

# Built Environment and Natural Resources



## NATURAL RESOURCES AND COMMUNITY HEALTH

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In the early 1900s, urban planning policy responded to major concerns in large cities, such as overcrowding, pollution and disease. These concerns were addressed with tools including comprehensive plans, zoning and other development regulations (Wilcox et al., 2018). Today, planning is focused on solutions to the equally challenging issues of reducing physical inactivity and poor nutrition. However, community health is far too broad a field to address holistically through the natural resources element of a comprehensive plan, so we will examine how planning can contribute toward creating spaces for active living, or physical activity in one's daily life.

From a planning perspective, physical activity and natural resources are most directly connected through leisure activities in public spaces, including parks and multi-use trails. Therefore, this section focuses on how the comprehensive plan can be used to provide opportunities for active living through deliberate parks, trails and open space planning policy and regulatory tools. By identifying and planning for natural resource assets in your community, you can also create economic development benefits. In this context, we consider natural resources to include public and private undeveloped land that could be used or acquired by a parks system/municipality, community group or developer. The land should also be accessible to the public so that benefits of active living can be shared. When considering the use of open space, this document is referring to preserving or utilizing open space for

public use. Most open space in Indiana is privately owned and should not be used for recreation without the owner's consent.

Research on the health benefits of recreational areas has shown that access to recreation areas, parks and quality public spaces is beneficial to individual health (Han, Cohen, McKenzie, 2013). These spaces provide low- or no-cost outdoor opportunities for moderate-to-vigorous physical activity such as running, hiking or playing basketball to all who are able to access them. A study was conducted on users of six Indiana trails in both urban and rural settings. It found that at least 70 percent of users reported more physical activity due to the trail's existence (Wolter, Lindsey, Drew, Hurst, & Galloway, 2001).

Communities can also reap economic benefits by providing active living opportunities that leverage natural resources. Accessible recreation and open space amenities contribute significantly to quality of life. It has been shown that communities that provide active living amenities increase quality of life, attract greater investment and are more competitive for a talented workforce (LaGro, 2008).

## LAND USE PLANNING

Open space/natural resource planning serves many purposes beyond providing recreational opportunities. Several types of open space classifications may be required to adequately address concerns within a jurisdiction (Berke, Godschalk, Kaiser, & Rodriguez, 2006). Below are examples of different types of open space that you might find in your community:

- Agricultural fields
- Forests and woodlots
- Grasslands/grazing lands
- Riparian corridors
- Golf courses
- Bicycle/pedestrian trails
- Greenways
- Wetlands and floodplains
- Wildlife habitats
- Environmentally critical areas (high slope, high water table)
- Parks, playgrounds and ballparks

*(Prokopy, McCormick, & Reimer, 2004)*

In addition to providing places for outdoor recreation, open spaces can provide green infrastructure services that have measurable economic benefits to the community, including:

- Buffering from natural hazards such as floods.
- Protection of natural processes such as ground water recharge areas.
- Protection and management of economic production such as forestry, tourism and water supply.
- Protection and enhancement of natural and cultural amenities, such as historic assets.
- Shaping urban form. Dedicated open space can be used to encourage growth elsewhere in the community. Consider transfer or purchase of development rights programs to further guide development. Additional resources on these topics can be found in the resource section.

Bloomington, Indiana, has a land use district for parks and open space in the future land use map of its comprehensive plan. It provides a thorough example of the application of open space planning to achieve the benefits listed above. The district is described as follows:

*The Parks/Open Space district includes neighborhood and community parks, natural areas, multi-use trails, golf courses and other recreational amenities. Parks/Open Space areas should provide opportunities for both active and passive recreation, as well as opportunities to produce local food through community gardening and the planting of fruit trees. These areas also provide natural habitat, conservation areas and other protection areas important for their environmental and/or cultural significance. For example, the Griffy Lake Nature Preserve is used for recreation, but much of this area is characterized by steep, forested hills, bluffs and cliffs; it offers many other benefits for conservation and natural habitat. The intent of this district is to maintain and expand the inventory of public/private parks and open spaces for the residents of Bloomington.*

Consider the active living or economic development opportunities that could be implemented or encouraged within an area designated for these purposes.

## COMPREHENSIVE PLAN: ANALYSIS, GOALS AND OBJECTIVES

In Indiana, the comprehensive plan is an advisory document. The terms found in it (goal, policy, vision, principle, objective, strategy) are similar in meaning but used differently among comprehensive plans. In general, policies, principles, vision and goals are broadly reaching ideas to which the community aspires through the implementation of objectives and strategies (which are also used interchangeably). Yet none of these policies for the community’s future has the force of law. The zoning ordinance and subdivision control ordinance are the laws that are created to gradually implement the plan as development or contraction occurs. If your community is interested in using natural resource assets to increase active living and economic development, it

should review these regulatory tools to identify barriers or additional needs. Consider the following:

- Are regulatory tools such as overlay districts/zones in place to allow protection of biological or culturally sensitive natural resource assets?
- Are underutilized areas such as flood plains permitted to be used for activities that support active living?
- Are land conservation strategies included or incentivized in development regulations?

Review the examples of principles, policies and strategies below from a range of Indiana jurisdictions: Anderson (adopted in 2005), Bloomington (updated in 2018) and Madison County (2001).

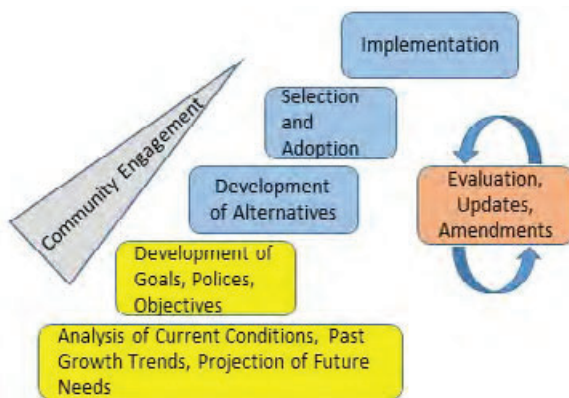
## EXAMPLE COMPREHENSIVE PLAN POLICIES THAT BENEFIT ACTIVE LIVING AND ECONOMIC DEVELOPMENT

Benefit	Jurisdiction (adoption)	Comprehensive Plan Organizational Structuring	Example from Plan
Active Living	City of Bloomington (updated 2018)	Principle	Encourage healthy lifestyles by providing high-quality public places, greenspaces, and parks and an array of recreational activities and events.
Active Living	City of Anderson (2005)	Policy	Ensure access to open space: Provide convenient access to parks and open space amenities for all new residences in Anderson. This may include provision of open space within new subdivision developments.
Active Living	City of Anderson (2005)	Policy	Support development of a greenways trail system: Greenways trails can provide a unique recreational experience for a community, help to protect key natural areas and features and enhance transportation options for residents. Trails through existing parts of the community as well as within new developments should be considered as part of an overall system.
Economic Development	Madison County (2001)	Strategy	Support the development of amenities that would retain and attract businesses and residents to the County. Amenities that are attractive to both employee and employer could include: recreational opportunities (parks and trails) [etc.].
Economic Development	Hendricks County (2006)	Goal	Promote the development of amenities such as appropriately located shopping and recreation opportunities as economic development tools to encourage business relocation.

The first step to leveraging natural resources for the goals of active living and economic development is figuring out what exists and what is important to your community. Natural resource assets are identified through public engagement and analysis by professional planners during preliminary stages of the comprehensive planning process. Population projection and public feedback will assist planners in determining whether the current recreational facilities in the community will meet the future needs of its residents.

The highlighted steps in the graphic below show how identifying assets through analysis of current conditions and development of goals, policies and objectives that contribute to active living and economic development fit within the planning process.

## THE COMPREHENSIVE PLANNING PROCESS



Determining future needs is a complex process due to the variety of recreation options, site options, natural assets and population changes over time and space. Natural assets are not always rurally situated or located at the fringe of the urbanized area; they can be surprisingly central. Undeveloped, vacant or remediated property can make ideal urban settings for recreational opportunities that promote active living. All such locations should be inventoried prior to developing goals and objectives so that all opportunities are apparent to decision makers. Berke et al recommend distinguishing between use-based recreation, which is organized activity such as sports fields, and resource-based recreation, which is valued due to its natural character or setting. Use-based recreation such as basketball courts might benefit in terms of the number of users by being near to some remarkable natural

feature, but ultimately it can be implemented anywhere there is suitable available land, while keeping in mind the principles listed below. An example of resource-based recreation is cycling through several miles of rural Indiana countryside on the Cardinal Greenway. The resources being utilized in this example are unbroken agricultural viewsheds, open space and perhaps the occasional stream or forest.

Consider these principles to aid in determining the “active living” benefit of a site or improvement:

- **Accessibility:** The more accessible a park or trail is, the more benefits it can provide a community. Urban or urban fringe opportunities may be rare, complex to develop and expensive to implement, but a greater number of people can conveniently use such a place more often. Sites that are on existing public transit routes are most accessible. A quick way to determine the accessibility of an urban site is to use a website like [www.walkscore.com](http://www.walkscore.com). It provides information on accessibility for all common forms of transit.
- **Connectivity:** Connectivity is a function of the natural space. Some locations can serve as links between other assets in a recreation system such as parks or forests. Identifying key gaps in the system will help the community be prepared when a parcel becomes available. Linking parks to one another or linking employment centers to residential areas through trails are ways to remove barriers to active living.
- **Shared use:** Natural resource assets that have more than one use for more than one particular user should be a priority.

These concepts have added importance when considering locations for use-based recreation. Consider these active living/recreational activities, the locations where they take place, whether they are use-based or resource-based and how the settings they require would influence how natural resource assets within your community are prioritized:

- Walking the dog
- Commuting
- Hunting
- Taking kids to a playground
- Bird watching
- Hiking
- Swimming
- Biking
- Softball
- Skiing

Once natural assets are identified and future need assessed, the plan's policies for open space/natural resources can be developed to conserve unique or biologically significant areas that contribute to resource-based recreation activities. For example, Monroe County, Indiana, identified Karst areas\*, wetlands, soils, floodplains, waterbodies, watersheds, contiguous forest canopy, steep slopes and endangered species as part of its existing conditions inventory and created a future land use district to advise zoning regulations where such conditions exist. The resource-based activities above may be integrated into the different types of areas where appropriate.

According to Chapter 9 of the *Indiana Citizen Planner's Guide*, communities can include standards for open space and recreation areas within their subdivision control ordinance. "Conservation subdivisions" are one method for balancing preservation and use of natural assets with residential development. The layout of a conservation subdivision requires compact clustering of dwellings on relatively small lots, while the larger parent tract remains undeveloped. The subdivision ordinance may require these spaces to remain undeveloped or minimally disturbed. Building sites should minimize infrastructure requirements and maximize the amount of open space. During design, environmentally sensitive areas such as wetlands are prioritized for preservation. Low-impact development standards are applied to street design, lighting and other infrastructure. Some development-related improvements include trails and parks. Depending on the arrangement between the developer and governing body, management of common areas is either transferred to government or paid for through local homeowner or property owner association fees.

## CONCLUSION

Natural resource assets present Indiana communities with the opportunity to leverage natural resources for economic development and provide better options for active living. A well-developed set of goals and objectives incorporated into your community's comprehensive plan will inform the development of regulatory tools that develop and preserve natural resources. Open spaces can provide additional economic development opportunities through use-based or resource-based recreation as well as a place



for recreational active living. For more information about opportunities to use the comprehensive plan to enhance these quality-of-life issues, consider engaging the *Enhancing the Value of Public Spaces: Creating Healthy Communities* program available through Purdue University Extension.

\*Karst areas are areas where water infiltrates into the ground rapidly due to subsurface cavities in limestone bedrock. This has implications for groundwater quality and surface soil stability.

## RESOURCES

**Hendricks County Indiana Conservation Subdivision Development Guidebook:** This resource is Hendricks County's Conservation Subdivision standards. Available here: [http://www.co.hendricks.in.us/egov/documents/1437573385\\_31303.pdf](http://www.co.hendricks.in.us/egov/documents/1437573385_31303.pdf)

**Indiana Citizen Planner's Guide, Chapter 9: Subdivision Control:** This resource discusses the subdivision control ordinance in Indiana and includes further information on conservation design subdivisions. Available here: <https://www.indianaplanning.org/wp-content/uploads/2012/12/FINAL-CitizenPlannersGuide-3.20.17-Ch.9-SubdivisionControl.pdf>

**Indiana Citizen Planners Guide, Chapter 12:** Planning for Public Health: This resource discusses health in terms of physical activity, healthy eating and safety. It discusses many different types of plans, policies and programs and how they can be used to benefit public health. It also discusses challenges for adopting such policies in the state of Indiana. Additionally, it provides a list of further resources related to health and planning that can be used to integrate policies beneficial to health across a variety of plans. Available here: <https://www.indianaplanning.org/wp-content/uploads/2012/12/Chapter-12-Planning-for-Public-Health-FINAL-09-05-18.pdf>

**Purdue Extension Agricultural Land Protection in Indiana:** This resource discusses the development of agricultural land and several land use tools for its regulation, such as Purchase or Transfer of Development Rights. Available here: <https://www.extension.purdue.edu/extmedia/ID/ID-225.pdf>

**Purdue Extension Enhancing the Value of Public Spaces program:** This website presents an overview of the Enhancing the Value of Public Spaces program and how it can assist in both comprehensive and parks and recreation planning efforts. Available here: <https://www.cdext.purdue.edu/signature-programs/quality-places/enhancing-the-value-of-public-spaces/>

**Purdue Extension/Illinois-Indiana Sea Grant Conservation through Community Leadership program:** This curriculum and planning process assists communities in planning natural resource elements for comprehensive plans and other community-planning initiatives. Available here: <https://www.purdue.edu/fnr/extension/scep/programs/conservation-through-community-leadership/>

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