Greenways are linear corridors of open space varying in length and width, under public or private ownership, with multiple benefits to wildlife, water quality, stormwater management, human health, and quality of life. A greenway could be as small as a spring and the headwater creek-run that is created on an acre of privately owned property. If the creek-run flows downhill through several more properties, a more significant greenway habitat is created, but this somewhat larger greenway is dependent on the first property’s spring and creek-run. As the creek continues its run through farmfields, neighborhoods, and town centers, the quality of the creek and its adjoining habitat is affected by each property owner’s management decisions on the land he or she owns. One of the defining features of larger greenway systems is that, since they are usually under multiple ownerships, they need cooperative efforts to ensure their integrity. Being linear by definition means that their benefits can diminish fairly quickly if sections are managed poorly or substantially changed in character.

There are several distinctive types of greenways from which a linear open space system can be described.

Stormwater has an obvious impact on the landscape. When soils lose their infiltration ability under deep-rooted prairie vegetation, they drain stormwater rapidly to the lowest point in the nearby landscape. These low swales continue to gather water, connecting into other swales and adding volume, until a creek is reached. Since most small watersheds have lost much of their infiltration capacity due to farming, lawns, and asphalt, stormwater gathers into large volumes which commonly overwhelm creek systems creating flooding in an area defined as the floodplain. This system of swales, creeks, and floodplains is one of the best known greenway systems. In most communities, this system is protected from development into harder surfaces so that flooding isn’t increased. The drained wetland soils and surrounding prairie uplands that overlay this system and used to infiltrate the stormwater could still be retro-fitted to deeper rooted habitat to soften the flooding impacts. The drained wetland soils are called hydric soils.
A key aspect of Northwest Indiana’s landscape is its division into the Lake Michigan and Kankakee River drainage basins by the Valparaiso Moraine. Scattered throughout the surface of this massive glacial deposit are thousands of acres of oak savanna remnants stretching from the Indiana-Illinois state border to the St. Joseph County line and the Indiana-Michigan state border. Indiana lies just to the east of the rain shadow of the Rocky Mountains, which resulted in a dominant prairie landscape from the mountains to Illinois and Indiana. With just a bit more moisture, it is the transition state between the prairie of the west and the woodlands of the east. In addition, Northwest Indiana also has sand savannas interspersed along the beach ridges of glacial-era Lake Michigan and the Kankakee River. The savanna remnants, in total, represent a greenway system of an entirely different type, which in one sense seems to break the rule on continuity. But migratory birds, savanna-based butterflies and moths, and larger animals depend on the savanna remnants for refuge, moving from one to the next if given the opportunity. This movement of species through the landscape depends on the survival of as many undisturbed savanna remnants as possible. Since most of the savanna remnants are privately owned, their preservation is dependent on the private sector to sensibly locate homesites so that the core of each savanna is preserved.

More common animal and bird species utilize the many pipeline, electric utility line, and railroad greenway corridors that cross-connect throughout the region. Many of these utility and transportation corridors also preserve deep-rooted prairie segments that serve to infiltrate stormwater and replenish aquifers. Many of the railroad corridors have preserved stretches of native prairie within their right of ways. NIPSCO has led the way throughout the region in working with local communities and organizations to control invasive plants, enhance native plant habitat, and maintain habitat for threatened and endangered animal species within their electric utility corridors.

The linear non-motorized trail system of Northwestern Indiana is being substantially developed on abandoned railroad right of ways that link an increasing number of parklands and recreation areas. Although a bike trail may take 10-12 feet of a 60-100 foot right of way, the remainder of the corridor is considered a greenway. The natural or landscaped appearance of these linear trail corridor greenways add to the experience of bicycling, walking, pushing baby strollers, in-line skating, or in some locations, horseback riding. For most residents of Northwest Indiana, the trail system has been their primary experience with greenways.

These trails provide important public recreation benefits and are becoming increasingly recognized for the role they play in public health. **Interstate highway corridors** can be planted with deep-rooted native vegetation to provide greater flood mitigation for the region as well as groundwater recharge. These wide corridors could play a significant marketing role by creating a unique landscape aesthetic that enhance Northwest Indiana’s image nationally for economic development. A traveler gains an impression of the region based on what is seen of the roadscape. Intensive and creative landscaping could be accomplished throughout the interstate highway corridor system in the Northwest Indiana region.

In the mature older communities with large areas of abandoned industrial lands, greenways can become a key site planning strategy to create investment value on these sites. **Greenways in Brownfields**, especially as key components of residential, commercial, and job-based projects, are almost necessary in today’s competitive development market. Water features, walking paths, linear parks, and strong landscape features add vibrancy and attractiveness to a development and are utilized in many award-winning public and private sector projects. Greenways are suitable corridors for agriculture, both on a large scale as found in traditional farms and agri-business enterprises, where soils that may have high water tables are prime agricultural lands. In suburban and urban areas, greenways provide open space corridors for urban agriculture, school gardens, community gardens, organic specialty crops, and native seed production for the marketplace.
Greenways protect & enhance habitat for plants and animals

Greenway networks provide continuous open space corridors for plants and animals to migrate to larger habitats where they can more successfully survive and thrive. This is especially important not only to maintain viable populations and avoid local extinctions, but also to provide for a larger gene pool, which is important for reproduction in the long term. There is still many biologists who have yet to learn with regard to how wide of a greenway is needed to provide for migration. In general, narrow long greenways between larger expanses of habitat are less effective than shorter, wider greenways.

Greenways provide recreational opportunities

Northwest Indiana’s popular non-motorized trail system has taken advantage of a number of abandoned railroad corridors that are, typically, 60-100 foot wide greenways. These publicly owned corridors are active passageways for biking, jogging, skating, walking, and strolling for all age groups and people of many levels of ability or disability. But greenways in private homes association common areas, regulated drainage ditches, and strung-together private backyards provide places for adults and children to engage in other types of personally important daily recreational activities on their own land, whether it’s a simple short walk, birdwatching, fishing, gardening, nature observation, or playing in and near creeks.

Why preserve greenway corridors?
Is it worth the effort? What are the benefits?

Rather than being known for achieving a single purpose, greenways have instead been recognized for accomplishing many purposes. They also are becoming increasingly significant in resolving newly identified national and local problems. Greenways seem to have benefits that weren’t even envisioned when they first became a commonly accepted landscape strategy in the 1980s and 1990s.

Consider the following benefits of achieving a successful greenway protection effort in Northwestern Indiana.

Greenway Benefits
**Greenways improve and sustain hydrological functions**

Creeks and rivers seasonally flood, some years over more of the floodplain than others. Drainage swales from uplands in combination with the lower floodplain areas can infiltrate rainwater into groundwater aquifers, especially if planted with deep-rooted native vegetation. These wet “hydrological greenways” perform best if they aren’t built upon or turned into lawn, in which case they pass on their lost capacity for flood storage downstream to expand the floodplains of the next set of property owners. If stormwater isn’t infiltrated to groundwater aquifers, it is an increasingly expensive, lost resource draining into either Lake Michigan or the Gulf of Mexico.

**Greenways protect public infrastructure investment**

Several billion dollars in public infrastructure have been built in Northwestern Indiana in facilities such as roads, bridges and culverts, sewer and water lines, parks, trails, and public facilities and buildings. Dysfunctional floodplains and stormwater flows along upland swales, which are not mapped or protected as floodplains, can destabilize or ruin public infrastructure in major storms. A protected greenway system upstream of these facilities, with good infiltration and stormwater storage capacity is the simplest and most cost-effective strategy for protecting these public investments.

**Greenways protect private investment**

Several billion dollars in private investment have been invested in Northwestern Indiana in the form of pipelines, commerce and industry, homes, backyard structures and yards, and farming operations. Dysfunctional stormwater flows because of loss of floodplains or hardsurfacing of drainage swales can cause significant personal loss of property, investment, and cashflow. Healthy, functioning hydrological greenways upstream of these properties are the best insurance possible to avoid private financial loss.

**Greenways protect cultural & historic resources**

Northwestern Indiana has an incredibly rich heritage providing almost 10,000 years of passage along its creeks and rivers, the Lake Michigan lakefront, and high and dry trail corridors for succeeding generations of Paleo, Archaic, Woodland, and Mississippian First American cultures. Followed by other cultures, including French-Canadian, British, and Colonial American explorers, military, and missionaries.

In the 1820s thru the 1840s, Northwest Indiana became the route for early American settlers of the west. In the midst of all of this traveling, many people settled and established Indian villages, trading posts, log cabins, hunting camps, woodlots, mill sites, first towns, and farms. A greenway system can help in preserving these historic and prehistoric resources. Walking, canoeing, and horseback riding all hark back to this 10,000-year period of traveling.
**GREENWAY Benefits**

**Greenways provide a place for significant levels of carbon entrapment**

The root systems of trees, shrubs, grasses, and flowers grow when the plant absorbs carbon dioxide and transports the carbon from this greenhouse gas into the living tissue of the root. The deeper and more extensive the root system, the more carbon is converted and put underground. A farmer’s hay pasture or perennial bio-fuel crop, a prairie remnant or restoration, or a healthy native oak savanna create especially large amounts of carbon entrapment, or sequestration, measured in levels of tons of carbon per acre, which would otherwise be in gaseous form in the atmosphere. Carbon entrapment is one of the principal strategies for combating the negative effects of climate change.

**Greenways provide a place for remediation of pollutants by natural processes**

Plants will absorb a large number of chemicals from a degraded, polluted landscape, and thus provide one of the least expensive methods of assisting in the cleanup of otherwise unusable properties. The plants accomplish this role by

- Transporting the chemical into plant tissue, which can be harvested and removed from a site
- Absorbing the chemical into plant tissue and transforming it into safer chemicals
- Absorbing the chemical and breaking it down into safer gases, which are transpired into the atmosphere

Allowing brownfield sites to be intentionally “phyto-remediated” by plants is an increasingly common approach to pollution cleanup. In like manner, many pollutants that commonly flow through our neighborhoods through overuse of household chemicals, such as hydrocarbons from automotive activity, and pesticides, fertilizers, and insecticides from lawn maintenance are at least partially phyto-remediated by downstream greenway networks.
Greenways provide health benefits

The medical industry has recognized the value of 15 to 20 minutes of daily exercise on preventing or minimizing cardio-vascular disease, osteoporosis, type II diabetes, and some cancers. The exercise can be as basic and simple as a daily walk, and residents are increasingly attracted to new trail systems for this reason. In addition, there is increasing evidence that daily interactions with the natural environment have therapeutic effects on adults with mental stress and on children with attention deficit hyperactivity disorders. Proximity of greenways to neighborhoods is important so that the natural environment can be easily accessible.

Greenways enhance the natural beauty and aesthetics of neighborhoods and communities

Older neighborhoods with mature trees, homes with deep backyards adjoining stream corridors, or a series of residential yards protecting oak savanna remnants are often thought of as the most attractive communities in town. New developments are beginning to recognize how strongly the marketplace responds to connected green spaces, landscaped buffers, creek corridor enhancements, and native plantings. An increasing number of communities are establishing downtown riverwalks connecting parks, libraries, and schools in an effort to add aesthetic values to aging developed areas.
Greenways improve the quality of life of neighborhoods and communities

Mature trees and shrubs cool the summer climate in neighborhoods, reducing the heat island effect of too much concrete and asphalt. Long linear greenway corridors along streams and creeks provide aesthetic open space views and play space for adjoining homes and neighborhoods. Clean and healthy creeks are aesthetic assets to any neighborhood. Greenway buffers, whether public or private, soften the impact of highway noises and bright commercial lighting.

Greenways provide for stewardship opportunities on a personal level

An increasing number of local residents and school children are becoming involved with habitat restoration whether on public lands, school grounds, or private backyards. Citizens are motivated by a desire to attract birds or butterflies to native prairie or woodland habitats. For others, the beauty of native perennial flowers is appreciated. It’s not uncommon to create small habitats for 50 to 100 native plant species especially if a variety of soils and sun levels are present. The growing popularity of rain gardens adds greatly to the plant and animal diversity, which can be attracted to small restorations. Many property owners have purchased their land partially because of a desire to protect wetlands, savanna remnants, or small seeps, springs, and streams. Typically these small restorations or protected habitats are dependent on the health and connectedness of a larger system of private and public greenways which helps to sustain the hydrology and diversity of species that they desire to steward. For example, a single backyard might successfully create a prairie garden for certain plants and butterflies, but a series of healthy backyard habitats that link to a nearby protected creek corridor might attract deer, owls, tree frogs, wood ducks, or foxes.
Greenways open up economic development opportunities in a competitive market

Riverwalks are being developed by communities interested in revitalizing their downtowns. Brownfields are often restored for habitat or community parklands. Nationwide, the fastest job growth is often occurring in communities and regions known for their green spaces and related recreational opportunities. Many corporate location specialists look for communities that offer attractive green space opportunities for their employees and their families because they know their workforce factors these quality of life features into making a relocation decision. Most economic development brochures build an image of open space, recreation, and a healthy lifestyle as a marketing enticement for corporate relocations.

Greenways Enhance property values

Many studies have shown that homes bordering protected open space sell for a premium. Residential developers charge a premium for lots located next to protected open space. Greenway corridors, especially along creeks and rivers where floodplains already preclude the development of property, offer the most cost-effective type of open space corridor to set aside for protection by the development industry. Homebuilders have learned, too, that they don’t need to front the money to build golf courses as central features of cluster developments because purchasers are just as satisfied with a protected habitat core within their neighborhood, which can also have active use parks and trails intermixed. In a competitive housing market, developers who offer open space amenities throughout a development often have a competitive advantage. Developers can save significant dollars by designing greenway-oriented stormwater best management practices such as infiltration swales, infiltration buffer strips, community rain gardens, and prairie and wetland restoration in floodplains in lieu of hardscape stormwater conveyance structures.