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Environmental Planning in Community Plans

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Indiana communities use several kinds of plans to help guide decisions about development, quality of life, and public safety. Comprehensive plans, parks and recreation plans, multi-hazard mitigation plans, and sub-area plans are conducted by local governments for these purposes. These plans, along with watershed management plans, include opportunities for addressing environmental concerns. This document provides examples of the connection between each type of plan and environmental planning, along with instructive examples from Indiana communities.

Although this document focuses on the connection between local government and watershed plans and their connections to environmental planning, several state and federal regulatory agencies also impact environmental planning. Some of the major agencies are discussed in this publication, and links to additional resources are provided.

Comprehensive plans

Comprehensive plans are policy documents that guide the physical development of a county or community. This type of plan is developed by a plan commission and its staff, or in collaboration with a planning consultant and input from various stakeholders. Once the plan is complete, it is adopted via resolution by the local legislative body. Plans can be updated or amended as needed through a similar process.

The geographic scope of a comprehensive plan may be an individual county, city, or town, or a county and one or more cities or unincorporated areas within that county. Indiana Code 36-7-4-502 requires that comprehensive plans contain three categories of objectives for their jurisdiction: future development; land use; and public ways, places, lands, structures, and utilities. Comprehensive plans establish a future land use map as a basis for addressing future development and land uses. The future land use map paints a broad picture of which areas will

be developed, what types of uses will be allowed, and which areas are to be preserved. Comprehensive plans may also contain short- and long-range development programs for infrastructure projects, capital improvements, and thoroughfares. Indiana statutes prescribe no other arrangement for comprehensive plans. This allows communities the ability to create a plan that meets unique needs.

Elements typically found in comprehensive plans
Future land use
Housing / neighborhoods
Economic development
Transportation
Utilities
Natural resources / open space / parks and recreation
Implementation

Relationship to environmental planning

Environmental planning has been defined by Daniels and Daniels as "the theory or practice of making interrelated decisions about the natural environment, working landscapes, public health, and the built environment." It is deeply intertwined with land use planning and most of the other elements usually found in comprehensive plans.

An early step in the comprehensive planning process is the analysis of current conditions and a determination of where development is desirable. In this step, natural features that may constrain developments are identified, such as soil inventories, wetlands, endangered species/habitats, slopes, and flood plains (Kelly and Becker, 2000). Using data about natural features, planners can delineate which areas are unsuitable for development. Additional development constraints, such as cultural, historic, or aesthetic significance, may be identified during the community engagement process as reasons to designate land for preservation. Planners develop policy alternatives for future growth by combining data on natural features with the qualitative feedback generated by the community, infrastructure capacity, transportation needs, and demographic and economic growth projections.

Examples of Indiana comprehensive plans
City of Bloomington
Delaware County
Hendricks County
Logansport
Pendleton
Tipton County
Valparaiso

References

Daniels, T., & Daniels, K. (2003). *The environmental planning handbook for sustainable communities and regions*. Chicago: APA Planners Press.

Kelly, E., Becker, B. (2000). *Community Planning: An Introduction to the Comprehensive Plan. Island Press*.

Transportation plans

Transportation is a common element found in comprehensive plans, but local and metropolitan planning organizations (MPOs) undertake more detailed analysis of a community's transportation needs and future requirements. The steps in transportation planning include needs analysis, visioning process, socioeconomic forecasting, travel demand assessment, and identifying gaps in the existing transportation network and areas of growth opportunities. Here, transportation network implies multi-modal, which includes motorized and non-motorized travel, freight movement through the region, air travel, public transportation and transit, inland containerization and warehouses, and river or sea ports as needed.

Transportation planning enables preparation of the transportation improvement program. Examples of improvement programs include analysis of freight movement and truck parking, last-mile delivery, trails and bicycle lanes to enhance non-motorized transportation, and other means of travel specific to the locality. From a high-level perspective, land use plans focus development in areas where it is desired, accounting for sensitive environmental characteristics that exist within the community. Research has established that land use and transportation are connected and affect each other. Hence, integration between land use and transportation planning is needed, though it is often overlooked. Transportation infrastructure such as interstates, state roads, and railroads are planned by federal and state governments, and also the private sector. These projects may affect local land uses, as transportation projects often catalyze development (Berke, Godschalk, Kaiser, and Rodriguez, 2006).

Relationship to environmental planning

The Delaware-Muncie Transportation Plan update, completed in 2018, lists eight factors set up by several federal transportation policy acts (linked in the resource section) that influence transportation planning. The fifth of the eight factors is "Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns."

The plan carries through within the goals and objectives of the plan. One goal references the environmental quality of downtown Muncie; an objective seeks to "increase intermodalism to promote energy and environmental conservation." The vast majority of the collected data focuses on quantifying and reducing vehicle emissions, as infrastructure project funding is tied to air quality at the federal level.

Another example of the connection between transportation planning and environmental planning is the NWI 2050 plan created by the Northwestern Indiana Regional Planning Commission. The NWI 2050 plan contains an analysis of the transportation network overlaid on sensitive environmental lands, reinforcing the link between transportation infrastructure and potential land use changes that may affect land use goals.

Environmental justice was analyzed in both plans by studying demographic characteristics. The NWI 2050 plan documents the locations of the following populations: minority, low-income, low English-proficiency, zero-car households, individuals with disabilities, residents over 65, veterans, and households with low or no data access (NIRPC, 2019). The NWI 2050 plan cites President Clinton's 1994 executive order that sought to minimize or mitigate adverse health and environmental effects on minority and low-income populations, ensure equitable participation in transportation decision-making, and ensure that project burdens and benefits are balanced so that burdens are not concentrated in low-income or minority areas (NIRPC, 2019). The Delaware-Muncie plan identifies fewer distinct populations but does specify which projects will occur in low-income and minority neighborhoods, and what benefits are expected. Transportation planning usually requires an air quality conformity assessment, especially if the jurisdiction is non-attainment in certain criteria air pollutants.

Resources

2018-2045 Delaware-Muncie Transportation Plan Update

Northwestern Indiana Regional Plan Commission NWI 2050 Long Range Transportation Plan

Plainfield, Indiana Thoroughfare Plan

State of Indiana Transportation Improvement Program (documents all state projects expected to be funded within the next five years).

References

Berke, Godschalk, Kaiser, Rodriguez. (2006). *Urban Land Use Planning. University of Illinois Press*.

Delaware-Muncie Metropolitan Plan Commission. (2018). *2018-2045 Delaware-Muncie Transportation Plan Update.*

Northwest Indiana Regional Planning Commission (NIRPC). (2019). NWI 2050 Plan

Multi-hazard mitigation plans

Multi-hazard mitigation plans (MHMPs) have the goal of reducing the impact of natural and man-made disasters. The Federal Emergency Management Agency (FEMA) requires MHMPs for counties to qualify for mitigation grant funding.

The components of a hazard mitigation plan include:

- Plan overview
- Documentation of the public planning process
- A community profile
- A risk assessment
- Goals, objectives, and strategies for Implementation

Relationship to environmental planning

Making decisions about where development is desirable and where it should be avoided is key to hazard mitigation. While hazards such as tornadoes and earthquakes cannot be avoided, development patterns can be guided to avoid and reduce flooding, and preserve ecosystem services. FEMA's Local Mitigation Planning Handbook advises that communities should "identify the most valuable areas that can provide protective functions that reduce the magnitude of hazard events," and "identify critical habitat areas and other environmental features that are important to protect."

In Indiana, MHMPs are coordinated at the county level by an emergency management agency and involve a broad range of government agencies. The State of Indiana has developed an MHMP that provides a total picture of natural and man-made hazards that affect communities in our state. FEMA's Local Mitigation Planning Handbook provides a list of partners that are recommended for hazard mitigation activities. That list is not exhaustive. Local emergency management agencies and planners may include representatives from key infrastructure, such as power facilities, hospitals, and school districts, or service organizations, such as the Red Cross, and mass transit providers.

Authority to regulate development
City Council/Board of Commissioners
Planning commission
Planning/community development
Regional/metropolitan planning
Special districts

Involved in hazard mitigation activities
Building code enforcement
Emergency management
Fire department/districts
Flood plain administration
Geographic Information Systems (GIS)
Parks and recreation
Public information office
Regional planning agency
Planning/community development
Stormwater management
Transportation (roads/bridges)
State Emergency Management Office

The Local Mitigation Planning Handbook outlines the following process for developing an MHMP:

1. Determine the planning area and resources
2. Build the planning team
3. Create an outreach strategy
4. Review community capabilities
5. Conduct a risk assessment
6. Develop a mitigation strategy
7. Keep the plan current
8. Review and adopt the plan
9. Create a safe and resilient community

Steps four through six present distinct opportunities to integrate environmental planning during the development of an MHMP. In step 4, planning groups can use an environmental scanning framework, such as PESTLE (political, economic, social, technological, legal, and environmental) to inventory the assets that can be used to respond to natural disasters.

Data about the environmental features of a community is inventoried and analyzed during the risk assessment (step 5.) The community's comprehensive plan can serve as a starting point for identifying environmental characteristics that could expose a community to natural hazards, and may also contribute in the next step of developing a mitigation strategy.

In step 6, plan commissions and local legislative bodies can assist in developing mitigation strategies via land use regulations that define where and how land is developed and how developments are approved. These bodies integrate consideration for natural hazards when identifying areas suitable for development in long-range comprehensive plans; when developing land use regulations, such as zoning ordinances (which shape the footprint of development); and when reviewing development plans.

Hazard mitigation strategies may include recommendations for zoning regulations. For example, limitation of development in flood plains through zoning controls, as shown in Allen County's MHMP, provides dual mitigating benefits of lowering direct impact of flooding on structures and reducing potential impact of floodwaters on downstream communities by slowing and spreading the conveyance. Johnson County's 2015 MHMP recommends promotion of low-impact development (LID) and using Leadership in Energy and Environmental Design (LEED) standards to reduce the impact of stormwater and mitigate flooding risk. During development of Clark County's MHMP, the Polis Center used a framework similar to PESTLE called STAPLE+E (Social, Technical, Administrative, Political, Legal, Environmental, Economic) to consider impacts of mitigation actions. The following table, taken from Clark County's MHMP, outlines the considerations for environmental strategies:

Table 54: STAPLE+E Planning Factors

S - Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and if they are compatible with the community's social and cultural values.
T - Technical	Mitigation actions are technically most effective if they provide a long-term reduction of losses and have minimal secondary adverse impacts.
A - Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
P - Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process and if there is public support for the action.
L - Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
E - Economic	Budget constraints can significantly deter the implementation of mitigation actions. It is important to evaluate whether an action is cost-effective, as determined by a cost benefit review and possible to fund.
E - Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, comply with federal, state, and local environmental regulations, and are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

Indiana examples of multi-hazard mitigation plans
Evansville-Vandenburgh County
Allen County
Johnson County
State of Indiana Multi-Hazard Mitigation Plan

References

The Polis Center. (2017). *Allen County All-Hazard Mitigation Plan*. https://www.allencounty.us/homeland/images/Allen_AHMP_Final_2017.pdf

River Hills EDD & RPC, The Polis Center. (2015). *Multi-Hazard Mitigation Plan Clark County, Indiana*. https://polis.iupui.edu/wp-content/uploads/2020/12/Clark-County-2015-MHMP-Final.pdf

Federal Emergency Management Agency. (2013). *Local Mitigation Planning Handbook*. https://www.fema.gov/sites/default/files/2020-06/fema-local-mitigation-planning-handbook_03-2013.pdf

The Polis Center. (2015). *Multi-Hazard Mitigation Plan Johnson County*, Indiana. http://co.johnson.in.us/wp-content/uploads/2016/06/Johnson-Coounty-Multi-Hazard-Mitigation-Plan-2015.pdf

Parks and recreation master plans and trails plans

The guidance for parks and recreation planning is directed by the Indiana Department of Natural Resources Division of Outdoor Recreation (IDNR-OR) process for a five-year master plan. A city, county, or township must have a park board established under Indiana Code as part of the parks and recreation master planning process. A park board and approved master plan enables eligibility for funds administered by the IDNR-OR (IDNR-OR, 2021).

The minimum elements of a parks and recreation master plan include:

- Introduction
- Goals and objectives
- Scoping – Features of entire community
  - o Natural landscape
  - o Man-made, historical, and cultural
  - o Social and economic factors
- Supply analysis
- Accessibility
- Public participation
- Needs analysis
- New and existing facilities location map
- Priorities and strategic action schedule

Relationship to Environmental Planning

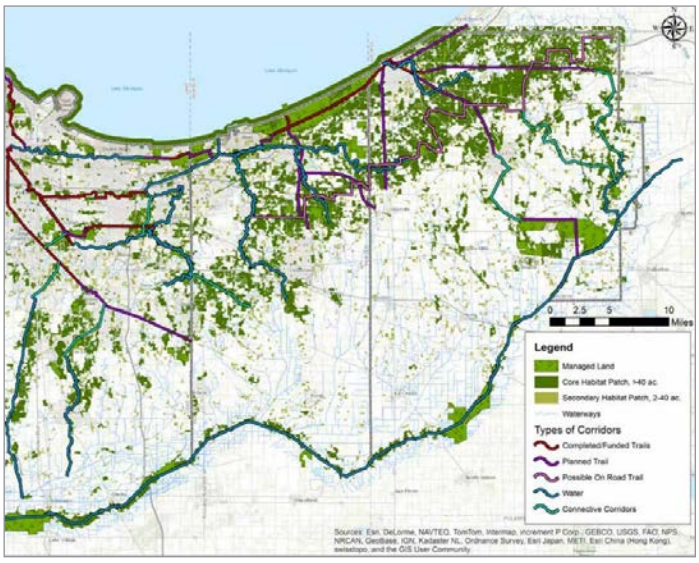
Developing a parks and recreation master plan provides multiple opportunities to incorporate environmental planning for conservation and outdoor recreation opportunities while thoughtfully connecting built environment features, such as trails, for active living. For example, the natural features and landscape element includes the entire planning area's natural features and a description of current and future potential uses. Identifying opportunities and impacts within the man-made, historical and cultural features provides an outline of where these amenities are located and their

relationship to park open space. Social and economic factors highlight the population density in relationship to parks, which has implications for access to green space. The parks and recreation facilities and programs element includes a description of current conditions, including management of open space, and also future land acquisition. Additionally, outdoor programs and making connections to environmental assets within the parks system is part of this element.

When addressing accessibility within parks and recreation from an environmental planning lens, consider access to natural features, boat launches, and other outdoor amenities. Continue to research and incorporate new technologies, innovations or inventions that may be used to improve accessibility (IDNR-OR, 2021). When conducting public participation efforts for the parks and recreation planning process, incorporate questions and opportunities to focus on natural features within the parks system, such as lakes, streams, wetlands, prairies, tree plantings, and pollinator plantings. Topics for feedback and discussion can include management, access, protection, recreation, education programs, and future plans that may impact these features, both positively and negatively.

Natural resource considerations are included in parks and recreation master planning due to the physical location of parks, but the depth and breadth of natural resource management and planning can vary. With a focused effort, natural resources can be a more prominent feature of a parks and recreation master plan while still meeting all planning requirements.

Northwest Indiana Regional Planning Commission's 2020 Greenways + Blueways plan addresses use of natural areas for recreational trails and water activity. This plan blends concepts of conservation, recreation, and transportation for the conservation and benefit of natural habitats and those that use them. The map below, taken from the 2020 Greenways + Blueways plan, shows how Greenways and Blueways align with several types of prioritized lands.



NIRPC 2020 Greenways + Blueways Plan

Examples of Indiana parks and recreation master plans

City of Columbus Parks and Recreation System Master Plan

Hendricks County Parks and Recreation Five Year Comprehensive Master Plan

Porter County Parks and Recreation Comprehensive Mater Plan

Richmond Parks and Recreation Master Plan

Greenways + Blueways Northwest Indiana regional plan

References

IDNR-Division Of Outdoor Recreation. (2021). Park Planning Information and Guidelines. https://www.in.gov/dnr/outdoor-recreation/planning/park-planning-information-and-guidelines

Sub-area plans

Sub-area plan is a broad term referring to plans for multiple purposes and geographic scales. They may also be recognized as district plans, small area plans, corridor plan, or similar. Sub-area plans focus on part of a community due to its unique characteristics or potential. Often this is a neighborhood, a community gateway, or an area with unique environmental concerns. Blight, historical or cultural significance, and potential for development are all reasons for initiating a sub-area plan. Sub-area plans can also address a region defined

by an issue, such as the urbanizing areas at the fringe of a community, or the area around a planned transit station. Sub-area plans exist within the framework of the comprehensive plan and zoning ordinance, and follow a process similar to comprehensive planning – with some notable differences.

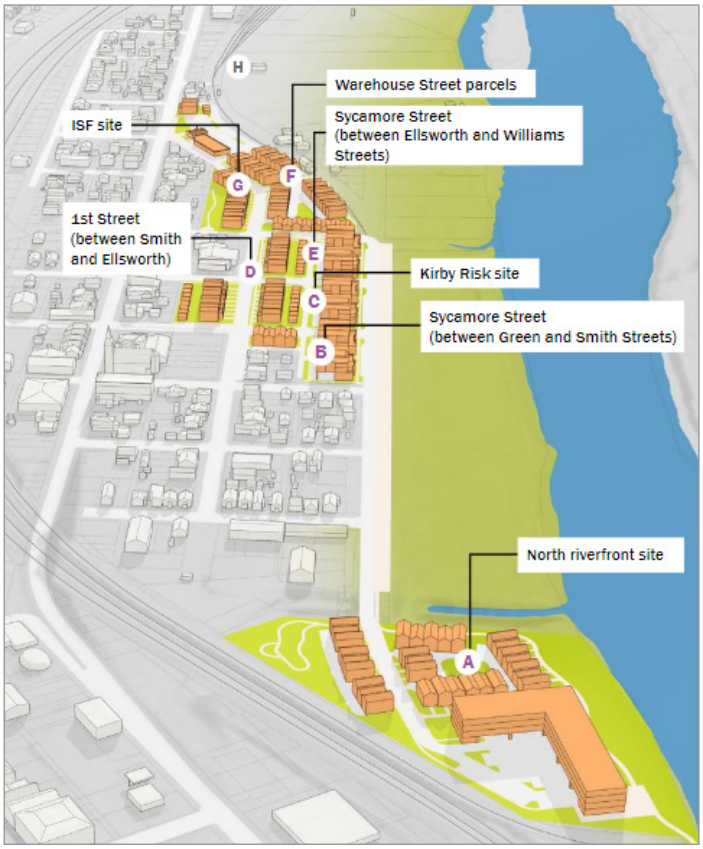
Relationship to environmental planning

The hallmark of a sub-area plan is a greater emphasis on engagement with stakeholders within the focus area. The components of a sub-area plan, such as goal identification, analysis of existing conditions, and implementation recommendations via policies and regulatory changes, are similar to comprehensive plans.

Again, the difference lies in specificity. Recommendations for specific projects or actions are found in sub-area plans along with detailed analysis of information related to the specific issue at hand. For example, a sub-area plan focused on future development will consider issues that limit or contribute toward development. Local planning departments may conduct sub-area plans or collaborate with stakeholders, consulting planners, landscape architects, and engineers. These entities lead a planning process whereby community stakeholders can identify opportunities to implement stormwater management via installation of green infrastructure, understand flood plains and their impacts, and identify natural resource assets for conservation, such as prime farmland or species habitat.

Because many sub-area plans focus on potential development, environmental characteristics that impact the ability to develop land, including slopes, soils, wetlands, and stormwater drainage, will be analyzed. Other non-environmental characteristics, such as historical development patterns and access to infrastructure, are also important. Planners rely on several types of plans as resources for existing conditions. Reference documents include watershed plans, thoroughfare plans, multi-hazard mitigation plans, capital improvement plans, and GIS data.

The Wabash Neighborhood Community Enhancement Plan in Lafayette, Indiana, is an example of how intensive stakeholder engagement was used to develop a neighborhood plan tailored to the specific issues of a sub-area of the city. The plan focused of revitalizing a disconnected portion of the community that has seen disinvestment. The potential for development was identified by the city because of its location near downtown and proximity to the Wabash River. Over several months, consultants, city staff, neighborhood businesses and residents, major land owners, and nonprofits met and discussed existing conditions, assets and opportunities, and vision setting, and developed an implementation matrix. In this example, the Wabash riverfront was the most significant natural asset. Community input drove the concept of a riverfront activated through recreation, featuring river overlooks, trails, enhancing the history of the Wabash and Erie Canal, open space, kayak launches, and a stormwater park – thus promoting environmental stewardship, active living, and economic revitalization of the neighborhood.



Detailed plans at the block level differentiate sub-area plans from comprehensive plans, as shown in MKSK's Wabash Neighborhood Community Enhancement Plan (2020).

Examples of sub-area plans, their scope, and purpose

Community	Geographic focus	Goal
Monroe County	Urban fringe	Ensure that growth in urbanizing fringe improves quality of life and place, supports economic development, and that vulnerable lands are protected
Wabash Neighborhood	Neighborhood	Guide revitalization/ redevelopment
Hendricks County	Prime greenfield development site	Plan for access, development, and open space
Johnson County	I-69 corridor	Manage traffic impacts, improve access, establish development guidelines for interchange developments to serve as gateways

References

City of Lafayette, MKSK. (2020). *Wabash Neighborhood Community Enhancement Plan*. https://issuu.com/mksk/docs/wabash_neighborhood_enhancement_plan_-_report

Watershed plans

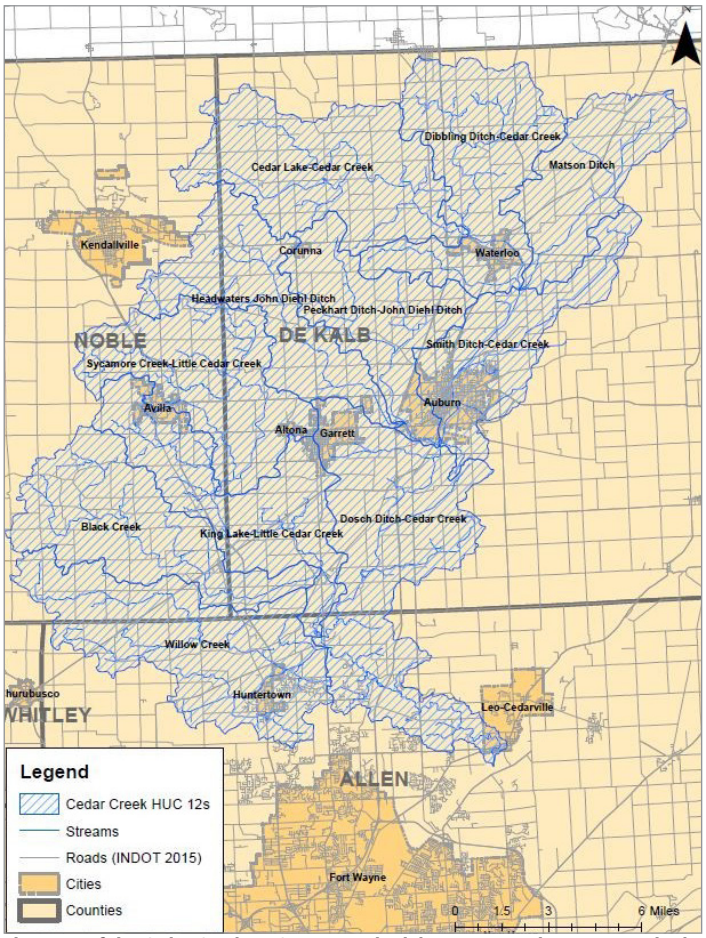
Watershed planning is a process used to solve water quality issues within the geographically defined area of a watershed. The product of a watershed planning process is a watershed management plan. The Environmental Protection Agency (EPA) has outlined nine minimum elements necessary for a watershed plan to qualify for funding through its Section 319 grant program, which funds implementation of the watershed management plan's strategies.

1. Identify causes and sources of pollution
2. Estimate expected load reductions
3. Describe management measures and targeted critical areas
4. Estimate technical and financial assistance needed
5. Develop an information and education component
6. Develop a project schedule
7. Describe interim, measurable milestones
8. Identify indicators to measure progress
9. Develop a monitoring component

The Indiana Department of Environmental Management (IDEM) describes each of these elements in its Handbook for Development Watershed Plans, available here.

Relationship to environmental planning

Watershed groups organize to address water quality issues in their watershed. These groups are composed of nonprofit organizations, interested residents, local leaders, and representatives of relevant departments in the local government jurisdiction or jurisdictions, and in some cases dedicated staff who organize the process, develop relationships, and write the plan.



This map of the Cedar Creek HUC 10 watershed demonstrates how a watershed management plan will require coordination between three counties and several smaller jurisdictions for implementation. (Map produced by Daniel Walker)

Watershed plans focus on non-point source pollution issues that degrade water quality within a watershed. Non-point sources of pollution include excess fertilizer, sediment, and chemicals from urban areas that are carried into streams, lakes, and rivers by runoff (EPA, 2021). Watershed groups conduct a watershed inventory to identify which non-point pollutants are of concern, and what best management practices are most appropriate and cost-effective to address them. The Deer Creek-Sugar Creek Watershed Management Plan developed by Carroll County Soil and Water Conservation District and the Wabash River Enhancement Corporation in 2015 contains an extensive study of past, current, and potential future land use in the watershed, including analysis of industrial land uses and confined animal feeding operations (CAFOs).

Watershed management plan examples

Deer Creek – Sugar Creek Watershed Management Plan

Upper St. Joseph River Watershed Management Plan

References

Carroll County Soil and Water Conservation District, Wabash River Enhancement Corporation. (2015). Watershed Management Plan for the Deer Creek-Sugar Creek Watershed. https://www.in.gov/idem/nps/resources/watershed-management-plans/st-joseph-upper-wmp-2-16/

United States Environmental Protection Agency. (n.d.). *Basic Information about Nonpoint Source (NPS) Pollution*. https://www.epa.gov/nps/basic-information-about-non-point-source-nps-pollution

United States Environmental Protection Agency. (n.d.). *Introduction to Watershed Planning*. https://cfpub.epa.gov/watertrain/pdf/modules/Introduction_to_Watershed_Planning.pdf

United States Environmental Protection Agency. (n.d.). *Polluted Runoff: Nonpoint Source (NPS) Pollution.*

Select state and federal policies impacting environmental planning

Certain aspects of transportation planning and projects involving federal funds may fall under any of several pieces of federal or state environmental legislation. Some of the most notable are linked here:

Clean Air Act

Clean Water Act

Executive Order 12898

Indiana State Wildlife Action Plan

National Environmental Policy Act (NEPA)

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