photograph depicts the view south from Myers Bridge in Lafayette along the route for the proposed Riverside Promenade. Image | Stanton Lambert

Formerly the Main Street vehicular bridge, Myers Bridge is a pedestrian bridge that connects downtown Lafayette to Tapawingo Park and Wabash Landing in West Lafayette. The bridge was converted to pedestrian use because of structural constraints to carrying vehicular traffic. At the Lafayette end of the Myers bridge, users must traverse stairs or use an elevator to broach the change in grade between the Myers bridge and the Riehle Plaza surrounding the historic rail station in order to cross over the rail corridor which runs along the river. A partially enclosed, circular ramp and stair area terminates the West Lafayette end of the bridge, providing access in the westerly direction and north down to the ice rink in Tapawingo Park.

The bridge should be enhanced to encourage greater use and more visual appeal. Potential enhancements, pending further structural assessment, include lightweight shade or kiosk structures, distinctive lighting, easier access at both ends, and better integration with Tapawingo Park—expanding the civic stair and bringing pedestrians easily into the park.

The eastern end of Myers Bridge is proposed to connect to a raised Riverside Promenade for bike/pedestrian access extending the bridge landing south along and above the rail corridor to visually connect the visitor with the river and to connect to the SR 26 Bridges and the proposed bike/pedestrian railroad crossing bridge which would connect Downtown Lafayette to the Wabash Avenue neighborhood at Sycamore Avenue. This promenade would cross highway SR 26 at the grade of the bridges. The Wabash River Heritage Trail will be extended south from Myers Bridge, running under SR 26 bridges into the Wabash Ave. Neighborhood. The Myers Bridge Pedestrian improvements, Riverside Promenade, and Wabash River Heritage Trail Extension, will create a looped connection from the bridge into Wabash Avenue Neighborhood. These improvements will connect the neighborhood to the Lafayette downtown, the Wabash River Heritage Trail, the proposed City Bus TOD, and West Lafayette and Tapawingo Park. The proposed dual use Rail/Bike/Ped. Bridge and the Brown St. Bike/Pedestrian Bridge also presented in the Central Reach section, will further enhance this loop. The planning team studied vehicular access to the Wabash Avenue Neighborhood and could not come up with a realistic option as necessary modifications to existing infrastructure would be prohibitively expensive. Future traffic engineering studies can revisit the issue if existing conditions change.

GOALS

CONNECT

CULTIVATE

ENGAGE

ELEVATE

Rail Bridge

CONNECTIONS

The unused portion of the rail bridge could be used for a pedestrian and bicycle connection, with proper safety structures. Image | WRT

Currently, only half the rail bridge just south of the SR 26 Bridge is tracked for train use. By installing guard rails of sufficient height for safety, the other half could be decked over and used as a pedestrian and bicycle trail. The bridge has the structural capacity to support this additional use, but operations must be coordinated with the railroad.

The rail bridge could also provide an important conveyance function for treated sanitary water from the West Lafayette side to feed the canal interpretation area and its proposed water polishing chambers. This proposal is discussed in a later section.

Existing Rail Bridge site conditions at the location of the proposed Dual Use Rail Bridge immediately south of the US 26 bridges. Image | Stanton Lambert

Tapawingo Park

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

OPEN SPACE

Enhancements to Tapawingo Park could make this central open space a regional destination. Image | WRT

Tapawingo Park's central location and existing ice rink, park building, and play area give it the potential to be a multi-season destination park. Enhancements that could elevate Tapawingo Park into a regional asset include an amphitheater, park expansion to the north and south, connecting trails, public art, small boat/dock access, and a signature cultural building north of the existing park. Ranked very highly by the public, the features that many people would like to see are listed to the right, with examples from around the world shown on the following two pages.

Tapawingo Park as seen from Wabash Landing. Image | WRT

Active Recreation
1. Splash Park
2. Canoeing/Kayaking/Sculling
3. Bicycling/Mountain Biking

Passive Recreation
1. Picnicking (Tables & Grills)
2. Overlooks/Viewing

Commercial Activities
1. Restaurants/Cafes
2. Art Shows
3. Canoe/Kayak Operators

Education/Historical Interpretation
1. Bridge Interpretation/Lighting
2. Tours/Trails

Cultural
1. Sculpture/Earth Sculpture
2. Light Shows/Fireworks
3. Amphitheater (dance/music/drama)

Examples of Recommended Enhancements for Tapawingo Park

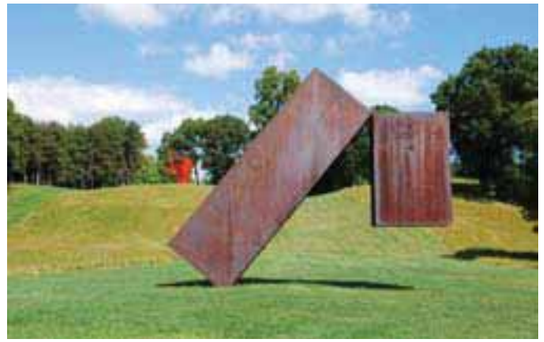
A spray park and water feature engages children in Nashville, Tennessee's Nashville Public Square. Image | WRT

The Swarthmore College amphitheater in Swarthmore, Pennsylvania incorporated existing mature trees into its design. Image | Flickr (Colin Purrington / Colin Purrington)

The Red Ribbon that snakes through Tanghe River Park in Qinhuangdao City, Hebei Province, China is a signature design element. Image | Flickr (eabartley / Elizabeth Bartley)

The Burnham Pavilion in Chicago, Illinois is one of Millennium Park's iconic structures, serving as a usable space and a piece of art. Image | Zaha Hadid Architects

Brown Park in Saint Matthews, KY, designed by WRT. Image |



Menashe Kadishman's "Suspended" is one of many sculptures on display at the Storm King Art Center in Mountainville, New York. Image | Flickr (blkdrama / Bonnie Kaplan)

Increased Use of the Riverside Skating Center as a concert space is recommended.
Image | Stanton Lambert

GOALS

ENGAGE

ELEVATE

West Lafayette Development

DEVELOPMENT

New mixed-use development around Wabash Landing could enhance connectivity and encourage use. Image | Tippecanoe County

Surrounding Wabash Landing, there is potential for dense mixed-use development that capitalizes on adjacent park areas. Currently, this area has significant gaps in the urban fabric—lack of a traditional grid, large-scale blocks, and suburban-style development—which limits circulation and discourages use. New residential, retail, and hotel development could complement Wabash Landing; support greater connectivity between the Purdue area, downtown West Lafayette, and Lafayette; and provide a more extensive, better connected, and logical network of "complete" streets—streets that are designed to accommodate all modes of travel. All new development and redevelopment should include integrated stormwater management measures such as permeable paving, bioretention rain gardens, green roofs, and rainwater collection and reuse systems.

Pedestrian-oriented development in Chauncey Village serves as an examples to potential development around Wabash Landing. Image | Alesa Rubendall, Mami Hara

Proposed development around Wabash Landing. Image | WRT

GOALS

ENGAGE

ELEVATE

Lafayette Development

DEVELOPMENT

Main Street (left) and North 3rd Street (bottom right) in Lafayette are local examples of the type of pedestrian-oriented development that could enhance areas like Riehle Plaza. Image | Alesa Rubendall

In Portland, Oregon, the non-vehicular part of the street is wide enough to incorporate street trees, an ample sidewalk, and outdoor café seating. Image | Nando Micale

Lafayette's downtown has a rich historic building stock and, generally, a coherent urban fabric. Places where the urban fabric breaks down include the areas immediately north and south of Riehle Plaza and the area north of downtown along Third and Fourth Streets. Characterized by parking lots and auto-oriented uses, the redevelopment of these areas, presents significant potential to extend and enhance the existing urban fabric and have a great impact.

Given the critical gateway functions of this transit-rich area with the Amtrak and CityBus stations, the design of new investments must be carefully considered. New development should reinforce the urban center of Riehle Plaza and complement the scale and character of the existing city. It should be oriented with views to the river and integrate bridge landings into the flow of trails, walkways, and park areas. It should provide for trees and other landscape enhancements. With an upper level promenade, development in this area can also provide connectivity to the former boxboard paper mill site in the Wabash Ave. neighborhood. The proposed mixed-use Centennial Village Transit Plaza will consist of a new transit hub, plaza, and mixed-use facilities for residential, secondary education class space, and business/retail uses.

All new development and redevelopment should include integrated stormwater management measures such as permeable paving, bioretention rain gardens, green roofs, and rainwater collection and reuse systems.

Visitors enjoying the views along North 3rd Street in downtown Lafayette. Image | Alesa Rubendall

DEVELOPMENT

GOALS

CULTIVATE

ENGAGE

ELEVATE

Riehle Plaza

Conceptual Design for Riehle Plaza. Image | WRT

Riehle Plaza Existing Conditions. Image | Stanton Lambert

Together with Courthouse Square, Riehle Plaza could be the civic heart of Lafayette. Currently, it is the city's transportation hub and the site of well attended concerts and events. However, its daily usage could be expanded. The Riehle Plaza experience could be significantly enhanced through denser development that is well oriented to the plaza, along its perimeter and that helps to define it spatially. Smart development along the edges of Riehle Plaza, in turn, would bring more residents to the urban core. Riehle Plaza itself provides an opportunity to manage stormwater for the plaza and potentially surrounding streets.

THE NORTHERN REACH

OVERVIEW

The Northern Reach encompasses the area between Harrison Bridge and the US 52 Bridge. It includes the Lafayette Golf Course and the North 9th Street corridor on the east side of the river and the borrow pits, River Road corridor, and Happy Hollow and Mascouten Parks in West Lafayette. The key assets include large tracts of public land along the Lafayette river-front, which includes the Golf Course and boat access.

Existing Site. Image | Tippecanoe County

Northern Reach Recommendations

The recommended public and private sector investments for the Northern Reach are outlined below, illustrated in the aerial view and described in more detail on the following pages. As stated previously the public sector investments of Connections and Open Space are planned to leverage the private investments of Development.

- **Connections** focus on new and enhanced pedestrian/ bike bridges at Harrison Bridge, Mascouten Park, and US 52 Bridge and new trails, which link enhanced recreational features and northern neighborhoods across the river.

  - US 52 Bridge Pedestrian Enhancements
  - New Mascouten Pedestrian Bridge
  - Harrison Bridge Pedestrian Enhancements
  - New Pedestrian Bridge Over Railroad
  - Scenic Byway Enhancement – Develop River Road in support of its State Scenic Byway designation – Trails, Pull Offs, Interpretive Features etc.

- **Open Space** development includes enhancement to Happy Hollow Park and the expansion of Mascouten Park to include water recreation in boat basins and a series of parks that integrates the Lafayette Municipal Golf Course.

  - New Boat Basins
  - Happy Hollow & Mascouten Parks Enhancements
  - Golf Course & Recreation Enhancements
  - New Kids Zone & Overlook Park
  - New Signature Park

- **Development** leverages recommended connections and open space development along the North 9th Street Corridor and focuses on a concept of Green City Development that showcases the best practices in sustainable building and site development.

  - North 9th Street / Green City Development

THE NORTHERN REACH

Conceptual Design Image | WRT

US 52 Bridge

GOALS

CONNECT

ENGAGE

ELEVATE

CONNECTIONS

Westbound US 52 in Lafayette approaching the Wabash River. Image | Alesa Rubendall

At the northernmost end of the study area, the US 52 Bridge offers an opportunity for a new pedestrian/bicycle connection across the Wabash. Given the structure of the US 52 Bridge, it appears feasible to add a pedestrian/bicycle path structure separated from the vehicular traffic by either suspending it from the underside or cantilevering it from the side of the existing bridge structure. The eastbound lane of the US 52 Bridge is scheduled for replacement, providing another opportunity to include pedestrian/bicycle access to the bridge.

A pedestrian walkway is located beneath the roadway on the Roberta Crenshaw Bridge, linking to trail connections in Zilker Metropolitan Park in Austin, Texas.
Image | Flickr (libraryann)

GOALS

CONNECT

ENGAGE

ELEVATE

Mascouten Pedestrian Bridge

CONNECTIONS

The Wabash River as seen from the Mascouten boat launch area. Image | Mami Hara

A proposed pedestrian bridge at Mascouten Park would provide residents on each side of the river easier access to resources on the other side—supporting the goal of connecting the cities to each other. This new pedestrian bridge along with new pedestrian bridges at Brown Street and the proposed Rail Bridge, provides for looping opportunities along the corridor trail system.

For residents of West Lafayette, the bridge would mean more convenient access to the Lafayette Golf Course. For residents of Lafayette, the bridge would mean more convenient access to Happy Hollow and Mascouten Parks. The design of the bridge could make it a visual signature element, strengthening the region's identity, and provide an additional link to knit the two sides of the river together. The connectivity of a new bridge would make it attractive for new investment, as area assets would be more accessible.

Living Bridge - University of Limerick, Ireland. Image | Flickr (Ragnorak)

Harrison Bridge

GOALS

CONNECT

ENGAGE

ELEVATE

CONNECTIONS

Harrison Bridge, in the center of the photo, connects Fowler Avenue and Wiggins Street in West Lafayette with Salem and Union Streets in Lafayette. Image | Tippecanoe County

After Harrison Bridge is delisted from the Indiana State Highway System as a part of the State Highway US 231 Re-Location Project starting in 2013, the bridge deck and ramp system can be modified to enhance pedestrian and bicycle connectivity across the river. Because it will no longer be subject to State highway standards, the existing bridge deck can be reconfigured with narrower travel lanes and the addition of bicycle lanes. In West Lafayette, the relocation of US 231 in 2013 will significantly alter traffic demand related to the ramp system, at which time reconfiguring the bridge landings can support boat house and trail development, as will be discussed in more detail in a subsequent section. Re-location of US 231 and the resulting potential impacts on the access ramps leading to and from Harrison Bridge may also open up potential access opportunities to and through what is now the Levee Plaza area.

GOALS

ACCESS

ENGAGE

ELEVATE

Pedestrian Bridge Over Railroad

CONNECTIONS

A gently-sloping pedestrian bridge on the University of Minnesota campus provides a continuous link from Northrop Mall over Washington Avenue to the Mississippi River while preserving river views. Image | Ryan companies US, Inc.

The northern Lafayette neighborhoods have no direct access to the river across the railroad tracks between the 9th Street underpass and US 52—a distance of over 1 mile. This situation hinders connectivity and waterfront access, and can be remedied by constructing a pedestrian bridge at Underwood Street (or at a location to be determined in the future) along with access to park amenities, the Lafayette urban core, and the new Centennial Village transit Hub.

GOALS

ACCESS

ENGAGE

ELEVATE

Boat Basins

Existing Conditions (left) and proposed boat basins (right). Image | Tippecanoe County, WRT

The borrow pits along the river in West Lafayette were created as part of adjacent land development and have the potential to be converted into boating basins. When the Harrison Bridge is delisted as a part of the State highway system and US 231 is relocated to the west, the ramps can be modified to provide boating access and allow boathouse development lining the basins. The boat basins could use bladder dams to retain water during low water periods.

This location provides a unique opportunity to capitalize on the optimal rowing stretch on the Wabash with the development of a boat house. Improving this area will enable additional trail improvements and connections to be made. Together, Happy Hollow and Mascouten Parks and the boating basins will act as an integrated recreation and ecological area, with significant connections to surrounding trails.

A boat ramp provides river access in Tigre, Argentina. Image | Adam Krom

OPEN SPACE

GOALS

- ACCESS
- CULTIVATE
- ENGAGE
- ELEVATE

An example of healthy ravine conditions (top) as compared to existing erosion in Happy Hollow Park (right). Image | Panoramio.com/Ben_DeRoy, Alesa Rubendall

Happy Hollow & Mascouten Parks

The experience enjoyed by the many recreational users of Happy Hollow Park may be significantly enhanced through environmental restoration of the sensitive and steeply sloping landscape. Managing stormwater on-site in the areas above Happy Hollow Park and reducing the flow to the ravine; thinning the tree canopy to allow sunlight to reach the ground layer so that an herbaceous understory may thrive; and planting deep-rooted herbaceous species at the top of the slope at Happy Hollow can help stabilize currently eroding slopes. Working with owners of the properties above, Happy Hollow Park will require outreach and education efforts.

Enhancements to Mascouten Park, achieved by expanding access along the river and locating parking down river, can create a gateway to the proposed adjacent boat basins. Together, Happy Hollow Park and Mascouten Parks and the boating basins can act as an integrated recreation and ecological area, with significant connections to surrounding trails.

Happy Hollow Park existing conditions. Image | Alesa Rubendall

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

Golf Course & Recreation

Aerial of existing golf course conditions (left) and proposed changes. Image | Tippecanoe County, WRT

The Lafayette Golf Course is located on low-lying land adjacent to the Wabash River. Because of its elevation, the course is frequently inundated during and after rain events, and water must be pumped back into the river to keep it operable. Reconfiguring the golf course and employing best environmental practices can allow it to co-exist with a river subject to frequent flooding. Such enhancements include: significantly raising the elevations of the tee boxes and greens (as has already been done) and lowering and naturalizing areas between the fairways to reduce the frequency of flooding of those features most subject to damage; integrating of wetlands with naturalized drainageways to help the water drain off the course more quickly after the flood events and contribute to improved water quality; and extending the course into the well field protection areas. Reducing the impact of the golf course on water resources and improving its habitat value by following Audubon guidelines are other potential enhancements that can help cultivate healthy ecosystems and improve sustainability.

Enhancements can make these significant open spaces amenities for investment, with enormous long-term potential for residential development. Streetscape enhancements to North 9th Street and creation of a network of "complete streets" will be an important part of supporting new, valuable, and sustainable investments.

There is also an opportunity to create an interpretive stormwater feature along the historic Wabash & Erie Canal route through the northern part of the study area.

A rendering of multiuse trails through Floyds Fork in Louisville, Kentucky. Image | WRT

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

Kids Zone & Overlook Park

OPEN SPACE

A sundial (left) punctuates the top of the "Great Mound" (right) at Gas Works Park in Seattle, Washington. Image | Flickr (jtcontinental)

By relocating the fields in Lyboult Field to another location within the city, the waterfront site can be used for an overlook park with commercial recreation and site remediation. The community was captivated by the potential of this site to provide views of the river and to expand the range of recreation opportunities available in the Lafayette/West Lafayette area.

Types of recreation sought here include:

Active Recreation

1. Canoeing/Kayaking/Sculling
2. Bicycling/Mountain Biking
3. Fishing

Passive Recreation

1. Overlooks/Viewing
2. Community Gardening
3. Picnicking (Tables & Grills)

Commercial Activities

1. Zip Line
   Famer's Market
   Restaurants/Cafes
2. Canoe/Kayak Operators

Education/Historical Interpretation

1. Tours/Trails
2. Canal Interpretation
3. Arboretum/Botanical Garden

Cultural

1. Amphitheater (dance/music/drama)
2. Sculpture/Earth Sculpture

This site could also include natural area restoration, trails, historic interpretation of the canal, and ecological interpretation of the Wabash and aboriginal people.

Lyboult Fields and surrounding area existing conditions – Potential site for proposed Overlook Park. Image | Tippecanoe County

OPEN SPACE

GOALS

- ACCESS
- CULTIVATE
- ENGAGE
- ELEVATE

Signature Park

Existing Conditions (left) and proposed location for Signature Park (right). Image | Tippecanoe County, WRT

Over the long term, a new waterfront park for downtown Lafayette would provide recreation adjacent to downtown, used by office workers in the daytime and neighborhood residents during the evening and on weekends. It would also provide an important link between downtown and north side of Lafayette and provide an important connection to riverside trails. Enhancing access to the area should be considered in the design of all future trails, enhancements to the Harrison Bridge, and adjacent development.

Feasible design elements may include features such as large boulders for seating, pathways mown into meadow (maintained through annual burns) and art installations that either resist or interact with the cycles of site flooding.

Grove Prairie at the Sugar Grove Nature Center in Funks Grove, Illinois is the largest intact prairie in Illinois. Image | Flickr (tlindenbaum)

DEVELOPMENT

GOALS

CULTIVATE

ENGAGE

ELEVATE

N 9th Street / Green City Development

Existing Conditions (left) and proposed location for residential mixed-use development (right). Image | Tippecanoe County, WRT

Private Sector Component

With future public investments in the open space around North 9th Street, a high level of amenity will be available to anchor and spur investment. This area has great opportunity for smart growth that can foster a new neighborhood of sustainable buildings that have high ecological performance. In addition to new residential mixed use, there is also potential for new office mixed use. As indicated in the images, integrated rainwater management should be included as a significant design theme for the Green City Development.

The Headwaters at Tryon Creek mixed-use development in Portland, Oregon incorporates best stormwater management practices. Image | Christopher Atkinson

THE SOUTHERN REACH

OVERVIEW

The Southern Reach is an area with great ecological and neighborhood enhancement potential that stretches from the rail bridge south of the SR 26 Bridge to the US 231 Bridge. It includes low-lying agriculture land and the West Lafayette and Lafayette waste water treatment facilities. To the east, the Southern Reach includes the Wabash Avenue neighborhood of Lafayette.

Existing Site. Image | Tippecanoe County

Southern Reach Recommendations

The recommended public and private sector investments for the Southern Reach are outlined below, illustrated in the aerial view and described in more detail on the following pages. As stated previously the public sector investments of Connections and Open Space are planned to leverage the private investments of Development.

- **Connections** focus on new and enhanced pedestrian/bike bridges, at the US 231, SR 26, Sycamore Avenue and Rail Bridges, that better connect the two sides of the river and link to the Central Reach and trails that connect along the river to the south.

  - Rail Bridge Pedestrian Enhancements
  - US 231 Bridge Pedestrian Enhancements
  - Scenic Byway Enhancement – Develop River Road in support of its State Scenic Byway designation – Trails, Pull Offs, Interpretive Features etc.

- **Open Space** development includes an expansion of Shamrock Park, with a trail extension, stormwater management, and interpretation of the historic canal trace and the establishment of the Living Laboratory on the Wabash (LLOW) Water Resource Research and Education Center.

  - Canal Trace Park
  - Water as Resource Park Element
  - Environmental Park
  - Great Lawn
  - Living Laboratory on the Wabash

- **Development** of waterfront just south of the Downtown Lafayette leverages recommended connections and park expansion and provides a unique residential location with easy access to Downtown amenities and direct access to the river.

  - Residential Mixed Use

THE SOUTHERN REACH

Conceptual Design Image | WRT

Rail Bridge

GOALS

- CONNECT
- CULTIVATE
- ENGAGE
- ELEVATE

The unused portion of the rail bridge could be used for a pedestrian and bicycle connection, with proper safety structures. Image | WRT

This also appears in the Central section and is described there.

The rail bridge just south of SR 26 as seen from West Lafayette. Image | Stanton Lambert

GOALS

CONNECT

ENGAGE

ELEVATE

US 231 Bridge [Branigin Bridge]

CONNECTIONS

The US 231 Bridge provides a vehicular connection at the southern end of the study area. There may be insufficient clearance above the river to suspend a pedestrian bridge under the US 231 Bridge, as recommended for the US 52 Bridge. However, this bridge has steel plate girders, so it may be possible to widen it to provide pedestrian accommodations.

Washington State DOT adds a cantilevered bicycle and pedestrian structure to the existing Sellar Bridge connecting Wenatchee and East Wenatchee. Image | Flickr.com (wsdot)

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

Canal Trace Park

OPEN SPACE

Looking south along Sycamore Street in Wabash Avenue neighborhood. The proposed Wabash & Erie Canal Interpretive feature runs south down the right side of the picture on the former paper mill site Image | Stanton Lambert

Proposed Canal Trace Park area Image | WRT

The former boxboard paper mill site in the area adjacent to the Wabash Avenue neighborhood has enormous potential due to its proximity to the river and because it is mostly outside the 100-year floodplain. Currently, the area is physically separated from the rest of Lafayette by both road and rail infrastructure. Proposed new connections, including the rail bridge and the Riverside Promenade, will stitch the area back into the fabric of the city and make this location more accessible, creating distinctive development and park expansion opportunities. The location of the historic Wabash & Erie Canal along Sycamore Avenue and the investments in around Shamrock Park provide the foundation for the recommended expansion of Shamrock Park along the entire Southern Reach to create a Canal Trace Park and continuous trail access.

The wide right-of-way along Sycamore Street provides an opportunity for the new interpretation of the historic Wabash & Erie Canal and an innovative stormwater management approach. Effluent from the West

The Wabash and Erie Canal is a central feature of Lafayette in this 1868 birds eye view of the city. Image | Library of Congress

Lafayette Water Treatment Facility can be piped over the river along the rail bridge and used to provide flow to a water feature associated with canal interpretation. A system of subsurface flow through a vegetated gravel bed along with flowing surface water in the canal would provide polishing of treated waste through biological activity in the gravel to remove nutrients, promote oxygenation, and further break down waste. However, additional treatment—like virus removal—may be necessary before public access can be permitted. Community preference for activities and feature in this area include:

Active Recreation

1. Bicycling/Mountain Biking
2. Fishing
3. Canoeing/Kayaking/Sculling

Passive Recreation

1. Community Gardening

Commercial Activities

1. Restaurants/Cafes

Education/Historical Interpretation

1. Tours/Trails
2. Canal Interpretation

Cultural

1. Four Seasons Festivals
2. Amphitheater (dance/music/drama)

GOALS

ACCESS

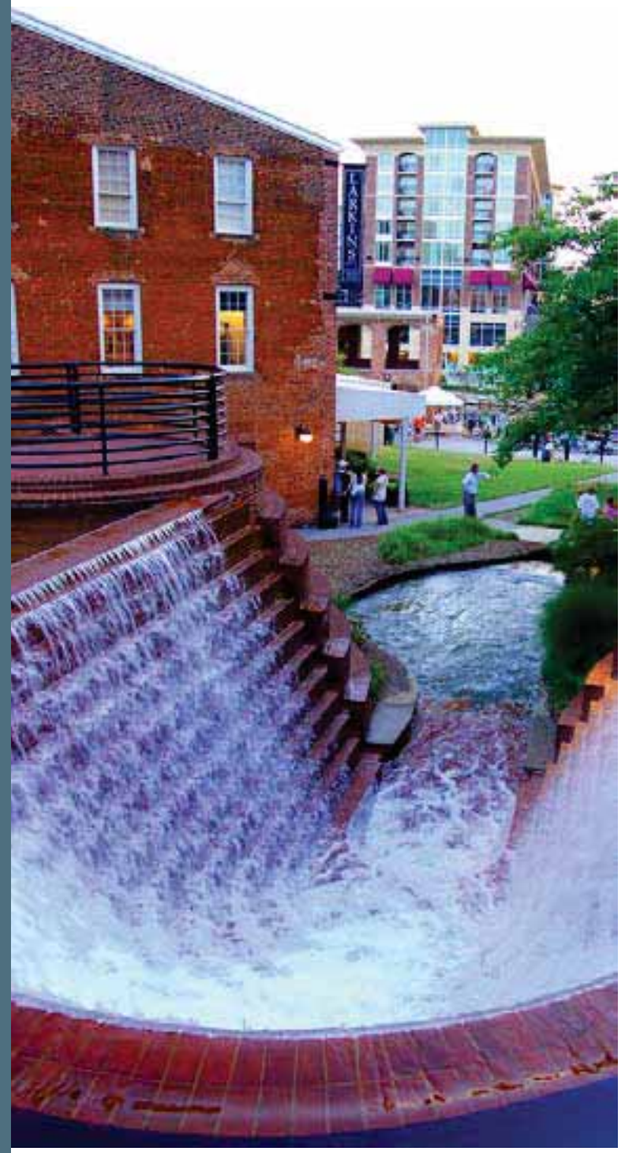
CULTIVATE

ENGAGE

ELEVATE

Water as Resource

OPEN SPACE



A water feature highlights the Reedy River as an amenity at RiverPlace in Greenville, South Carolina. Image | Flickr (crescibene)

The concept of Water as Resource is a comprehensive approach to utilizing water as a design feature of park development and providing ecological function and educational opportunities along the entire length of the historical canal trace. This concept will include a series of park features, such as waterfalls in the north as the water is collected from the West Lafayette Water Treatment Facility, planted swales along the canal trace and wetland parks in the south at the Lafayette Water Treatment Facility.

For ecological and educational purposes, the canal trace through the former Boxboard area is proposed to filter and polish a fraction of the effluent from the West Lafayette treatment plant. Typically, constructed wetland treatment systems are subsurface, where the water flows through a gravel bed that is vegetated with wetland plants. However, the canal trace could use a modified design to make the water visible at the surface. Though the canal would polish less than 10% of the effluent by volume, it would provide significant demonstration value.

The cleansed water will flow down the canal trace to the Lafayette Water Treatment Facility, where it will discharge to the Wabash. In the Water as Resource area, existing natural wetlands will be preserved and enhanced to develop a system of wetlands that can polish and utilize treated effluent flows in an overall effort to restore natural hydrology and biodiversity to the river corridor. Trails and passive recreation areas can be integrated throughout and provide opportunities for environmental education.

OPEN SPACE

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

Living Laboratories On the Wabash [LLOW]

Existing Conditions (left) and proposed location for LLOW Image | Stanton Lambert, WRT

The confluence of broad public support for re-engagement with and restoration of Wabash River landscapes; locally-based, world-class environmental/water resource researchers; and a variety of landscape typologies along the local reaches of the Wabash creates an unusually strong case for engaging the local riparian environment for water resource research and education. The research possible along Lafayette and West Lafayette could be of immense value to communities along the Wabash and possibly provide national models for floodplain management.

WREC formed a strong partnership with Purdue University at the outset of this project through various corridor planning projects conducted in partnership with the Department of Horticulture and Landscape Architecture and the Forestry and Natural Resources Department. These efforts led to the creation of an interdisciplinary Research Center – The Living Laboratory on the Wabash River (LLOW). Based out of the Center for the Environment in Purdue University's Discovery Park, LLOW's research focus is the health of the Wabash River and its corridor. The WREC/LLOW partnership is ongoing and has already applied for and received over $2,000,000 in grants to develop a watershed management plan for the Region of the Great Bend of the Wabash River (a sub watershed section of the Wabash River Watershed), obtain implementation funding in support of the now completed management plan, secure funding to continue water quality monitoring and education and outreach work, and develop and implement a management plan for the Deer Creek-Sugar Creek watershed (another sub section of the Wabash River Watershed). The ongoing WREC/LLOW partnership can serve as a catalyst for implementing the recommendations outlined here.

Broad research opportunity areas include land based practices for improvement of water quality, floodplain ecology, rehabilitation of post-industrial sites, integration of recreation with stormwater best management practices, agrarian hydrology, neighborhood development and civic engagement around environmental issues.

The development of a Water Resource Education and Research Station – in combination with an environmental park that would support public access and observation – was very highly supported during public planning meetings. The actual location of such a center, its research partners and research areas will be contingent upon future resources and opportunities. Possible research and project partners to explore opportunities for development of the research center and environmental park in addition to the existing WREC/LLOW partnership, include the National Fish and Wildlife Agency (along with other agencies in Federal Departments such as the Dept. of Interior and Dept. of Agriculture), the Indiana Department of Natural Resources, and various national and regional private and public foundations.

A rendering of environmental education opportunities in Floyds Fork Park, Louisville, Kentucky. Image | WRT

OPEN SPACE

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

A rendering of Floyds Fork Park, Louisville, Kentucky. Image | WRT

Environmental Park

The Environmental Park adjacent to the proposed location for LLOW is envisioned to be a location where the community can engage in environmental education—a place where the knowledge gained from research done at LLOW can be passed on to the public and the scientific and engineering community. This new park amenity can promote both environmental and cultural heritage education, focusing on best practices in land management for stormwater, flood, and agricultural uses. Flood-resistant park design should anticipate and accommodate flood events and help improve water quality for the Wabash. This is also an ideal place to integrate treated effluent from the wastewater plant or stormwater integrated with ecological water landscapes, agriculture, aquaculture, and education. Combined with the Great Lawn and LLOW, the Environmental Park was ranked second in places to make public investments.

Children relax on stone platforms across Mahogany Pond in Russia Dock Woodland, Rotherhithe, London. Image | Steve Cornish via Flickr (Kam Hong Leung)

OPEN SPACE

GOALS

ACCESS

CULTIVATE

ENGAGE

ELEVATE

Great Lawn

Exisiting conditions (left) for the proposed Great Lawn area (right) Image | Stanton Lambert, WRT

A Great Lawn just south of the West Lafayette water treatment plant is envisioned to connect by an existing or upgraded trail to Tapawingo Park. Combined with LLOW and the Environmental Park, the Great Lawn was ranked second in places to make public investments, indicating a strong desire for a place to support large civic gatherings and events at a greater scale than is currently possible in the area.
The susceptibility to flooding of the area greatly limits the degree of feasible investment but several alternatives may be considered:

- Development of a chemical-free lawn, subject to flooding and requiring post flooding maintenance.
- Provision of a boardwalk trail above the 100 year flood plain, connecting this area with Tapawingo Park. The boardwalk design and location would need to consider the impacts of flooding and large, associated debris as well as a review of the condition and maintenance of the boardwalk trail near the Lafayette Golf Course.
- Balancing cut and fill of the site overall, but creating an upper tier or tiers that bring more site area above the current elevations.

The Great Lawn in Brooklyn's Prospect Park is used for recreation (top) and as an event space (bottom). Image | Flickr (schmooze23/lyd)

DEVELOPMENT

GOALS

ACCESS

ELEVATE

Residential Mixed Use

With a proposed Canal Trace Park as a major amenity in the Wabash Avenue Neighborhood and the Rail Bridge trail connection to the north, mixed-use residential development is recommended for the Former Box Board Paper Mill Area. Image | WRT

The Wabash Avenue Neighborhood has great long term potential for development, due to its proximity to downtown Lafayette and available property along the river on its western edge (19+ acres above the 100 year flood plain). However for this potential to be realized, the physical barrier imposed by the rail corridor along its north and east borders must be addressed. The rail corridor separates the neighborhood physically providing a respite from the high traffic in the downtown area, but also serving to disconnect these adjoining areas that are physically very close due to difficulty in access caused by the rail corridor. Well-considered inducements must be initiated to enhance the neighborhood environment and entice future investment to occur that can take advantage of the developable space along the river and the neighborhood's close proximity to the Lafayette downtown.

Much like the Wabash, the lower reaches of the Chicago River in the City of Chicago were a patchwork of vacant industrial land, that now has low- and mid-rise residential development along a riverwalk. In Chicago access to the river for pleasure craft is essential to the marketability of the new development. Image | Nando Micale

The property south of the rail bridge includes the former Box Board Paper Mill Site which is proposed for: residential development; a riverwalk, that connects segments of the riverfront trail; a new linear park along Sycamore Street, that interprets the trace of the historic canal; and an expansion of Shamrock Park that connects the site to the south.
Image | Stanton Lambert

Phasing
General Approach
Phasing Plan
Partnerships

TWO CITIES, ONE RIVER

PHASING

GENERAL APPROACH

The phasing approach for this plan is based on the community visioning and prioritization process, an inducement of development through the provision of public infrastructure and amenities, and the ability of WREC and its partners to attract Federal dollars to specific projects. Central to the phasing approach is the conclusion by the consultant team that a lack of development policies to redirect growth from growth management in the exurban areas to the urban core hinders market potential in the study area, except where the quality and amount of public amenity and accessibility by all modes of transportation is highest.

At the second community meeting, participants were asked for which enhancement projects they would favor public investment.
The community visioning process led the consultant team and the WREC Board to focus on the Brown Street Pedestrian Bridge and Tapawingo Park as first phase investments. While the Great Lawn and the Living Laboratories on the Wabash Environmental Park were identified in the public meetings as a higher priority than Tapawingo Park, the consultant team and the WREC Board determined that their low elevation in the floodplain would make enhancements there an expensive investment due to the need for continual flood maintenance.

The market assessment and development financing testing conducted by the consultant team concluded that the areas of highest amentization are in the core areas of Downtown Lafayette and West Lafayette. These areas have the highest level of accessibility—with transit service, the road network, and pedestrian trail access converging in the core. On the Lafayette side, the Amtrak and CityBus transit hub located in the Big Four Depot at Rheile Plaza, which connects to the riverfront trails and the Myers Pedestrian Bridge, provides excellent multi-modal access for mixed-use development. On the West Lafayette side, highway access, a captive university market, Tapawingo Park, access to Lafayette via the Myers Bridge, and other retail and entertainment amenities position underperforming properties for redevelopment.

WREC has been working with the US Army Corps of Engineers (USACE) to plan and implement corridor enhancement. USACE's established goals are:

- to protect navigation and prevent obstructions in the nation's waters;
- to provide strong protection of the nation's aquatic environment, including wetlands;
- to efficiently administer its regulatory program; and
- to provide the regulated public with fair and reasonable decisions.

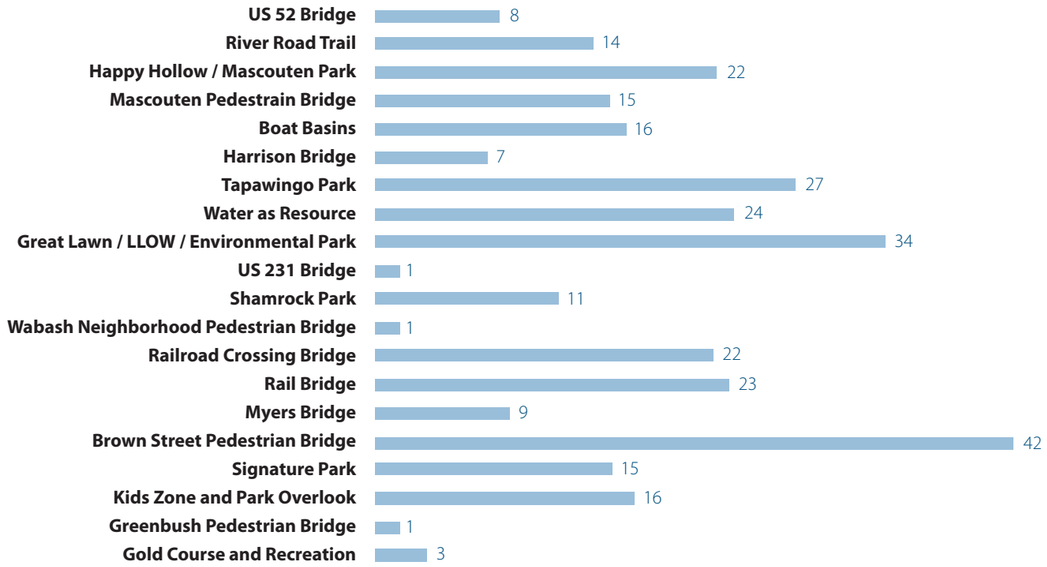
An effective partnership with USACE will entail sustained alignment with USACE planning and implementation goals and the agency's regulatory and operational requirements. USACE river projects must follow a four phase process:

1. Reconnaissance Study – a corridor or project master plan and determination of federal interest in participation in future projects.
2. Feasibility Study – a report including evaluation of alternative solutions, estimation of costs and benefits of alternatives, and a letter of intent by a state or local entity to financially participate in implementation. (sometimes combined with the Design phase, particularly if USACE feels the feasibility of a project has been confirmed during the Reconnaissance Study)
3. Design – includes all design phases/submissions of increasing percentage of completion (sometimes combined with the Feasibility Study phase)
4. Construction – project implementation.

Future participation by the USACE will be determined through an ongoing USACE conducted Reconnaissance Study and leadership from Indiana's Congressional Delegation. Current national economic and fiscal conditions will necessitate coordination of the river front project with national priorities and require WREC and its partners to develop a long term strategy and outlook in order to accomplish this plan.

The Lafayette-West Lafayette community has invested over $71 million dollars of federal, state, county, local and NGO funds to set the stage for this plan. These funds have been used for a broad range of efforts that include property acquisition along the Wabash, improvements to water quality, and environmental and hydrology assessments. WREC is continuing to work with its partners at all levels to implement this plan.

The Money Game – the enhancement prioritization activity used in the second public meeting asking people to prioritize how they would spend $1,000 dollars. Where did the people spend their money?



PHASING PLAN

The following phasing plan lays out the general phasing approach by location and timeline:

PHASE 1 (YEARS 1–5)

With the input from the community and the recommendations of the consultant team, the WREC Board is focusing on identifying potential funding sources for Phase 1 investments for the downtowns and improving the connection between them. This includes improvements to Tapawingo Park and the Myers Bridge landing and the new Brown Street Pedestrian Bridge and landing that will connect Tapawingo Park to the proposed CityBus Transit Plaza.

The following outlines the benefits for the Phase 1 investments:

TAPAWINGO PARK

Amenity

Expands on existing amenities to development—the skate center, playground, and outdoor event space—while engaging and redesigning the Myers Bridge landing, with the purpose of increasing pedestrian use and connectivity. Re-positions Tapawingo Park to be a multi season destination point.

Connectivity

Improves connectivity to Myers Bridge, the trails to the north and south.

Natural Buffer

Retains and enhances a naturalized edge along the river to improve water quality and enhance river bank stability. Due to flooding along the river, natural plantings can be increasingly diverse and beautiful with distance from the river's edge. Tree canopy may also increase with distance from the river's edge, since stabilizing aquatic and wetter prairie species along the river require significant sunlight.

BROWN STREET BIKE/PEDESTRIAN BRIDGE AND LAFAYETTE LANDING DISTRICT

Landmark

Provides a distinctive visual landmark and contemporary interpretation of an historic feature that has long standing positive associations for the community.

Connectivity

Creates another direct neighborhood-to-neighborhood, civic-place-to-civic-place connection by enhancing the pedestrian and bicycle network. The Brown Street Bridge would have two landings on the Lafayette side—one on either side of the Amtrak line. The riverside landing would provide greater visibility and enhance connectivity to the riverside trail and to Wabash Avenue neighborhood. The city-side landing area acts as a civic place and as a trailhead to north- and south-bound trail connections, and connects directly with the

Centennial Transit Village mixed use development component. Available funding may enable the proposed CityBus TOD to be phased in during Phase 1.

PHASE 2 (YEARS 5–15)

Based on the consultant team's market assessment and development feasibility, in Phase 2 private sector development is expected to be underway in the downtowns and potentially in the Wabash Avenue neighborhood. This would include the redevelopment of Levee Plaza, the proposed CityBus TOD, and the redevelopment of the "Box Board Paper Mill" and Midwest Rentals sites for mixed-use. Public-private partnerships will be crucial to the success of Phase 2 redevelopment efforts. Park amenities will serve to induce the market to high value development.

Phase 2 continues investment in the core that builds off land the WREC partnership controls and continues to induce market to the downtown neighborhoods. Phase 2 investments include the Wabash Avenue Neighborhood Signature Park on the former Box Board Paper Mill site, and the extension of Tapawingo Park to the Harrison Bridge. Each of these investments expands connectivity, increases access to the river, and provides opportunities for the restoration of the river's edge.

The following outlines the benefits for the key Phase 2 investments:

TAPAWINGO EXTENSION

Amenity
Expands on the amenities to development (Levee Plaza) to include cultural amenities and paddle craft access.

Connectivity
Extends trails to the north to connect to the "borrow pits" and the future boat basin development.

Tree Buffer
Retains and enhances the tree buffer above the line where trees are able to survive extraordinary flood events. This is important both for water quality and the quality of vegetative areas that protect the river bank's integrity.

LAFAYETTE RIVERFRONT LANDSCAPE RESTORATION

Project Amenity
Creates a new park amenity that restores previously contaminated riverfront property accessible to Downtown Lafayette.

Connectivity
Enhances the trail connection along the Wabash.

Water
Includes low investment open space, such as play fields and passive park, to allow for flood event storage capacity. The integration of stormwater management elements will help improve water quality for the Wabash.

WABASH AVENUE NEIGHBORHOOD SIGNATURE PARK AND GREEN STREETS

Amenity
Create a new park amenity by expanding and enhancing the existing Shamrock Park with cultural heritage interpretation in the canal interpretation feature, which serves as a stormwater management feature.

Connectivity
Creates a network of green streets that connect the new park to the neighborhood and upland neighborhoods via the existing pedestrian rail bridge.

Water
Includes low investment open space, such as play fields and passive park, to allow for flood event storage capacity. The integration of stormwater management elements related to the canal interpretation feature will help improve water quality for the Wabash.

CONTINGENT ON PRIVATE SECTOR DEVELOPMENT

Investments that are contingent on the private sector development include:

- Rail Road Bridge Retrofits
- Canal Interpretation
- Lafayette Promenade
- Lafayette Central Area Green Streets
- Lafayette Southern Area green Streets
- West Lafayette Central Area Green Streets

PHASE 3 (YEARS 15–25)

Phase 3 investments seek to expand the communities' views of the Wabash both for recreation and for environmental education. The consultant team believes that at this stage the balancing of investments on both sides of the river is important. The Living Laboratory on the Wabash Environmental Park on the west, the Overlook Park on the east, and the pedestrian bridge at Mascouten Park are key to expanding connectivity and use along the Wabash.

PEDESTRIAN BRIDGE AT MASCOUTEN PARK

Landmark
Provides a distinctive visual landmark.

Connectivity
Creates another direct neighborhood-to-neighborhood, civic-place-to-civic-place connection by enhancing the pedestrian and bicycle network.

OVERLOOK PARK

Amenity
Creates a new active park amenity that restores previously contaminated riverfront property and is accessible to both sides of the Wabash via the Mascouten Pedestrian Bridge.

Connectivity
Enhances the trail connection along the Wabash.

WABASH ENVIRONMENTAL PARK, RIVERFRONT TRAIL AND LLOW PARTNERSHIP

Amenity
Creates a new park amenity with both environmental and cultural heritage education, focusing on best practices in land management for stormwater, flood, and agricultural uses.

Connectivity
Enhances the trail connection along the Wabash.

Water
Includes low investment open space to allow for flood event storage capacity. The integration of stormwater management elements will help improve water quality for the Wabash.

PHASE 4 (YEARS 25+)

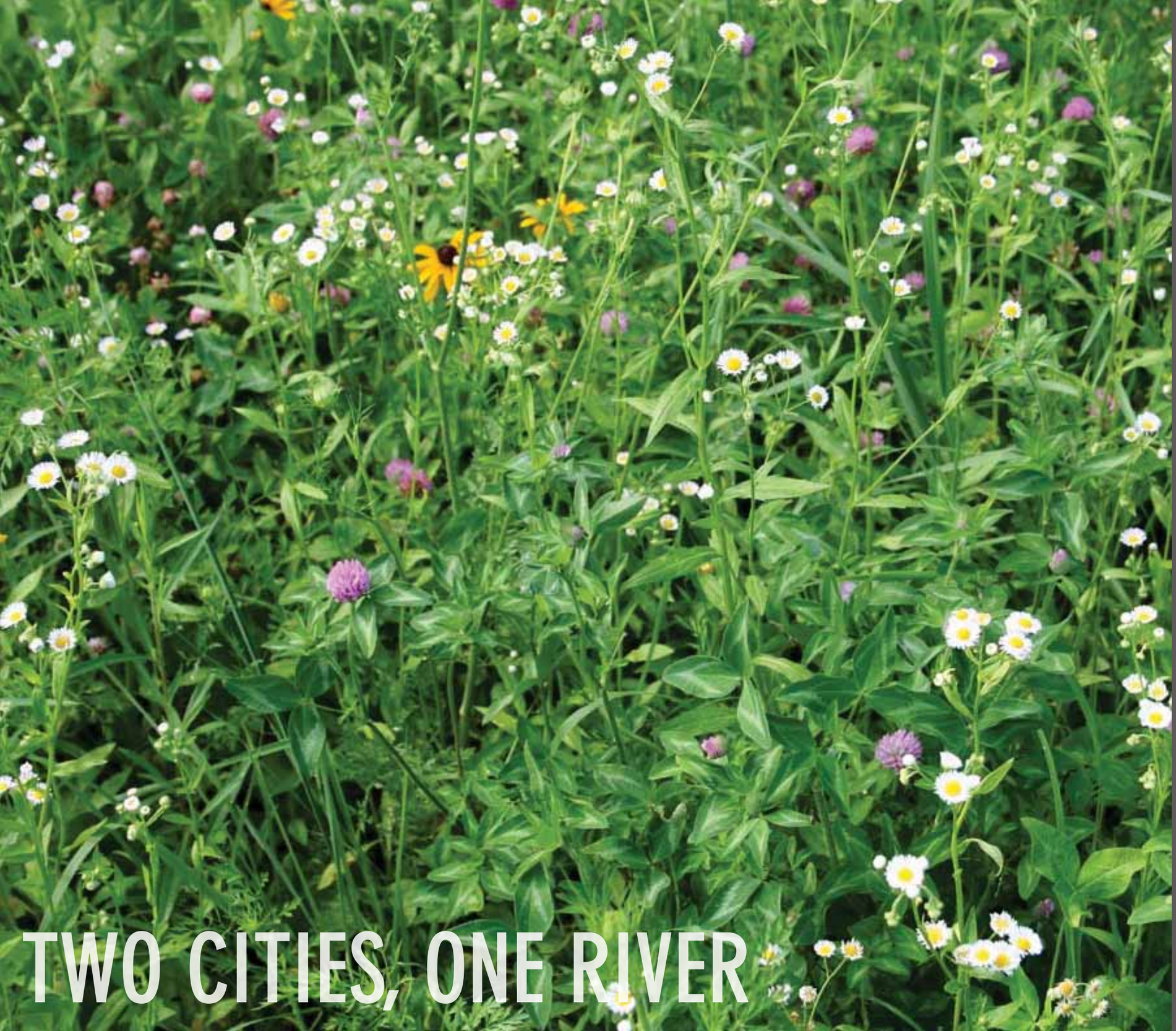
The remaining phases are subject to funding, political and social interest, private sector development interest, and success of the first three phases of development. Investments in Phase 4 include expansion of the Wabash Avenue Neighborhood Signature Park to Shamrock Park and beyond along the Old Tow Path Road, redevelopment of the Golf Course, enhancement and expansion of Happy Hollow and Mascouten Parks, and the Great Lawn south of Tapawingo Park.

PARTNERSHIPS

KEY PARTNERS

North Central Health Services
City of Lafayette
City of West Lafayette
Tippecanoe County
Tippecanoe County Area Plan Commission
Tippecanoe County Soil and Water Conservation District
Natural Resource Conservation Service
Purdue University
Purdue Research Foundation
Community Foundation of Greater Lafayette
Greater Lafayette Commerce and its members
State of Indiana
- Department of Natural Resources
- Department of Environmental Management
- Department of Transportation
- Department of Commerce
- Office of Tourism Development

United States Army Corps of Engineers
Federal Highway Administration – Department of Transportation
United States Environmental Protection Agency
U. S. Department of Housing and Urban Development
U. S. National Park Service



TWO CITIES, ONE RIVER

Credits
About WREC
Project Credits

CREDITS

ABOUT WREC

The Wabash River Enhancement Corporation (WREC) is a not-for-profit agency that was formed in 2004 to guide enhancement of the Wabash River corridor. WREC began operations in 2005 when the first executive Director, Stanton Lambert, was hired. WREC's mission is to: enhance the quality of life in the Wabash River Corridor by providing sustainable opportunities to improve health, recreation, education, economic development, and environmental management. WREC developed an agency strategic plan in 2006 to guide its efforts to enhance the corridor. Its initial funding came through a generous $500,000 grant from North Central Health Services (NCHS)—a regional non-profit organization that provides community health services and grants to address community health and community development issues. NCHS continues to actively support WREC and Wabash River Corridor Enhancement through funding planning, development and land acquisition projects. Efforts undertaken by WREC include:

- Designation of River Road and Division Road in West Lafayette and Tippecanoe County as a State Scenic Byway
- Completion of a United States Army Corps of Engineers Hydraulic Study of the Wabash River Corridor – in Tippecanoe County to update flood maps
- Completion of a United States Environmental Protection Agency grant to conduct Environmental Assessments of corridor properties
- Development of a Corridor Master Plan for the Lafayette-West Lafayette Urban Riverfront Section of the Wabash River in Tippecanoe County
- Development of the Tippecanoe County Master Plan for the Wabash River Greenway
- Completion of a United States Geological Survey pilot project to map the bottom of the Wabash River
- Development of a watershed management plan for the Region of the Great Bend of the Wabash River.
- Acquired two key properties in the Lafayette Urban Core.
- Worked with North Central Health Services to have NCHS acquire the Box Board Paper Mill property.

NCHS's leadership and vision are invaluable to the long term success of this effort.

PROJECT CREDITS

FUNDERS

North Central Health Services
City of Lafayette
City of West Lafayette
Tippecanoe County
Community Foundation of Greater Lafayette
Duke Energy Foundation
Alcoa Foundation
Tippecanoe County Park and Recreation Foundation
West Lafayette Parks and Recreation Foundation
Lafayette Urban Enterprise Association
Purdue Research Foundation
Caterpillar
Lilly Tippecanoe Laboratories

BOARD

Wabash River Enhancement Corporation Board of Directors:

Tony Roswarski
Board President
Mayor, City of Lafayette

Tom Murtaugh
Board Vice President
Tippecanoe County Commissioner Representative

John Dennis
Board Treasurer
Mayor, City of West Lafayette

John Collier
Board Secretary
Director of Campus Master Planning, Purdue University
Designated Representative for Purdue University President

Andy Gutwein
Tippecanoe County Council Representative

Ted Bumbleburg
Superintendent of Parks and Recreation
City of Lafayette Park and Recreation Board Representative

Richard Shockley
City of West Lafayette Park and Recreation Board Representative

John Gambs
Tippecanoe County Park and Recreation Board Representative

Norman Neiburger
Wabash River Parkway Commission Representative

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Jeff Kemper
Mike Dana
Jan Mills
Kathy Vernon

Executive Director
Stanton Lambert

Watershed Coordinator
Sara Peel

Board Attorney
David Luhman

TECHNICAL ADVISORY COMMITTEE

Dennis Carson — Director of LUEA & Com Dev. Dept./City of Lafayette
Gene Hatke — Wabash River Parkway Commission
Liz Solberg — Community Leader
Sallie Fahey — APC Executive Dir.
Joe Seaman — CEO, Greater Lafayette Commerce
Jo Wade —President, Tippecanoe County Convention and Visitors Bureau
Joe Payne — City of West Laf. Supt. of Parks & Recreation
Allen Nail — Tippecanoe Co. Supt. of Parks & Recreation
Kim Wilson — Purdue University – Professor, Dept. of Horticulture and Landscape Architecture
Duke Energy Staff representative
United States Army Corps of Engineers Staff

LOCAL GOVERNMENT PARTICIPANTS

City of Lafayette
Department of Parks and Recreation
Department of Water Pollution Control
Department of Water Works
Department of Engineering
Department of Community Development

City of West Lafayette
Department of Parks and Recreation
Department of Development
Department of Engineering

Tippecanoe County
Area Plan Commission
Department of Parks and Recreation
Department of Highways
Department of Information Technology

CONSULTANTS

WRT
CDF
HTNB
AECOM