

Changing Landscapes

Land use planning curriculum for natural resource professionals

- P** rinciples, people, and policies
- L** and planning and pressures
- A** pproaches
- N** atural resource planning tools

N2: Comprehensive Planning for Natural Resource Conservation

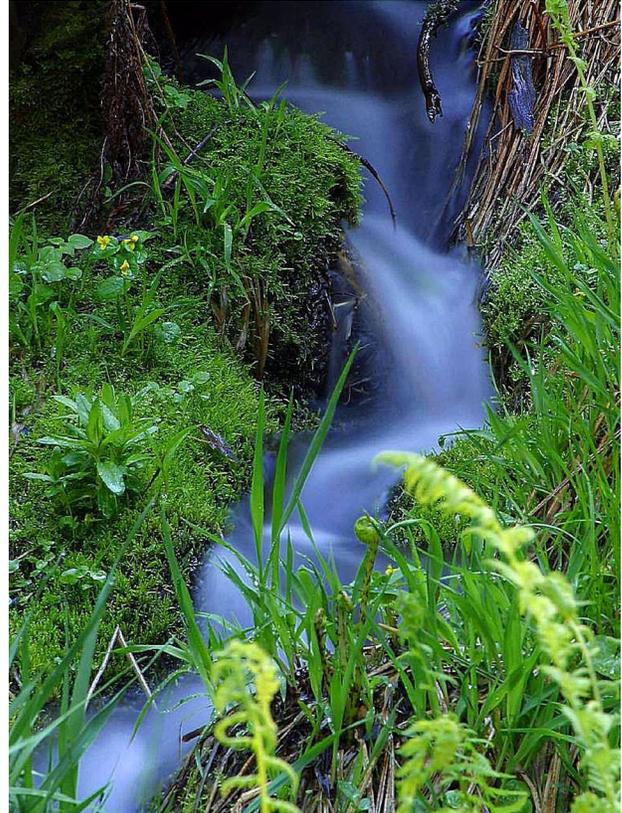
Overview

This factsheet provides an overview of comprehensive planning. It explains the tools and processes required for comprehensive planning and discusses the benefits of protecting natural resources.

What is Comprehensive Planning?

Planning can be described as “a comprehensive, coordinated, and continuing process, the purpose of which is to help public and private decisionmakers arrive at decisions that promote the common good of society” (Whitehall Township Planning Commission 2004). Planning attempts to better organize a place that is complex, interrelated, and changing. It involves using information to provide the most rational and efficient strategies about land use, human and environmental health, economic development, and other components of a community. Comprehensive planning attempts to understand and guide community development and change in order to eliminate or reduce the negative and accentuate the positive qualities of community life. Comprehensive planning involves many important elements:

- State support and empowerment of municipal and county planning efforts through court decisions, enabling legislation, and technical and financial assistance.
- A comprehensive view of a place and the ability to put many elements of community life together while dealing with economic and other change.
- Valid economic, social, and environmental information to develop a comprehensive plan that guides future growth and investment.
- Police power regulatory tools (zoning and land development ordinances) and nonregulatory tools (developer incentives and public purchase) to carry out the comprehensive plan.
- Review and modification of development proposals in relation to the comprehensive plan as well as other factors, including zoning and other regulations, public sentiment, and coordination of municipal departments and functions.



Comprehensive planning tools can be used to protect natural resources.



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- Elected officials, developers, and civic leaders who understand and support the benefits of comprehensive planning.
- The review, modification, variance, and appeal of development decisions and policies.

The Planning Process

Planning processes are commonly used to develop plans and policies as well as in ecosystem management and other management scenarios. Depending on the situation, conflict resolution tools such as facilitation may be required to move planning forward. One example of a planning process is the Model for Rational Decision Making, which has these components:

1. Formation of the planning group, including all people interested, important, and impacted.
2. Mutually agreed-upon identification of problems and opportunities.
3. Greater understanding of issues through research and information gathering and analysis.
4. Use of group techniques such as brainstorming to develop goals and objectives for alleviating problems and optimizing opportunities.
5. Use of group techniques to develop alternative strategies and actions to attain agreed-upon goals and objectives.
6. Use of cost/benefit and other analyses to prioritize and choose appropriate strategies and courses of action.
7. Evaluation of strategies and actions taken in terms of progress towards goals and objectives.
8. Adjustment of goals, objectives, strategies, and actions. If done in a timely fashion, the last two elements—evaluation and adjustment—are the basis for adaptive management.

Planning Reduces Municipal Costs

Comprehensive planning reduces the costs of change and development for a municipality. It seeks to shift some of the costs from the municipality to the people and organizations investing in community development. Comprehensive planning can influence four types of costs:

1. **Direct costs.** These involve issues that require public revenues to manage or correct, including problems with stormwater and flood control, wildfire, and steep-slope development.
2. **Indirect costs.** Depending on the size and demographic makeup of development (for example, a housing development with many children), the costs of public services (education, police, health care, social services, and roads) can exceed revenue from property and other taxes.
3. **Loss of value.** This involves issues that cause public and private property values to depreciate. An example is the negative impact on the property value of single family homes if a large industrial development is placed next to them. Conversely, careful planning and proper regulatory policy can preserve and increase property values.
4. **Failure to secure private investment.** Well-planned communities attract business and people and their financial and human investments.

Comprehensive Planning and the Environment

Today, impacts such as fragmentation, isolation, and destruction of natural resources by sprawling suburban and rural development and unguided land use are a great concern. The old development philosophy of find it, fill it, and move on is now widely rejected as



A comprehensive plan is a powerful tool to incorporate healthy natural systems into community growth and development.

dysfunctional. Poor planning and development can degrade the ecosystem processes and services provided by forests, streams, and wetlands. In addition, there are the potential costs of environmental hazards such as fire and flood. Given the localized nature of planning in the United States, individual and multimunicipal use of comprehensive planning is a powerful tool to preserve and incorporate productive and healthy natural systems into community growth and development.

The impacts of fragmentation, isolation, and destruction of natural resources by sprawling suburban and rural development and unguided land use are a great concern.

Environmental Planning

Environmental planning is the theory and practice of making sound, interrelated decisions about the natural environment (open space, wildlife, air and water, and fire and other natural hazards); working landscapes (water, farm, and forest); and the built environment (parks, greenways, and open space). Important concepts include using natural resource inventories; considering the environment in comprehensive plans and zoning; preserving sensitive and productive natural areas; placing development in places that are less environmentally sensitive; and planning and designing to bring people together in the best relationship with each other, development, and the environment.

What is Green Infrastructure?

Green infrastructure is the interconnected network of natural areas that conserves natural ecosystem processes and functions. Connectivity is the key. It is the ecological framework for environmental, social, and economic health and the framework for both development and resource conservation. It should be planned for and financed like roads, utilities, and other community infrastructure.

Challenges for Planning to Conserve Natural Resources

Despite the promise, there are many constraints on the ability of planning and regulatory policy to conserve natural resources:

- The autonomous history and nature of planning and regulatory policy by municipalities. Wildlife habitat, streams, watersheds, and other environments typically do not match municipal boundaries. Environmental planning by individual municipalities is usually at too small a scale to be effective.
- Smaller, more rural places under new and intense development pressure often do not have the resources or capacity to plan when rapid change occurs. Planning is reactionary.
- Some States do not require municipalities to complete comprehensive plans; if they do, they may not require municipalities to consider natural resources.
- Natural resource inventories are often not completed at municipal or larger scales.
- Sometimes, zoning and subdivision and land development ordinances work against resource conservation by not allowing such practices as clustered density or flexible lot sizes, setback distances, and street width.
- Generally, most citizens and municipal leaders do not clearly understand or appreciate the economic and human health values of ecosystem processes and services provided by natural resources.
- With working families, long commutes, and other conditions of modern life, there is a trend of citizen apathy towards growth and development until a threat is imminent—when the bulldozers are in the forest. By this time, it is often too late to have any substantial impact on an approved development. That's one reason why it's so important to perform comprehensive planning that sets regulatory policy well in advance.

What Makes a Comprehensive Plan?

A comprehensive plan is a growth management plan that incorporates many things—community input, background information, cost/benefit analyses and other studies, and assumptions about future change—to create policies and strategies for community development and investment. It attempts to identify and demonstrate a community’s future economic, social, and environmental desires. A comprehensive plan also provides logical and legal justifications and purposes for using police power authority such as a zoning ordinance. It attempts to rationalize the use of zoning and other growth management tools well in advance of sometimes uncertain change.

There are many continuing interactions in communities such as new homes, roads, water supply, and recreation.

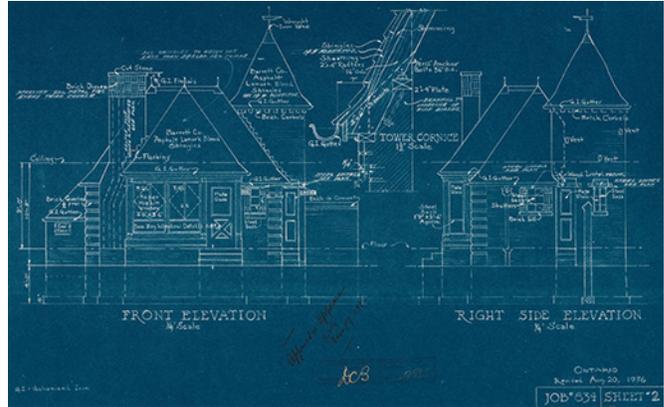
There are also many internal and external forces that impact communities such as natural disasters, national and global economies, and the price of oil and gas. A comprehensive plan is not a blueprint for future development. It is a scenario to help organize the many elements of community development in a dynamic and changing world.

Many States require municipalities and counties to amend their comprehensive plans every decade or so. Communities are dynamic; plans are often static. To help make plans as dynamic as possible, many planners recommend that planning commissions pick and discuss important and changing issues such as traffic, education, and public safety each year and make changes to policy and strategies in light of change.

Communities are dynamic; plans are often static. Pick and discuss important and changing issues each year and make changes to policy and strategies as needed.

There are three important sections in a comprehensive plan. **Background Information** provides a general understanding of a community by describing its environmental, cultural, historic, economic, and other important features. **Goals, Objectives, and Policies** relate those features to a **Vision** for the future development of the community. **Plan Chapters (Elements)** discuss in detail the pieces of community development such as land use, transportation, community facilities, and resource conservation.

Comprehensive plans have a number of common elements. The **Land Use** chapter uses text and maps to show current and future land uses such as residential, commercial, industrial, agricultural, and forest. Land use maps are the basis for understanding current and future growth and enacting a municipal zoning ordinance. Zoning is not planning; it is a tool to carry out planning. The **Transportation** chapter discusses and shows all major transportation systems, including roads, bus routes, bike paths, and greenways, and how they are connected and coordinated. The **Community Facilities** chapter addresses the need for and location of schools,



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The Transportation chapter of a comprehensive plan shows all major transportation systems, including bike paths.

fire stations, libraries, parks, and sewer and water services. This is especially important because development often follows the provision of water, sewer, and transportation infrastructure; it is these elements that can be used to shape the location and velocity of future growth. **Energy Conservation** discusses the use of building materials, solar access, transportation, recycling, energy audits, and other energy efficiency measures. **Capital Budget**, a crucial element of any plan, outlines the public and private investment required to fund facilities and programs.

Communities can use water, sewer, and transportation infrastructure to shape the location and velocity of future growth.

The first step in protecting open space, water, wildlife habitat, productive forests, and other resources is to consider these environmental features in the comprehensive plan. If these features are not discussed in the plan, they will most likely not be adequately considered in capital budgeting, regulatory policy, or development review.

Comprehensive plans have a number of common environmental chapters. **Urban Forestry** discusses using trees to mitigate stormwater and other impacts, tree canopy coverage and coverage goals, tree risk assessment and management, policies and strategies to support public tree planting, tree maintenance and removal, and the use of volunteers and partners. **Conservation** typically identifies such features as riparian areas, steep slopes, ridgelines, and wetlands, and discusses the ecosystem services they provide, the importance of conserving those features, and regulatory tools that can be used to conserve them. **Viewshed** addresses using zoning and development design to protect ridgeline, lake shore, and other important views in and out of a community. **Open Space** addresses such things as existing preserved space, natural areas desired for preservation, connection of areas, prioritizing the acquisition of future areas, using regulatory and nonregulatory strategies such as zoning and bond issues for acquisition, and management tools such as multiple-use trails and docent programs.



The Conservation chapter of a comprehensive plan identifies features such as wetlands. (Photo: <http://www.epa.gov>)

Wildfire Management considers using zoning, building codes, and landscape ordinances to reduce fire risk and increase defensible space. This chapter may also consider including fire protection agencies in subdivision and other development review, the capacity and coordination of fire agencies in fire risk reduction and suppression, water supplies, using strategies to reduce fuel such as controlled burning and vegetative removal, and public education about fire prevention and the possible need for controlled burning and other controversial tools.

Stormwater discusses the costs of managing stormwater and using structural and nonstructural tools such as bioretention basins and clustered development to lower stormwater amounts and costs. **Forest and Landscape Stewardship** discusses techniques to bring people together to address preserving productive forests and other natural resource issues of mutual concern. This chapter can provide a common vision and strategies for natural resource conservation, discuss partnerships and other tools for coordination, identify regulatory and nonregulatory implementation strategies, and outline tools for monitoring and evaluating environmental quality.



The Stormwater chapter of a comprehensive plan discusses using tools such as bioretention basins to capture stormwater runoff.

Duties and Powers of Planning and Other Commissions

Although planning and other commissions can be given authority by elected officials to approve subdivision and other development plans, they most often serve as a vehicle to ensure that the viewpoints and concerns of citizens are considered and to advise elected officials about proposed and future development. Typical duties and authorities of planning commissions include preparing and reviewing the comprehensive plan; preparing and amending ordinances (e.g., zoning, subdivision and land development, and planned residential development); promoting public support and understanding of the planning process; holding public hearings and presenting testimony; and preparing environmental, water, and other studies. In many States, the planning commission administers municipal subdivision and land development ordinances by reviewing and commenting on development proposals. In fact, a common complaint from planning commissioners, especially in smaller municipalities, is that they do not plan for the future, but rather only review subdivision and other development proposals.

Zoning hearing boards often serve as an appeals board for decisions made by the municipal zoning officer. Environmental advisory councils advise elected officials on environmental programs and the conservation and purchase of open space. Tree commissions administer a municipality's street and park tree ordinance; oversee the activities of a community tree program; and act as an adjudicatory or appeals board for public tree planting, pruning, and removal permits.

Multimunicipal and Regional Planning

Cooperation among multiple municipalities to manage water and sewer, police and fire, recreation, library, and other services is common in the United States. This is done by forming legal entities called "authorities," which provide more efficient administration as well as wider service areas and revenues. Authorities can also often raise bond and other funding based on their own earning potential, separate from individual municipal debt limits. Although authorities are common, multimunicipal/regional planning and zoning are not.

The merits of regional planning have been advocated since the creation of the American Regional Planning Association in the 1920s by Lewis Mumford and others. These merits include better environmental planning and preservation, better planning for fire and other environmental risks, better planning for recreation and other public services, better siting and connection of land uses, increased ability and efficiency in administration, and increased funding opportunities.

Although there are some notable success stories (for example, the Tahoe Regional Planning Commission in California that works with municipalities and counties in two States to protect the water quality of Lake Tahoe through development, wildland fire, and other policy), regional planning continues to be problematic for a number of reasons:

- Elected officials are elected to serve only a certain municipality.
- Weaker municipalities may not receive their fair share of commercial and other desirable land uses.
- Municipalities with historical friction and animosities will not work together.
- Municipalities could be forced to share tax revenues from commercial and other development.



*Regional planning has been championed since the American Regional Planning Association was created in the 1920s.
(Photo: San Jose State University Urban & Regional Planning)*

To address those concerns, some States have authorized multimunicipal planning in their planning codes. As an example, the Pennsylvania Municipalities Planning Code provides authority for multimunicipal planning and zoning. Basically, one or more municipalities are authorized to carry out a joint comprehensive plan and to enact, amend, or repeal joint zoning. Multimunicipal zoning must be based on a joint comprehensive plan developed by a joint planning commission. Both the joint plan and zoning ordinance must be adopted by vote of the elected officials in each of the cooperating municipalities. The entire area within cooperating municipalities must be zoned, although the municipalities can either form a joint zoning hearing board or keep separate hearing boards.

In Pennsylvania, multimunicipal planning and zoning can also be established by Intergovernmental Cooperative Planning and Implementation Agreements between municipalities. These formal agreements are highly negotiated, with all regulatory authorities and financial obligations and gains clearly spelled out for each partner. Multimunicipal plans established through these agreements may do any or all of these things:

1. Zone for or accommodate all recognized land uses within the jurisdiction of the agreement, not just within individual municipalities.
2. Designate and regulate development with area-wide significance.
3. Establish provisions for sharing tax revenues.
4. Designate and regulate growth or service limitation areas.
5. Designate and regulate area-wide conservation of historic and natural resources.
6. Establish “transfer of development” rights between slow, low-density growth areas like rural resources and faster, high-density growth areas.

Communities in Pennsylvania can engage in multimunicipal planning through either the authority they receive from the Pennsylvania Municipalities Planning Code or by establishing an Intergovernmental Cooperative Planning and Implementation Agreement with other municipalities.

Case Study – Lancaster County, Pennsylvania Smart Growth: Conserving Natural Resources

In the 1980s and 1990s, Pennsylvania's Lancaster County experienced high rates of development and growth. Today, managing that growth, which includes conserving natural resources, is an important planning function.

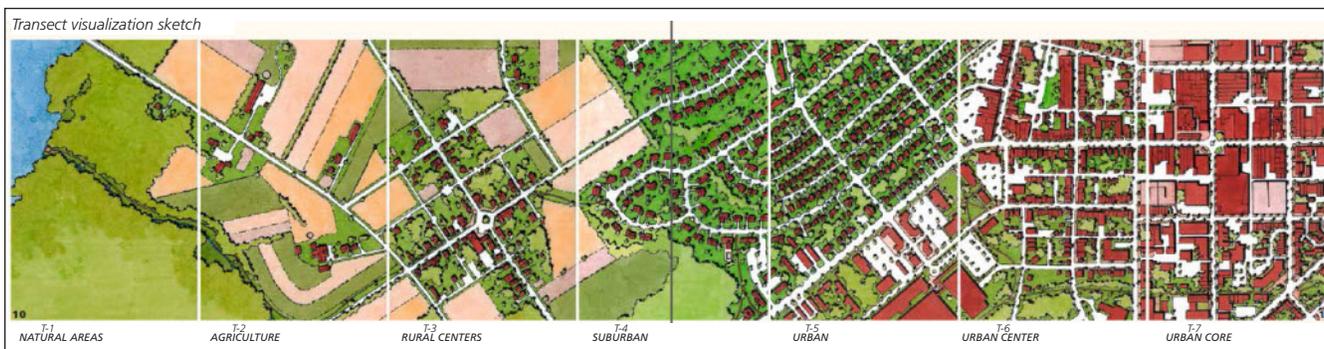
Two of Lancaster County's comprehensive plan elements call for zoning language that will strengthen natural resource conservation and enhancement. The plan's Growth Management Element (*Balance*) states a need for environmental ordinances, in part to carry out the goals and policies of the county's Rural Strategy, which seeks to focus new development in already developed areas. The greatest emphasis on natural resource conservation comes from the plan's Green Infrastructure Element (*Greenscapes*), which recommends environmental protection standards to support the comprehensive plan's green infrastructure goals.

County planners consider the protection of woodlots and other individual natural resources, in addition to entire landscapes, in a holistic approach to resource planning and conservation. Large-scale, restrictive use zoning is advocated to conserve riparian areas and other larger contiguous landscapes of natural importance. However, many individual resources are woven throughout urban, suburban, and rural areas alike, necessitating protection standards that apply wherever natural features exist.

Following success with both agricultural and conservation subdivision zoning, the Lancaster County Planning Commission has developed two zoning tools for municipalities to consider integrating into existing zoning ordinances: a collection of *Natural Resource Protection Standards* and the *Model Conservation Zoning District*. Both are focused on incorporating natural resource assessment and protection into subdivision and other development proposals through site-specific design and performance standards.

The *Natural Resource Protection Standards* contain a broad list of resource types discussed in *Greenscapes*. Assessment criteria and protection standards are provided for forest blocks and interior forests, karst topography, natural heritage areas, riparian corridors, steep slopes, highly erodible soils, unique geologic features, and wetlands. A municipality can use the protection standards to help conserve specific resource types throughout its boundaries. The *Model Conservation Zoning District* is useful for carrying out planning goals in larger scale, distinct landscapes.

Ideally, a municipality's use of both the underlying conservation district and the natural resource protection standards will result in both broad and targeted conservation benefits, respectively. As an example, increasing emphasis on improving Lancaster County's water quality requires regulatory and voluntary measures in both urban and rural settings. Conservation of larger connected features like riparian corridors and wetlands, as well as protection and enhancement of more isolated forest blocks, plays a vital role in restoring surface and groundwater resources.



The Lancaster County Planning Commission began a project to help people visualize the seven different types of development that are included in their comprehensive plan. (Illustration: Lancaster County Planning Commission 2013 Annual Report)

For more information about planning efforts in Lancaster County in 2013, visit this Web site:
<http://pa-lancastercountyplanning.civicplus.com/documentcenter/view/262>.

Relevant Factsheets

P5 – *Principles of Ecosystem Services* – Planning will protect ecosystem processes and increase the values of the services they provide.

L2 – *Scales of Planning: From Landscapes to Ecosystems* – Provides an overview of different levels of planning and discusses past and current drivers that have influenced scales of planning.

L3 – *How Planning is Put into Practice* – Further explains the role of planning commissions and how planning practices vary from State to State.

A1 – *Using Smart Growth Principles to Plan Sustainable Communities* – The comprehensive plan should express the tools and concepts of smart growth.

N3 – *Regulatory Approaches to Protecting Natural Resources* – The comprehensive plan provides a logical basis for regulatory tools. These tools are used to carry out the comprehensive plan.

N4 – *Nonregulatory Approaches to Natural Resource Conservation* – The comprehensive plan should discuss capital budgets, citizen education, and other nonregulatory approaches.

Resources

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