Planning Commission,
Planning Board and Board of
Appeals Education Course

Developed pursuant to Section 1-206 of the Land Use Article, Annotated Code of Maryland.

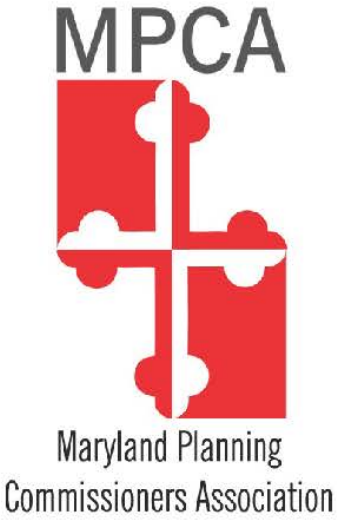
Module Four: Planning 201: Environment, Green Development, Housing and Transportation

MPCA
Maryland Planning Commissioners Association

Maryland
DEPARTMENT OF PLANNING

Planning Commission, Planning Board and Board of Appeals Education Course

Developed pursuant to Section 1-206 of the Land Use Article, Annotated Code of Maryland.



Planning Commission, Planning Board and Board of Appeals Education Course

Welcome!

I am pleased to welcome you to the online Planning Commission, Planning Board and Board of Appeals Education Course, which was developed by the Maryland Department of Planning so that members of planning boards or commissions and boards of appeal can fulfill their education requirements under Section 1-206 of the Land Use Article, Annotated Code of Maryland. This requirement first came about through passage of Smart and Sustainable Growth Act of 2009, which implemented the requirement that, within six (6) months of appointment, members of local planning boards or commissions and boards of appeal complete an education course concerning certain aspects of land use planning.

This education requirement applies to the non-charter counties and municipalities that exercise planning and zoning authority, and to charter counties, including Montgomery and Prince George's counties. The law provides that the course must include education on (i) the role of the comprehensive plan, (ii) proper standards for special exceptions and variances, as applicable, and (iii) the jurisdiction's zoning, planned development, subdivision and other land use ordinances and regulations.

This course was developed with input from 2007's Task Force on the Future of Growth and Development, and your partners in planning policy and implementation including the Maryland Association of Counties (MaCo), Maryland Municipal League (MML), Maryland Planning Commissioner's Association (MPCA) and others. This joint effort has resulted in the course you are about to take, and we hope you find it informative, useful and beneficial in your important role as a planning official.

Our goal is to provide good information to help you make even better informed planning decisions for your city, town or county I welcome and encourage your feedback on this course, and if you have any suggestions after completing it, please feel free to pass them along.

Enjoy the course!

Sincerely,

Rebecca L. Flora, AICP, LEED ND/BD+C
Secretary, Maryland Department of Planning

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Environment, Green Development, Housing and Transportation

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Critical Areas, Stormwater Management & Forest Conservation

Critical Area Law

The following information is excerpted from BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008. To download the publication, go to: http://www.dnr.state.md.us/criticalarea/

Purpose

The Critical Area Law and Criteria were developed in 1984 in response to serious and far-reaching problems affecting Maryland's water resources. Like any law or regulation directed towards "solving" a complicated problem, the Critical Area Law and Criteria are a comprehensive, complex and detailed body of legislation and regulations.

The Law and Criteria were designed to foster more sensitive land use and development activity along the shoreline of the Chesapeake Bay, Atlantic Coastal Bays, their tributaries, and tidal wetlands and to ensure the implementation of appropriate long-term conservation measures to protect important habitats (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 11).

Defining the Critical Area

The drafters of the law recognized that the land immediately surrounding the Chesapeake and Atlantic Coastal Bays and their tributaries has the greatest potential to affect the water quality and wildlife habitat of these resources.

Therefore, all lands within 1,000 feet of the edge of tidal waters, or from the landward edge of adjacent tidal wetlands, and all tidal waters and lands under those waters and wetlands were designated as a "Critical Area" (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 14).

Goals

The law stated that each local jurisdiction had the responsibility for developing and implementing its own Critical Area program that would be sufficiently comprehensive to accomplish the following overall goals for the State:

- Minimize adverse impacts on water quality that result from pollutants that are discharged from structures or conveyances or that have runoff from surrounding lands.
- Conserve fish, wildlife, and plant habitat in the Critical Area.
- Establish land use policies for development in the Chesapeake and Atlantic Coastal Bays Critical
- Area which accommodate growth and also address the fact that even if pollution is controlled,
- the number, movement, and activities of persons in an area can create adverse environmental impacts (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 15).
- These original goals are included in every jurisdiction's Critical Area program and function as the cornerstone of the Critical Area Criteria and all related regulations. These goals also serve to guide Critical Area decision-makers, including the Critical Area Commission, local government officials, and State regulatory agencies, to ensure that the Program is effectively implemented (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 15).

Local Critical Area Program Implementation

In general, for all Critical Area development activities on private lands or lands owned by a local government, the local planning and zoning department is the primary agency responsible for reviewing and approving building permits, site plans, and subdivision plans. The local governments review these plans for consistency with their ordinances and regulations. Before approvals may be issued, the local permitting authority must ensure compliance with requirements for impervious surfaces, forest clearing, habitat protection and stormwater management, among other factors.

Many local jurisdictions have streamlined review processes for minor development activities. The Critical Area Commission performs an oversight role with respect to local review of projects. Subdivision plans, site plans, variance applications, requests for special exceptions, conditional use permits, and rezoning requests are forwarded by local governments to the Critical Area Commission for review and comment by the Commission's staff. Comments and recommendations on these projects are provided to the local government by the Commission in order to aid the local government in the decision-making process (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 23).

Many Critical Area development proposals involve significant disturbance to water and forest resources and can require considerable time to review. The Commission works cooperatively with local enforcement officials to assist them in effectively administering and implementing their local Critical Area regulations. In certain instances, local governments or a citizen may request assistance from the Commission in determining if a particular situation is a violation or in pursuing a violation. The Commission's staff of natural resource planners is available to provide the assistance necessary to ensure that local programs are properly, fairly, and effectively enforced.

In 2004, the Critical Area Law was amended to allow local governments to request assistance from the Office of the Attorney General through the Critical Area Commission to provide assistance in pursuing and remediating serious violations (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 23).

Maps as a Basic Component of Local Programs

To implement the Law, each local jurisdiction was required to map its Critical Area boundaries and to designate existing land uses as one of three classifications. Except for land owned by the State or federal government, all land areas within the Critical Area were designated as Intensely Developed Areas (IDAs), Limited Development Areas (LDAs), or Resource Conservation Areas (RCAs).

These designations were based on land uses existing on December 1, 1985. Local governments worked closely with the Commission to refine and finalize their maps. These maps were reviewed and approved by each local government through a local public hearing process, and subsequently the Critical Area Commission approved the maps. It should be noted that these maps are considered an element of a local jurisdiction's Critical Area program.

Any local changes to these maps are considered amendments to that jurisdiction's program and must receive formal approval by the Critical Area Commission (BaySmart: A Citizen's Guide to Maryland's Critical Area Program, Critical Area Commission for the Chesapeake and Atlantic Coastal Bays, December 2008, p. 25).

Stormwater Management

The following information is excerpted from the Maryland Department of Environment's *Approval Fact Sheets*. For additional information on stormwater approvals, including the steps for the approval process, State agency contacts, and additional requirements, go to the Water Management Administration section of the *Approval Fact Sheets* at:

http://www.mde.state.md.us/Permits/factsheets/index.asp

Erosion/Sediment Control and Stormwater Management Plan Approvals

The purpose of Maryland's erosion/sediment control and stormwater management programs is to reduce stream channel erosion, pollution, siltation, and local flooding caused by land use changes associated with urbanization.

Erosion/sediment control plan approval is required, before construction, to prevent siltation due to releases of sediment (soil) from active construction sites. For example, before a housing development begins, land needs to be

cleared and graded. Erosion/sediment control plan implementation is needed to control the exposed soil from washing away into the storm drains, streams, rivers, and the bay.

Plan approval is required for any construction activity that disturbs 5,000 square feet or more of soil, or results in the excavation of 100 cubic yards or more of soil. Stormwater management plan approval is required to prevent stream bank erosion by controlling the rate of stormwater runoff from newly developed areas by using infiltration practices, shallow marshes, retention, and detention ponds.

For example, prior to construction, land is typically covered with grass and trees, which help slow down the rate of stormwater runoff and promotes infiltration. This reduces flooding and soil from being washed away. After construction, stormwater runoff typically increases due to the loss of ground cover and the increase of impervious surfaces such as roofs, sidewalks, roads, and parking lots. Stormwater management is needed to control runoff to the same rate prior to construction. This approval is required for any new development project that disturbs 5,000 square feet or more of land. It can be obtained at the same time as the erosion and sediment control approval.

Permit for Stormwater Associated with Construction Activity

The purpose of the federal National Pollutant Discharge Elimination system (NPDES) stormwater program is to control pollution generated from runoff associated with industrial activity, including construction, and municipal separate storm sewer systems. This permit is required for all construction activity in Maryland with a planned total disturbance of 1 acre or more. Conditions of the permit include compliance with approved erosion/sediment control and stormwater management plans, compliance with water quality standards and TMDLs, self-monitoring and record keeping.

Municipal Separate Storm Sewer Permit

The purpose of the NPDES stormwater program is to control pollution discharged from municipal separate storm sewer systems (MS4). This permit is required for owners of municipal separate storm sewer systems serving large, medium and small municipalities.

- A large municipality is one that serves a population of 250,000 or more.
- A medium municipality is one that serves a population between 100,000 and 250,000.
- A small municipality is one that serves a population less than 100,000.

The following jurisdictions in Maryland are considered large municipalities for NPDES purposes: Anne Arundel, Baltimore, Montgomery, and Prince George's Counties and Baltimore City. Carroll, Charles, Frederick, Harford and Howard Counties are considered medium municipalities. All other jurisdictions within these places are considered small municipalities for NPDES stormwater purposes.

What is the approval process?

The application process consists of two parts:

Part 1 requires the local government to gather information regarding various existing programs to control storm drain system pollution, such as existing ordinances to control discharges into the local storm drain system, programs to control illegal system connections, and existing financing options. The application also includes extensive storm drain system mapping and monitoring under dry weather flow conditions.

Part 2 requires proposals for management programs, such as dumping and spill response, public education, and watershed studies. This part also includes monitoring of storm water flows during rain events. After a completed application is submitted, there are opportunities for informational meetings and public hearings to allow input from interested parties.

The application requirements are the same for both large and medium municipalities; only the deadlines for the applications are different. The application process is a 2-year task where local governments collect data regarding legal authority, pollutant source identification and mapping, discharge monitoring, pollutant management program development, and financing NPDES programs. MDE has issued two general permits to cover small municipalities under the NPDES requirements. One general permit is designed for affected local governments and the other is designed for State and federally owned storm drain systems. Both permits require six minimum control measures to

be implemented. These control measures include public participation, public education, illicit discharge control, erosion and sediment control, stormwater management, and good housekeeping.

Forest Conservation Act

The following information is excerpted from the Maryland Department of Natural Resources *Forest Conservation Act* webpage. Additional information, including applications, worksheets, exemptions, and State agency contacts, can be found at: http://www.dnr.state.md.us/forests/programapps/newFCA.asp.

The main purpose of the Maryland Forest Conservation Act (FCA) (Natural Resources Article Section 5-1601 through 5-1613) enacted in 1991 was to minimize the loss of Maryland's forest resources during land development by making the identification and protection of forests and other sensitive areas an integral part of the site planning process. Identification of priority areas prior to development makes their retention possible. Of primary interest are areas adjacent to streams or wetlands, those on steep or erodible soils or those within or adjacent to large contiguous blocks of forest or wildlife corridors.

Although the Maryland DNR Forest Service administers the FCA, it is implemented on a local level. Gaining approval of the required Forest Conservation Plan (development of more than one acre) may require long term protection of included priority areas or planting/replanting (afforestation or reforestation) a sensitive area off-site.

What does the FCA require?

Any person making application for a subdivision, grading permit or sediment control plan on a tract of 40,000 square feet or more must submit a Forest Stand Delineation (FSD) and a Forest Conservation Plan (FCP). FSD includes the identification of existing forest cover and the environmental features of a proposed development site. It consists of an application, map, and summary of specific field data collected.

FCP includes a map and narrative describing the limits of disturbance for the proposed project and how the existing forested and sensitive areas will be protected during and after development. It includes an application form and worksheet showing the calculation of forest disturbed and retained and whether replanting trees will be required and a plan for the long-term maintenance or protection of these trees.

Green Development

Climate Change

Climate change is underway and is projected to increase in intensity in the next decades. The vast majority of scientists and governments worldwide agree that transportation, energy production and energy usage are generating greenhouse gases – including carbon dioxide, methane, and nitrous oxides – which contribute to the warming of the global climate by trapping radiation from the sun.

Though some regions may profit from climate change, most countries – including the United States – are expected to experience severe droughts and storms in southern regions, flooding and snow hazards in northern regions, and sea level rise along the coast lines. In Maryland, sea level rise in the Chesapeake Bay, coupled with subsidence of the land, is already occurring.

The U.S. economy increasingly depends on finite energy resources for production of all goods, energy generation and transportation. Though there is disagreement on the time span and the amount of undiscovered fossil resources, there is a general consensus that energy resources such as oil, natural gas and uranium eventually will run out, possibly within this century. The discovery of new oil reserves is now growing at a much slower rate than the rate which oil is being consumed.

It is likely that non-renewable resources will become increasingly expensive and scarce, mandating lifestyle change and the need to develop renewable energy sources. Currently, there is no alternative energy infrastructure that can fully replace conventional petroleum affordably. If climate change concerns are to be addressed, it will be essential to reduce the current use of remaining petroleum while investing in alternative transportation options, renewable energy infrastructure and local agricultural resources.

This chapter focuses on sustainable development since the concept holistically addresses factors that cause climate change while preparing for a post-petroleum future.

What is Sustainable Development?

Sustainability is a complex term that has been defined and interpreted in many ways since it was first introduced in the 1987 Report of the World Commission on Environment and Development. Widely known as the Brundtland definition, the Report defined sustainability as a development process that aims to meet "the needs of the present without compromising the ability of future generations to meet their own needs"[1] .

Some U.S. cities have already embraced the concept of sustainability in the field of regional and city planning. Examples of local applications are Sustainable Seattle, Burlington Legacy Project, the Minnesota Sustainable Development Initiative, and the Baltimore Sustainability Plan. The most innovative and detailed application in the United States to date, however, is the Sustainable Community Development Code developed by the Rocky Mountain Land Institute which aims to become a blueprint for regional and local codes across the U.S.[2]

U.S. Green Building Council

Sustainability has a champion in the U.S. Green Building Council (USGBC). This national non-profit organization has emerged over the past 20 years as the leader in the promotion of sustainable, or Green development practices, first for buildings, now for sites and whole neighborhoods and in the future for whole new towns and retrofitting existing communities. USGBC consists of a community of leaders working to transform the way buildings and communities are designed, built and operated. They envision an environmentally responsible, healthy and prosperous environment that improves the quality of life.[3]

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[1] World Commission on Environment and Development, Our Common Future, New York: Oxford University Press, 1987, p. 8

[2] Draft of the Sustainable Community Development Code Beta 2.0: http://law.du.edu/index.php/rmlui/programs/sustainable-community-development-code/sustainable-community-development-code-beta-version-12

[3] USGBC

The USGBC developed a rating system called LEED (Leadership in Energy and Environmental Design) which is a voluntary, consensus-based system for the design, construction, and operation of high performance green buildings. LEED can be applied to every building type and phase of building lifecycle, and coming out in 2010 – to Neighborhood Development (LEED ND).

There is a Maryland chapter of the USGBC, which advocates for more than 600 member businesses to expand the state's green building initiatives.

Maryland Green Building Council

The General Assembly created the Maryland Green Building Council in 2007 to report annually to the Governor and the legislature on implementation and progress related to the states high performance building program. The council continues its work to provide recommendations about how to expand green building in the state beyond schools and those specifically owned by the state.

Sustainability and the Planning Commission/Planning Board

In Maryland, sustainability means that development, infrastructure, public transportation and resource conservation are strategically planned and implemented to minimize the consumption of fossil fuels, greenhouse gas emissions, overuse of water supplies, production of waste, and pollution of water resources; and to retain the economic, ecological, and scenic values of the countryside.

The planning commission/board is a key player in comprehensive planning and implementation and therefore has an influence on the degree to which a county or community can achieve sustainable development goals.

The following is an overview of the relationship between the planning commission/board and sustainable development, and specific strategies that can be implemented.

Comprehensive Plans

The planning commission/board is responsible for advising the local legislative body on long-term comprehensive planning consistent with Maryland's state visions. The commission/board works with the community to craft a comprehensive plan that defines a vision for how the community will look and function in the future.

The planning commission/board has the opportunity to lead a proactive role in a jurisdiction, by recognizing and seizing opportunities to affect growth and development consistent with the comprehensive plan.

Implementation Tools

The planning commission/board can help implement comprehensive plans by recommending appropriate tools such as zoning regulations and boundaries, subdivision and development regulations, capital programs and a range of innovative tools to the local legislative body. Adopting these implementation tools can be significant in helping a community to reach its sustainability goals.

Zoning and Subdivision Regulations

The planning commission/board acts as formal advisor to the legislative body for a jurisdiction's zoning maps and regulations and subdivision requirements and for subsequent revisions to these regulations. Zoning is one of the most powerful tools to influence energy and land consumption of a community, its livability, density and land use.

Traditional zoning and subdivision regulations that separate land use uses and allow large lot development have contributed to sprawling and costly developments with sometimes adverse impacts on local environments, especially streams, air quality and wildlife habitat. Sustainable zoning codes place an emphasis on smaller lots, allow complimentary mixed-uses, preserve historic structures and positively influence community design. Innovative subdivision regulations require clustered developments (same number of units on smaller lots leaving a larger percentage of the subdivision in a natural state).

Development Regulations

The planning commission/board also serves as formal advisor to the legislative body on development regulations that supplement zoning and subdivision regulations with additional requirements for sidewalks, bike trails, pervious pavement, natural storm water systems (e.g. dry swells) and tree preservation/ planting.

Innovative Tools

The planning commission/board may have opportunities, from time to time, to consider and propose to the local legislative body implementation tools associated with sustainability, such as transfer of development rights programs to protect open space and agricultural lands while fostering desired development in established communities. Other sustainability related tools include moderately priced dwelling unit ordinances, design guidelines, form-based zoning codes and transit oriented development (TOD).

Programs for Public Improvement, Land Acquisition and Financing the planning commission/board recommends programs and financing for public structures, improvements and land acquisition to appropriate public officials. Capital expenditures such as strategic physical improvements can advance the quality of life in communities, support desired economic development and revitalization, and provide parks and recreation opportunities to underserved communities. Furthermore, a planning commission/board can serve as an advisor on which development rights of sensitive lands to acquire to protect rural or farming activities.

Strategies for Achieving Sustainable Development

Low Impact Development and Green Infrastructure

Rain that falls on undeveloped land is filtered through the soil and recharges aquifers or eventually flows into nearby streams, ponds, wetlands and lakes. Rain that falls on impervious surfaces such as roofs, streets or parking lots, however, accumulates on the hard plane and runs-off into a sewer or nearby waterway carrying trash and chemical substances such as fertilizer and oil with it. The run-off prevents aquifers from recharging and pollutes surface water, and may lead to a decline in drinking water quality and quantity, sedimentation and disturbance of ecosystems.

Low impact development (LID) is a technique designed to reduce the negative effects of drainage-based development practices. The concept is based on an integrated planning, design, and construction process that seeks to reduce runoff volume by allowing precipitation to filter through the soil close to where runoff is generated and often includes detention or retention ponds to store excess water.

Water Conservation

Reliable access to clean water is an essential part of life, fulfilling basic human and economic needs including drinking, bathing, irrigation and commercial processing. Maryland has experienced worsening droughts and population growth in recent years, highlighting the need for more efficient water conservation. In addition, reducing demand on the water supply system helps to lengthen the life of existing infrastructure, and reduce or delay the need for system capacity upgrades for treatment, distribution, and storage.

Water efficient landscaping with native plants, rain water harvesting in rain barrels and ponds for private and agricultural use, non-industrial waste water recycling, and reducing water consumption through efficient plumbing fixtures are just a few possible approaches towards efficient water conservation. The goals of water conservation are to allow communities to meet future water needs of their growing populations at all times, decrease community per capita water use while preserving attractive landscapes, protect ground and surface water supplies from unsustainable depletion; and reduce wastewater treatment volume and related public expenditure.

Solid Waste and Recycling

Current lifestyles not only draw heavily on natural resources but also create large volumes of waste that either end up in landfills or are recycled for further reuse. Popular slogans such as “Reduce, Reuse, Recycle” express the need for salvaging of natural and man-made material and products for further use but also the need for lower waste production in the first place. Recycling and reusing some of this waste makes economic sense and helps protect the environment and scarce natural resources.

Domestic, commercial, and non-hazardous industrial solid waste that cannot be reused or recycled has to be disposed in carefully engineered and safe landfills. Improper handling of these wastes can pose direct threats to both public health and natural resources, particular risks are the pollution of ground and surface water.

Natural Hazards

Floodplain Management

As the climate changes, floods may become more frequent or more severe in some regions. Floods can affect human life and health, cause property damage, and have a negative effect on water supply, sanitary sewage disposal and natural drainage. The prevention of unwise development in areas subject to flooding through effective floodplain management reduces financial burdens to the community and the state, and will prevent future displacement and suffering of its residents. This protection is achieved through the review of all activities proposed within identified floodplains and by the issuance of permits for those activities that comply with the objectives of floodplain management.

The Maryland Model Floodplain Management Ordinance of 1991 emphasizes that floodplains are an important asset to the community. "They perform vital natural functions such as temporary storage of floodwaters, moderation of peak flood flows, maintenance of water quality, groundwater recharge, prevention of erosion, habitat for diverse natural wildlife populations, recreational opportunities, and aesthetic quality. These functions are best served if floodplains are kept in their natural state. Wherever possible, the natural characteristics of floodplains and their associated wetlands and water bodies should be preserved and enhanced."[4]

Coastal Hazards

Maryland's 7000 miles of shoreline are highly vulnerable to hazards. Shoreline erosion, coastal flooding and bluff failure are the most frequently occurring coastal hazards along the State's shoreline. These hazards are the consequence of both weather-related events, such as hurricanes and Nor'easters, and geological forces, like erosion.

The rising sea level complicates the coastal hazard scenario in the State, which as a causal force intensifies and prolongs on-going coastal processes and extreme events. Throughout coastal Maryland, coastal hazards pose a significant threat to infrastructure, natural resources, and communities. However, the hazards vulnerability varies regionally because of the State's mixture of coastal environments.

Numerous federal and state agencies work together with local governments to coordinate hazard preparedness, response, recovery and mitigation efforts in Maryland. The Coastal Zone Program, for example, provides a considerable amount of technology, data and research support, as well as local government assistance and public outreach.[5] Shoreline developments can be protected through engineering solutions such as levees and canals or natural solutions such as dunes or wetlands.

Steep Slopes

Steep slopes are hillsides that have a 15% slope or greater. Though often developed in areas with high land values, steep slopes are unsuitable areas for development due to the difficulty of building on steep grades and the threat of erosion, flooding, stream sedimentation, and slope instability after development. Even so, these slopes can provide wildlife habitat, recreational opportunities, and scenic views. Various ways to keep development off of steep slopes is to protect them through land use regulations, and/or by creating greenways, wildlife habitat preservation areas, or conservation areas.[6]

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[4] Maryland Model Floodplain Management Ordinance, http://www.mde.state.md.us/assets/document/flood_hazards/revordinance2004.pdf

[5] Maryland Coastal Program, Maryland Department of Natural Resources, http://dnr.maryland.gov/bay/czm/hazards_06_04.pdf

[6] Nashua Regional Planning Commission

Urban Form and Density

Historically, movements within cities tended to be restricted to walking, thus, urban forms tended to be compact and human-scaled. Many cities have inherited this compact urban form, even though transportation technology now allows towns to spread out further. Still, the dense historic city centers of many European, Japanese and Chinese cities allow residents to walk or cycle to work, shop and play.

In contrast, most Australian, Canadian and American cities were built in relatively recent times in a dispersed urban form based on the availability of an abundant amount of land and low transportation costs. The combination of sprawling urban form, lack of public transportation options and Euclidian zoning which separates land uses also promotes car dependency. Though there are planning movements that favor more compact, walkable, mixed-use environments with transit access, built up areas of most towns and cities grow at a faster rate than their population.[7] U.S. Census data from 1970 to 1990 reveals that, in Baltimore, there was 16% increase in population and a corresponding 60% increase in per capita land consumption. Phoenix, Arizona on the other hand experienced a 132.4% increase in population, but decreased the per capita land consumption by 17.7%.[8]

The dispersed land use pattern in Maryland and other States comes with a high cost to local and State economies and budgets. It generally costs much more to accommodate growth by building new roads, electrical lines, sewer and water infrastructure, schools and parks for residential and commercial in greenfield developments, than by integrating people and businesses into existing communities. Further, other costs associated with low density development that are sometimes not considered are negative impacts on the environment and on public health.[9]

Historic Preservation

Within the past decades, historic preservation has evolved from a limited and rather narrow pursuit into a broad based popular movement with wide support. For some, historic places provide a tangible sense of permanence and community and contribute to a community's unique identity and character. To others, the preservation of historic properties is seen as an inter-generational responsibility to be stewards of a shared heritage. For still others, historic places have economic value as unique real estate holdings, attractive tourist destinations, or distinct community icons. Whatever the individual or community motivation or values associated with historic places, the retention, revitalization, and continued use of older and historic building stock is an integral part of sustainable development.[10]

Following the ethos "the greenest building is the one that already exists", historic preservation has emerged as a key tool in the sustainable development continuum. At the community level, historic buildings help to define a place's identity and distinguish communities from each other. These distinctions often positively influence property values and other quality of life factors and contribute to a community's attractiveness. As it becomes apparent that long commutes from outlying low density areas are unsustainable, local jurisdictions that were established before the advent of the automobile will find themselves at an advantage over those who were not. Local municipalities will need to start now to prepare for the future by changing zoning codes to allow denser and mixed-use development within all existing residential areas and by investing in alternative transportation options and telecommunication centers. In other words, we knew how to do this once before.

At the building level, historic properties represent enormous quantities of embodied energy, including building materials and human energy expended during the construction process. Additionally, many historic buildings, particularly those built before 1940 were designed to be more responsive to the environment by incorporating passive ventilation and lighting in an era before wide-spread availability of electricity and air-conditioning. Many of these systems are still in place, or can be restored as part of a retrofit process that both protects the unique character-defining features of a property while helping to address energy and green-building goals.

The conservation and upgrading of the existing built environment, including the preservation and re-use of historic and older structures, the greening of existing buildings, and reinvestment in older and historic communities, are crucial strategies to lower natural resource depletion, energy consumption and greenhouse gas emissions while

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[7] The Geography of Transport Systems, http://people.hofstra.edu/geotrans/eng/ch6en/conc6en/ch6c1en.html
[8] Sprawl City, http://www.sprawlcity.org/cgpg/index.html
[9] Sprawl City, http://www.davidsuzuki.org/files/Climate/Ontario/sprawlfacts.pdf
[10] Advisory Council on Historic Preservation, http://www.achp.gov/overview.html

providing communities with a sense of place and economic opportunities.[11] Historic buildings are a finite resource and their loss can have economic, visual, emotional, and environmental impacts. While the unique conditions and requirements of individual historic buildings vary widely, historic preservation should be viewed as a broader public policy goal, particularly in places that seek to maintain their unique identity and grow in a sustainable manner. The demolition of a single building represents an enormous volume of debris deposited in landfills, which have limited capacity. Even with the largest and most aggressive building material recycling program, the volume of material that results from demolition and new construction will still exceed the amount of construction waste generated by rehabilitation.

Planning Commissions play a critical role in preserving historic places. In communities where there are local historic preservation ordinances, Planning Commissions should play a role in the designation process for new historic districts and individual landmarks. The role of the Planning Commission in designation proceedings is to review and comment on the consistency of the proposed district boundaries with the jurisdiction's Comprehensive Plan and other broad considerations that are beyond the specific purview of the Historic Preservation Commission. The Planning Commission's comments should accompany the Historic Preservation Commission's recommendations to the City or County Council to help that body make a full and well-informed decision.

Mobility Systems

Complete Streets, Pedestrian and Bicycle Systems, and Public Transit

During the second half of the 20th century, the automobile was widely perceived as the most reliable and most practical mobility mode. Urban form was designed around the car, assuring the safe accommodation of automobiles on streets, the availability of ample parking spaces near retail, services, schools, recreation and residences, and public investment in highway infrastructure that sometimes severely impacted urban communities and city life for the benefit of suburban commuters. Nowadays there is a growing public desire for so-called "complete streets", pedestrian and bicycle systems and more public transit options.

Complete streets are "designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and bus riders of all ages and abilities are able to safely move along and across a complete street.[12] A complete street design usually includes wide sidewalks, clearly marked bicycle lanes, frequent pedestrian crossings and bus service. Motorists are required to be further attentive towards more vulnerable users of the street, therefore reducing accidents. Complete streets in combination with well-planned citywide pedestrian and bicycle systems and transit options increase access to amenities, employment and housing choices for the non-driving population, allow for additional mobility options, save energy through more efficient ways of travel, improve physical activity levels, and foster community interaction.

Parking

Large surface parking facilities are prolific in many urban and suburban communities. The minimum size of these lots is determined by local zoning codes that are mostly based on worst case demand assumptions (i.e. how many spots are needed on the busiest day of the year). This calculation results in under-utilized and over-designed parking lots throughout a good part of the year. Parking lots are large impervious surfaces that contribute to the urban heat islands effect, can be esthetically unpleasant and are a major source of urban run-off.

Changes in zoning codes and design can make parking lots more sustainable. Zoning for a maximum number of parking spaces instead of a minimum is an effective approach to curb the excessive size of parking lots. Though more expensive than surface parking, structured, underground, rooftop or robotic parking solutions are more space efficient and reduce the size of the impervious surface and allow the reminder of the land to be put to more valuable use. Another more sustainable practice is using pervious asphalt or gravel for surface parking lots or rain gardens throughout and along the edge of the parking lot to prevent run-off and allow rainwater to soak into the soil to recharge aquifers.

[11] National Trust for Historic Preservation, http://www.preservationnation.org/issues/sustainability/
[12] Completestreets.org

Renewable Energy

Renewable energy refers to energy that is naturally generated by wind, water, the earth and the sun. The energy can be collected through existing technologies such as solar panels, wind mills or water turbines. Though the initial cost and energy use of the production of those technologies is comparatively high; energy generation does not emit any greenhouse gasses, is free and unlimited.

Municipalities and counties that invest in renewable energy production and allow and encourage renewable energy structures such as solar panels and wind mills on private property can support households in becoming less dependent on nonrenewable energy sources such as oil and coal. This technology is changing all the time, and becoming less obtrusive and costly in the process.

Energy Efficiency and Conservation

As climate change moves onto the public agenda, and nonrenewable energy becomes increasingly expensive while cheaper alternatives are not yet fully available, the focus of unlimited energy consumption is shifting towards energy efficiency and conservation.

A widely recognized energy efficiency standard is Leadership in Energy and Environmental Design (LEED) certification for sustainable businesses, homes, hospitals, schools, and neighborhoods. LEED was developed by the US Green Building Council, a non-profit organization committed to changing the way buildings and communities are designed, built and operated.

Quality of Life

While sustainable development promotes healthy living, some local codes and development standards have not made adjustments necessary to bring about positive change. Noise and lighting standards are two examples.

Noise

People living in urban and suburban areas are enduring increased levels of noise from various sources, including traffic, emergency vehicles, airplanes, crowds and electronics. Noise can have adverse health effects including hearing loss, sleep disturbances, cardiovascular and physchophysiologic problems, performance reduction, annoyance responses, and adverse social behavior.[13]

Healthy communities should actively reduce noise pollution and protect the public from health problems. For example, municipalities can require building codes that sound-proof windows in apartment buildings near major roads, to erect noise walls along highways, plant tall hedges and trees in the right-of-way along streets, outlaw unnecessary horn sounding, and provide natural sources of soothing white noise such as water fountains and streams.

Lighting

The loss of nighttime darkness in urban areas is becoming a serious concern. Outdoor lighting is needed for safety, security and utility, but only about half of the produced light actually fulfills those purposes. Municipalities can cut light pollution by reducing the number of street lights and by installing full cut-off street light fixtures that prevent light from going up into the air where it is wasted, and instead direct it back down onto the ground requiring lower wattage bulbs to light the same amount of area.

[13] Department of Health and Human Services, Center for Disease Control and Prevention, http://www.cdc.gov/nceh/hsb/noise/

Developing a Green Building Program or Ordinance

Some jurisdictions have created their own green building programs and regulations. Others who are considering doing so may want to consider the following:

- Assess the direction desired by the local council, commission or board. Without strong political backing, gaining support for the funding, staffing and other resources will prove more difficult.
- Consider the pros and cons of a mandatory versus voluntary program and choose the one most
- appropriate for the jurisdiction. Consider the use of development agreements as an option to introduce green building features into the local process one step at a time.
- Research local municipal and county green programs and ordinances for possible use as models.
- Consider a working group approach consisting of a balanced mix of stakeholders including elected officials, government officials, developers and builders, and the public at large.
- Engage the planning commission or board by using meetings as a platform for workshops and
- public input.
- Conduct 'sustainability workshops' to illustrate how green building is connected to a host of related issues and help garner support from special interest groups.
- Select green building guidelines or standards that are appropriate for your jurisdiction and when possible, are already used in the region.
- Consult with legal counsel to ensure that proposed guidelines or standards that do not conflict with other state or local regulations. In the case of an ordinance, be sure that it is legally defensible.
- Consider the use of outside resources for green building plan check and inspection services.
- Keep compliance thresholds realistic and try not to address them until the end of the development process.
- Keep the triple bottom line – environment, economy and social equity - in mind to ensure a sense of fairness for all parties.
- Determine how the program or ordinance provisions will be staffed and funded.
- Provide education about green building principles and practices, and your jurisdiction's program or ordinance to staff, developers, builders and citizens.

Housing Issues

This segment will examine the following elements:

- Provide an overview of affordable housing needs in Maryland.
- Promote discussion of how the affordable housing issue is related to economic development and to Smart Growth / Priority Places.
- Provide an introduction to key federal and state housing responsibilities and programs.
- Introduce an array of tools to assist in the provision of affordable housing.

Affordable Housing Needs/Conditions in Maryland

During the past 20 years the gap between market price of housing and purchase power has increased. These trends have hit low income families especially hard. Although the homeownership rate in Maryland is over 71% (higher than the national homeownership rate of 68%), there are significant numbers of renter households who have "housing problems". Housing problems are defined as paying more than 30% of income in rent and/or living in substandard or overcrowded housing.

A 2004 interim report provides the following data computed by the Maryland Department of Housing and Community Development (DHCD):

- Statewide, 33% of all households cannot afford the median rent in their county of residence.
- There is an acute shortage of rental housing for workforce and low-income families, seniors and individuals with disabilities in Maryland. For workforce and low-income families, Maryland had a deficit of about 125,000 workforce units in the year 2000. This shortage is projected to grow to approximately 157,000 units by the year 2014.
- The projected shortage of affordable and available rental housing for the year 2014 is highest in
- Montgomery County followed by Prince George's County, Baltimore County, Baltimore City, Anne Arundel County, and Howard County. With the exception of Garrett County, jurisdictions with the smallest projected shortage are located on the Eastern Shore, and include Somerset, Caroline, Kent, Dorchester, Queen Anne's and Talbot counties.
- For rental households with incomes below 30 percent of their area's median household income,
- 73% reported at least one housing problem in 2000, and 54% of these households paid more than half of their incomes for rent and utilities.
- For rental households with incomes between 31 and 50% of their area's median income, 68% reported at least one housing problem and 13% paid more than half of their incomes for rent and utilities.
- Of rental households earning between 51 and 80% of their area's median income, 32% reported at least one housing problem and 2% indicated they paid over half of their incomes in rent.
- The homeownership rate for minority households in Maryland is 53%. While the state's minority homeownership rate is higher than the national average (giving the state the 14th highest minority homeownership rate), this rate is much lower than the white homeowner rate of 77%.
- A concern expressed by the Governor's Commission on Workforce Housing is that only housing
- projects targeted in Smart Growth and Priority Funding Areas are eligible for state housing grants. This creates problems in a rural county such as Garrett County, where only 2% of the land area is within a PFA.

Relationship of Affordable Housing to Economic Development

Traditionally, people of all income ranges have lived throughout Maryland's communities. Although some neighborhoods had concentrations of families with similar incomes, low and moderate income residents were often scattered throughout the community in a variety of residential styles. Over the past forty years much has happened to change that pattern.

For a variety of reasons (such as low profit margins in affordable housing, NIMBYism, and a jurisdiction's interest in maintaining the tax rate by favoring "high ratables" such as commercial / workplace development over affordable housing), there is a shortage of workforce housing located in close proximity to employment and to middle- and high-income housing. This pattern leads to several concerns, such as:

- Fairness/social justice. (the notion that school teachers, state and local government employees, fire fighters and police personnel should have some opportunity to live in the jurisdictions they serve.)
- Workers who are increasingly forced to find housing that is far from their jobs. This leads to loss of productivity, potential decrease of the available labor pool for a given employer, and higher rates of unemployment.
- Lengthier commutes to work and essential services also have environmental consequences (e.g. more gasoline consumption leading to more air pollution and more dead zones in the Chesapeake Bay).

Another housing-related policy concern is to stabilize and revitalize our existing neighborhoods so that middle- and higher income households will want to remain, thereby maintaining an income mix and supporting existing businesses. Smart Growth programs can assist in neighborhood stabilization/revitalization.

Overview of Federal and State Housing Laws and Programs

Major federal roles include the following:

- Stimulate home ownership by allowing home owners to deduct home mortgage interest and local property taxes from their taxable incomes. These tax deductions totaled $106.9 billion in
- 2002, according the National Low Income Housing Coalition.
- Assist investors in rental housing through various kinds of tax deductions (totaling $15.2 billion in 2002).
- Sacrifice taxes (from tax deductions) for owners and investors totaled $122.1 billion in 2002
- (compared to $1 trillion in taxes that were actually paid in 2002).
- Enforce laws against discrimination in housing lending, buying and renting though such acts as: the Civil Rights Act; the Federal Fair Housing Act and Amendments; The Americans with Disabilities Act; the Federal Equal Credit Opportunity Act; lead paint laws that combat childhood lead poisoning; the Community Reinvestment Act and the Home Mortgage Disclosure Act.
- Require state and local planning for the receipt of federal grants for low-income housing creation and rehabilitation. The Consolidated Plan submitted by state and "entitlement" local governments consolidates the planning and application documents of HUD block grants, the Community Development Block Grant (CDBG), the HOME partnership Investment Program (HOME), and the Emergency Shelter Grant Program). In addition to making the State eligible to receive block grants, the Plan also serves as a planning tool for how block grants will be distributed. The Plan develops policies and procedures to provide decent housing, a suitable living environment and economic opportunities where State funds are needed most. Also administers the HOPE VI program (replacement of older public housing with new, low-rise, mixed-income and mixed-use housing).
- Grant funds for rental assistance (HUD Section 8).
- Stimulate low-income housing creation by allocating Low-Income Housing Tax Credits (LIHTC) to states.

At the state level, DHCD conducts a number of activities which promote affordable housing throughout the State. An inventory of DHCD housing programs can be accessed at dhcd.maryland.gov. From 1999 through 2003,

DHCD facilitated the creation of an annual average of 2,700 workforce/affordable rental opportunities for families, individuals with disabilities and senior citizens. In addition, over the same period DHCD facilitated the average, annual creation of 1,700 affordable ownership units. DHCD also:

- Administers some federally-funded programs. For example, the state establishes criteria and does selection of projects receiving LIHTCs, and administers a lead paint reduction / elimination program with HUD funding.
- Prepares a Consolidated Plan for non-entitlement jurisdictions.
- Stimulates workforce home ownership with below-market interest rate loans and down payment and settlement assistance.
- Provides loans and grants for low-income housing providers, some through the sale of tax- exempt revenue bonds.

Local Strategies and Tools to Increase Affordable Housing

Planning

Planning and zoning can have the unintended consequences of acting as a barrier to affordable housing. Tools exist which can help counter balance those effects, as well as examples of model ordinances, and legal decisions, which can be used to guide decisions which will affect the provision of affordable housing.

Housing-related planning should include:

- Studying housing needs for persons of varying incomes and stages in the life cycle; and
- Making housing an element in the comprehensive plan (declaring affordable housing a priority and outlining housing goals, objectives and priorities)

Creating designated tax sources for affordable housing

For example, a jurisdiction could use a portion of revenues for real estate transfer taxes to capitalize a housing trust fund.

Zoning and other regulatory programs

- Upzoning – allowing for additional units of housing to be built in some residential zones;
- Inclusionary zoning - requires a certain percentage of affordable units to be built along with new market rate housing;
- Altering zoning to allow for accessory housing (granny flats) and/or apartments above garages and stores in new developments;
- Allowing manufactured housing in residential zones; and
- Favoring affordable housing in impact fee administration.

Partnering with, and providing support for, non-profit housing providers

The role of nonprofit organizations in developing, financing, and managing affordable housing has greatly expanded in many communities. Nonprofits are playing significant roles in community revitalization, refinancing and stabilizing troubled projects. Local governments can donate government- owned land and buildings, and loans and grants, for non-profit projects.

Other Strategies

- Linking home-ownership counseling to receipt of homeownership assistance; and
- Countering NIMBYism through use of design standards, responding to legitimate community concerns, and incorporating historic preservation whenever possible to help reduce opposition to affordable housing developments

Smart Growth and Affordability

It takes political will and creative entrepreneurship to create housing opportunities for low and moderate income households. There is no single fix for the problem - - local governments using the full range of their powers. Careful documentation of needs will lead to better intervention.

Some critics assert that smart growth raises housing prices by restricting the supply of buildable land. But a 2002 Brookings Institution study found that:

- Market demand, not land constraints, is the primary determinant of housing prices;
- Both traditional land use regulation and growth management policies can raise the price of housing; and
- If housing prices can increase in any land use environment, then the decision is between good
- and bad regulation to improve housing affordability.

Transportation Planning

Federal, State, Regional and Local Roles in Transportation Planning

This course segment covers Federal transportation policy, the Maryland state transportation planning process, the regional (MPO) and local roles in transportation planning.

Planning Tools Affecting the Local Transportation Plan

How transportation planning enables Smart Growth using these basic concepts:

- Federal, state, regional, and local roles
- Land use and transportation planning
- Information to be included in Transportation element of the plan
- Local planning tools that affect transportation planning

The Federal Role in Transportation Planning

SAFETEA-LU

Federal transportation policy is an important factor influencing local transportation planning and access, development patterns, and quality of life of local communities through its significant highway, transit, pedestrian and bicycle facility, air quality improvement, and other investment programs.

The current federal transportation law, the 2005 Safe Accountable Flexible Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU) presents the largest surface transportation investment in the nation's history totaling $244.1 billion for highways, highway safety, transit, and other transportation facilities and services.

SAFETEA-LU builds on the foundation of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and the 1998 Transportation Equity Act for the 21st Century (TEA-21). These acts transformed the federal surface transportation programs by emphasizing a more balanced transportation system through investment in multi-modal transportation – highways, public transit, pedestrian and bicycle facilities, and High-Occupancy Vehicle travel. They also placed a greater emphasis on the environmental and social consequence of transportation investment, involving the public in the decision process, and supporting livable communities.

SAFETEA-LU focuses on significant national transportation issues. These include improving safety and efficiency, reducing congestion, increasing intermodal connectivity and increasing environmental stewardship. The act strives to give State and local transportation decision makers more flexibility for solving transportation problems in their communities. For instance, in addressing environmental stewardship, SAFETEA-LU increases funding for environmental programs and adds new programs, such as Safe Routes to School. In improving metropolitan transportation planning efficiency, SAFETEA-LU promotes consistency between transportation improvements and State and local planning AND growth and economic development patterns.

In 2009, SAFETEA-LU is due for reauthorization. As the federal government is crafting its next transportation bill, SAFETEA-LU programs are temporarily extended for 18 months. The next transportation reauthorization is expected to address emerging issues, such as climate change, energy efficiency, sustainable funding sources, and other variables to support sustainable communities.

Maryland State Transportation Planning Process

MTP

The Maryland Transportation Plan (MTP) is the state's transportation vision with specific goals and policy objectives to carry out this vision. The MTP guides state transportation investment programs and development of transportation element plans, including the transit master plan, the freight plan and pedestrian, and bicycle and trails plans.

The MTP, along with the Annual Attainment Report on Transportation System Performance and the Maryland Consolidated Transportation Program, presents Maryland's policies, programs, projects and investment outcomes on State transportation facilities and services.

CTP

The Consolidated Transportation Program (CTP) is the state's six-year capital budget for transportation. The CTP includes major and minor transportation projects and programs for all state transportation modes. The CTP is submitted to the General Assembly for approval as part of the State's budget.

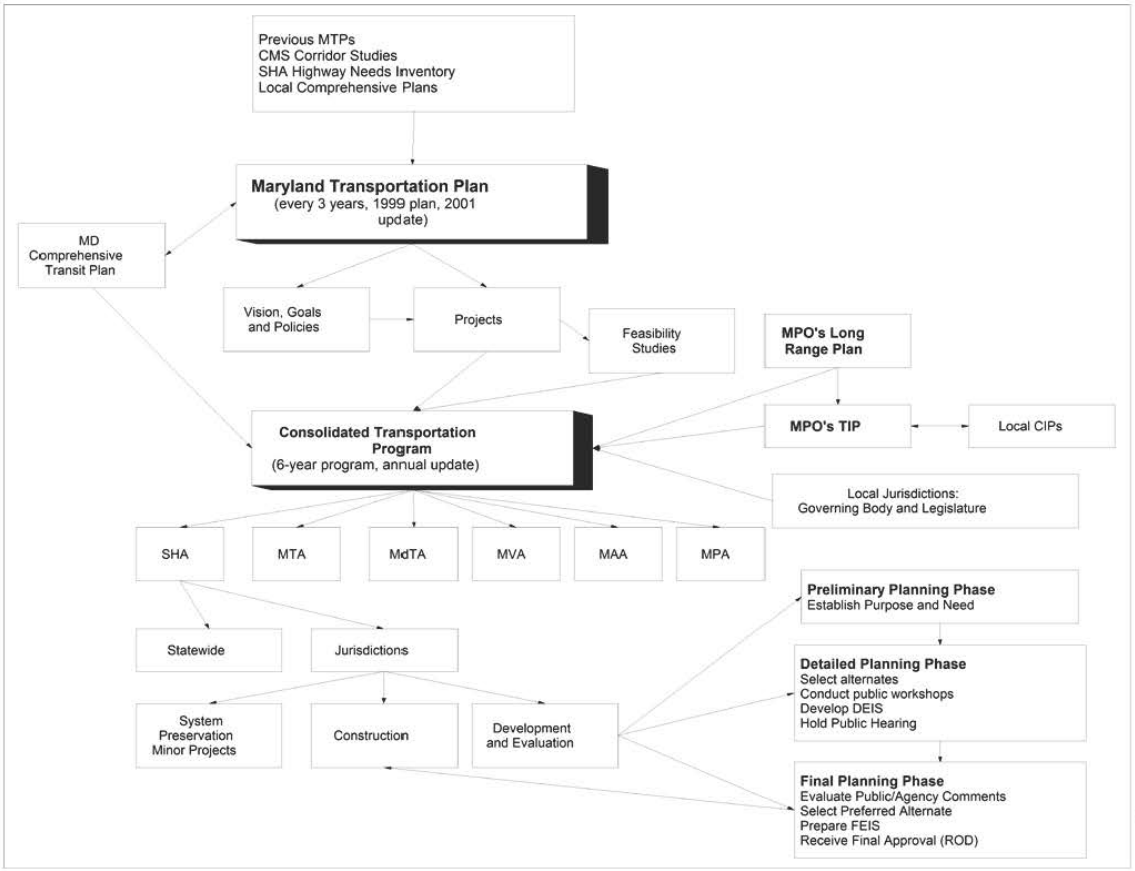
HNI

The Highway Needs Inventory (HNI) is a list of state highway improvement needs to be evaluated. HNI is a framework for planning and investment on state highways in the future.

TTF

The Transportation Trust Fund (TTF) is separate from the rest of the state budget. It addresses state revenues and expenditures on transportation, and includes funding sources for highway, transit, and other modes of transportation.

The following illustration describes the State transportation planning and investment processes.



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PFA Law

"Growth-related" major transportation projects are required to be located inside PFAs unless an exception is approved according to the PFA law. The intent of the State Smart Growth Act is to provide adequate transportation facilities and services to strengthen existing communities and support development in PFAs.

Since the inception of the 1992 Maryland Economic Growth, Resource Protection, and Planning Act and the 1997 Smart Growth and Neighborhood Conservation Act, MDOT addresses transportation policies and programs to support Smart Growth. MDOT programs, such as Community Safety and Enhancement, and Streetscape, Sidewalk and Bicycle Facility Retrofits, support local efforts in Smart Growth, Complete Streets and community sustainability.

12 Visions

The State's 12 Planning Visions provide clear direction on integrating transportation with land use to encourage TOD and smart growth land use patterns. They also call for investing multimodal transportation system facilities to enhance movement of people, goods and services within and between population and business centers. Implementation of the new planning visions will be accomplished at all state, regional, local and interstate levels.

Regional/MPOs Roles in Transportation Planning Process

For any urbanized area with population greater than 50,000, a metropolitan planning structure is required to ensure transportation investments are based on a continuing, collaborative, and comprehensive planning process. The process is led by Metropolitan Planning Organizations (MPOs) made up primarily of representatives from local governments and transportation authorities.

Other federal, state, and local agencies whose missions are influenced by transportation planning are encouraged to participate in the metropolitan planning process. Increasing funding levels for MPOs through SAFETEA-LU has enhanced the metropolitan planning process, required consultation with MPOs, and promoted consistency between metropolitan area transportation improvements and State and local growth policies and economic development patterns.

Other MPOs

Other MPOs in Maryland include the National Capital Region Transportation Planning Board (TPB), the Baltimore Regional Transportation Board (BRTB), the Cumberland MPO, the Hagerstown-Eastern Panhandle MPO (HEPMPO), Salisbury/Wicomico Area MPO, and Wilmington Metropolitan Planning and Coordinating Council (WILMAPCO). The State and MPOs work collaboratively in preparing a number of transportation documents, including:

Regional Long Range Plan

A regional transportation plan is a plan covering at least 20 years' horizon and including the preferred and financially-constrained multimodal transportation projects and strategies to achieve the identified regional transportation goals and policies. The Long Range Plan must meet the applicable federal and state requirements.

Transportation Improvement Program (TIP)

A TIP is a short range fiscally-constrained transportation program produced annually to include the region's federal funded multimodal projects and serves as the implementation arm of the long-range plan.

Statewide Transportation Improvement Program (STIP)

A STIP is a 5-year fiscally-constrained, prioritized set of federally funded projects plus regionally significant State and local projects compiled from local and MPOs plans/TIPs. STIP is required to obtain federal funding.

The Clean Air Act Amendments of 1990

The Baltimore and Washington metropolitan regions and some counties in other MPO regions in Maryland fall in a Non-Attainment category. Regions in non-attainment of federal air quality standards must evaluate their long and short range plans for conformity with the 1990 Clean Air Act, which stipulates that transportation projects in a TIP cannot lead to further degradation in a region's air quality, but should begin to improve the air quality and meet the region's emission budget.

Regional plans and Smart Growth

The state's Smart Growth legislation, 1992 Planning Act, local comprehensive plans, and regional transportation plans and programs should be considered together for consistency with SAFETEA-LU.

Local Role in Transportation Planning

Local jurisdictions play a major role in local transportation planning and investment. Required by Article

66B, a local comprehensive plan must include a transportation element in which planning and improvement on roads, transit, pedestrian and bicycle facilities and other applicable modes of transportation should be addressed. A local transportation plan or element of the comprehensive plan should address transportation goals, policies, and improvement needs for both local and State facilities and services. Project recommendations from a local plan feed into regional and State transportation plans and programs.

The authority for planning and regulating land use and development gives local jurisdictions a critical role in better coordinating transportation with land use at local, State, regional as well as federal levels of transportation planning. Better coordinated transportation and land use planning is essential for producing an efficient multimodal transportation system and achieving smart growth outcomes.

Local Smart Growth land use patterns and community design foster more balanced, efficient, and sustainable multimodal transportation systems while strategically planned and invested transportation systems reinforce livable community objectives and Smart Growth.

Local jurisdiction's buy-in for better land use and transportation planning is vital for the success of State and regional Smart Growth policies and the federal livability initiative. The State holds a particular interest in the relationship between transportation and land use. Required by the Smart Growth Act, Maryland began a concerted effort to direct transportation improvements to Priority Funding Areas in support of viability of existing communities and sustainable growth in PFAs. This is in recognition that the transportation infrastructure required to support dispersed low density patterns of development is no longer affordable. Without supportive land use planning and development at the local level, regional transportation, land use, and Smart Growth visions won't be realized. This also applies to the success of any future federal sustainable and livable initiatives.

What to consider when preparing the local transportation plan

Requirements

The Land Use Article includes broad requirements for the transportation element of a local comprehensive plan. The requirements address facility types, patterns, locations, time frame, and improvements. The transportation element, generally, should address:

- proposals for the most appropriate and desirable patterns for the general location, character and extent of the channels, routes and terminals for transportation facilities, and for the circulation of persons and goods at specified times as far into the future as is reasonable;
- bicycle and pedestrian access and travelways; and
- an estimate of the probable utilization of any proposed improvements."

The Transportation element may include all types of highways and streets, bicycle ways, sidewalks, railways, waterways, airways, routings for mass transit, and terminals for people, goods, and vehicles related to highways, airways, waterways and railways.

Basic information for a transportation element

Existing facility inventory: roads, a roadway classification system, traffic data, bridges, sidewalks and bikeways, transit routes and service frequency, transit ridership, stations and bus stops, car-pooling, telework, airports, rail freight lines, ports and marinas, parking and associated maps.

Issues and problems: roadway safety and operation issues, inadequate transit service, missing sidewalks and bikeways, incompatible land uses with airports, current State's CTP projects and their issues, and inter-jurisdiction issues if any

Policies (goals and objectives): support for other elements of the comprehensive plan, consistency with the State's Smart Growth policies, preserving existing systems, multi-modal system (policies for each mode); inter-modal connection and system linkages, and etc.

Recommendations: Include capital projects and/or recommended studies for each mode, new programs and services, reasons and purposes of those recommendations.

Implementation: identify priorities, State, Federal and local and developer funding sources, standards and codes, and implementation timeframes and procedures

Important Policy Issues to Consider

A transportation plan element should coordinate transportation and land use planning to support Smart Growth and Smart Transportation by:

- Defining different transportation policies and recommendations for designated growth areas/Priority Funding Areas and for rural areas (How does the transportation element support development and redevelopment in growth areas? Determine also how the element helps to protect rural areas.
- Focusing transportation investments within defined growth areas to improve the areas' transportation accessibility. Such accessibility includes all forms of transportation. The transportation plan should promote equal access by pedestrians, cyclists, public transportation and cars. This should create an interconnected system that provides not only car connections but also sidewalks, bike lanes, trails and bus lines between residential areas and schools, commercial facilities, recreational areas, and employment centers. Known as **Complete Streets**, this strategy is gaining acceptance across the country because it addresses fair and equitable treatment to all segments of society, not just those who are driving cars.
- Limiting highway investment outside of growth areas to those that address health and safety
- concerns. Wise transportation investments can assist in the preservation of farmland, environmentally sensitive areas and historical/cultural landscapes by limiting unnecessary road widening investments, limiting access to adjacent properties along highways, employing appropriate development standards at interchange areas, and linking policies for highway capacity investments to areas within PFA's or directly connecting PFA's. In rural areas, also consider the needs of public transportation for elderly, disabled and economically disadvantaged.
- Planning for mixed-use, transit-oriented land use patterns and pedestrian friendly design options and supporting them with adequate pedestrian/bicycle and transit facilities and cost- effective roadway network to create livable communities. Taken together, all of these initiatives should increase transportation choices and reduce VMT.
- Considering potential impacts of proposed bypasses of Main Streets and recognizing that a bypass may not be an appropriate solution to traffic congestion. It may be that congestion is precisely what Main Street businesses need in order to remain economically viable. Consider innovative ways to address circulation, e.g., building interconnected local roadway network, access management, coordinated land use planning along a major highway.
- Coordinating land use with highway access management to prevent strip developments along highways. Some strategies to be considered include:

- Developing access management policies for major highways by consolidating and limiting access points to certain strategic locations.
- Building interconnected local roadway network systems along both sides of a major highway to channel local traffic and protect capacity and safety of the major highway.
- Strategically planning more intense land uses at major intersections and protecting environmentally sensitive areas and rural open spaces along the highway corridor.

Planning Tools Affecting the Transportation Plan

Zoning Regulations

Low density dispersed development drives up roadway and transit costs. Driving becomes the only viable means of transportation. Trips from rural areas significantly add to the congestion in urban areas. TOD, mixed-uses, compact and high density zoning regulations support transit, bicycle travel, walkable communities.

Subdivision and Site Plan Requirements

The provision of sidewalks, bikeways, trails, transit amenities, and roadway circulation are key elements of subdivision and site plan submittals that can be addressed in local subdivision and site plan ordinances. Interconnecting these transportation facilities can make communities more livable.

Linking Transportation with Land use planning

Mixed-use development lessens the demand for trip generation. Transit oriented land uses produce fewer car trips. Parking regulations can be improved by instituting maximum parking requirements, shared parking and incorporating automobile and transit usages. Parking lots can be integrated with the pedestrian environment in such ways that increase pedestrian safety and improve aesthetics.

Site Plan and other development regulations can be modified to require plans for walkable and bikeable communities using complete streets principles and techniques. Access management regulations and transportation operation/safety should be taken into consideration. Small area roadway networks should prioritize grid patterns over cul-de-sacs to provide better linkages and circulation networks for the community.

Road Design Standards

Road design standards have a profound effect on the levels of safety and utility for all users, from the size of the roads, curb radii, and the resultant effect it has on speed and safety for cars and people.

Road design must consider auto sight distance, and pedestrian and bicycle movements, but also parking, landscaping, stormwater management and drainage.

Adequate Public Facility Ordinances (APFOs)

Examine the pros and cons of APFO's, as discussed earlier in a separate section. As for transportation planning, a jurisdiction should consider a higher APFO standard for rural areas and a lower and flexible standard for designated growth areas. Implementation of APFOs with targeted infrastructure investments to improve transportation facilities in growth areas can help accomplish smart growth objectives. APFOs should consider multimodal transportation facilities to address adequacy issues. Local APFOs can be written to allow for developers to be given credit for the provision of bicycle, pedestrian and transit improvements and other TDM improvements. This approach will help local jurisdictions to start building walkable, bicycle friendly, and transit accessible communities while reducing the need for widening intersections and roadways as the only transportation solution for supporting growth.

Local Capital Improvement Program

The local CIP should prioritize investment in recommended transportation projects by including roads, sidewalk and bikeway retrofits, parking, including bicycle parking facilities and transit amenities, if applicable.

Traffic Impact Study

Requiring a traffic impact study for a proposed development ensures that needed roadway and other transportation facility improvements will be identified along with any necessary planning and funding to support the development. A traffic impact study requirement can be structured to give credits for mixed-use, transit, and pedestrian and bicycle facilities to encourage multimodal solutions and increase transportation choices for residents and businesses.

Other Transportation Planning Tools

Impact fees and excise taxes are two types of tools that may be considered when discussing potential funding sources for transportation projects. Formulas for funding can be based on the impacts measured by the number of trips generated by the development.

Other tools for consideration include Overlay Zones, such as transit district overlay zones, where special guidelines, zoning controls and design requirements can be used to encourage Transit Oriented Development. Similarly, highway corridor overlay zones protect corridor view sheds, signage and building design features, and provide compatible land use options to enhance and protect area character.

Module Four: Review Questions

1. In the State of Maryland, the Critical Area is found :

   A. In the areas most important to each jurisdiction.

   B. The coastal areas originally mapped by staff at DNR in 1987.

   C. All lands within 1,000 feet of the edge of tidal waters, or from the landward edge of adjacent tidal wetlands.

   D. Wetlands of critical state concern.

2. Which of the following is not a purpose of Maryland's erosion/sediment control and stormwater management programs?

   A. Reduce stream channel erosion.

   B. Reduce pollution and siltation.

   C. Reduce local flooding caused by land use changes.

   D. All are goals of the Stormwater program.

3. What triggers the Forest Conservation Act requirements?

   A. Application for a subdivision permit on a tract of 40,000 square feet or more.

   B. Application for a grading permit on a tract of 40,000 square feet or more

   C. Application for a sediment control plan on a tract of 40,000 square feet or more

   D. All of the Above.

4. Federal transportation legislation funds which of the following?

   A. Highways.

   B. Transit.

   C. Pedestrian and bicycle facilities.

   D. All of the Above.

5. Complete streets are:

   A. Streets that connect to other parts of the road network.

   B. Paved with curb and gutter.

   C. Streets that every segment of the population can utilize safely and effectively.

   D. Not practical in auto dependent areas.

Planning Commission, PlanningBoard and Board of Appeals Education Course

Developed pursuant to Section 1-206 of the Land Use Article, Annotated Code of Maryland.

MPCA
Maryland Planning Commissioners Association

Maryland
DEPARTMENT OF PLANNING