

March 14, 2006

The Comprehensive Development Plan Worcester County, Maryland

Preface: Updating the Plan

On February 15, 2001, the Worcester County Planning Commission determined by majority vote that *The Comprehensive Development Plan, Worcester County, Maryland* adopted April 11, 1989 and amended by the *1997 Supplement* should be updated. This recommendation recognized that since the plan's adoption, relevant factors have materially changed and our understanding of these factors and pertinent science has advanced.

Chapter 1: Introduction

Worcester County is nearly unique. In 2005, it would be difficult to find a similar seaside county with a premier family resort, compact communities served by near-by shops and stores all of which are bounded on the west by rich working farms and woodlands and on the southeast by wild barrier island parks. Blessed with such richness and diversity, Worcester County faces a challenge to continue its high quality of life.

Since the first Native Americans occupied the Delmarva Peninsula, people have relied on the area's natural bounty. Over time, much has changed, yet today the county still relies on this same foundation for its well-being. For this reason, the *Comprehensive Development Plan Worcester County, Maryland* (the plan) focuses on maintaining and improving the county's natural resource base while providing for its sustainable use.

Worcester County's formal planning began in 1965 with its first

comprehensive plan. In the mid 1970's The Urban Pathfinders' plan was followed in 1989 by the Redman and Johnson plan. The latter was updated in 1997. The county's planning philosophy evolved from a development emphasis to a priority on resource conservation and protecting its rural and coastal character.

Realizing that air, water, and land could be overused and despoiled, the plans increasingly moved toward resource protection. If such damage occurred, local residents' quality of life and tourism, the economic linchpin, would suffer. Preserving the county's natural resources and character will therefore, continue to be this plan's main purpose.

This chapter provides background on current and future trends affecting growth and the county's quality of life. It also lays out the plan's overall goal and objectives. Following this, the remaining chapters cover land use and other community issues. Each issue is addressed with its own goals, objectives and recommendations. Finally, the

plan's implementation strategy completes the plan.

The plan is organized in the following chapters:

- Introduction
- Land Use
- Natural Resources
- Economy
- Housing
- Public Infrastructure
- Transportation
- Implementation

The plan's purpose is to provide the following:

1. An official statement of goals, objectives, policies and aspirations for future growth, development and the quality of life
2. A set of guidelines for the government and private sectors to maximize the county's quality of life
3. A strategy addressing current and anticipated challenges
4. Sufficient policy guidance to effectively manage natural, human and financial resources



Development accelerated in the late 1990's

Development Trends

For most of the county's history, development was influenced by resource availability and distance to markets. The Eastern Shore's isolation limited its

economic growth. During this time, agriculture, forestry, and seafood harvesting comprised the economic base.

This isolation ended in the 1950's and 1960's. Construction of the Chesapeake Bay bridges, one from Kent Island to the Western Shore at Annapolis and the southern bridge and tunnel from Cape Charles to Virginia Beach were completed. Connected to the Western Shore and beyond, the hospitality industry blossomed. It now serves, along with agriculture, as the county's economic engine. Tourism employs over 60 percent of the county's labor force¹.

Nationally, regionally, and locally a disturbing trend has emerged. Land consumption per home has been steadily increasing. The Maryland Department of Planning in a statewide land consumption study found that between 1973 and 1997 Maryland's population grew by 30 percent while the amount of residential land grew by 66 percent.²

This study identified the following resulting impacts:

1. Service costs for low-density development are significantly higher.
2. Vehicle miles traveled, traffic congestion, air pollution, and new road demand increases.
3. Sewer and other new infrastructure demand grows burdening taxpayers.
4. Forest and habitats are fragmented and decreased in value.
5. Agriculture is threatened.

¹ Maryland Travel Council, et. al "Maryland's Tourism: A Revenue Powerhouse", *Tourism Counts*, 1998.

² Maryland Department of Planning; *Maryland's Changing Land: Past, Present and Future*; Baltimore, 2001, page 3.

6. Imperviousness increases and water quality declines.
7. Existing growth areas are under used along with their significant public investments.

Although Worcester County has historically experienced relatively dense development due to Ocean City's high proportion of multifamily housing, this trend will change as development moves inland. One of this plan's fundamental purposes is to continue the county's concentrated development pattern and to avoid the impacts listed above. This involves choosing the proper location and method for future development along with anticipating a sustainable amount of growth.

Existing Growth Areas

Rapid development in the latter half of the twentieth century changed Ocean City from a remote fishing village into a densely developed resort. Ocean City contains high-rise condominiums, mass transit and a three-mile long boardwalk. Nearing complete build-out, Ocean City has moved into its redevelopment stage. Compared to the past, a more modest growth rate is anticipated for Ocean City.

West Ocean City, an unincorporated area straddling US 50 just west of the Harry Kelly Bridge, served as the bedroom community for Ocean City's work force. Now a seasonal housing compliment to Ocean City, as well as, its traditional bedroom community role, West Ocean City also approaches build-out.

In 1968, Ocean Pines was founded by Boise Cascade, Inc. Initially, a summer cottage supplement to Ocean City, it grew slowly and was a speculative venture. In the 1980's and 1990's, development took off. It was normal for

400 new homes to be constructed annually.

Ocean Pines now accommodates mostly year-round and retirement living. Its permanent population outnumbers all the county's incorporated towns. Like Ocean City, "The Pines" also nears build-out and will see the remaining 500 vacant lots infilled.

The St. Martin's Neck, the Route 611 corridor, and "South Point" (the Sinepuxent Neck), have all experienced varying levels of development. The Route 611 corridor's northern end begins with commercial development moving south blends into residential uses. Both St. Martin's Neck and South Point host large-lot development and rural "gentlemen farms." Forest fills the remainder of the landscape.

Berlin, Snow Hill, and Pocomoke City have not participated in the aggressive resort growth. Berlin, due to its proximity to Ocean City and local leadership, has experienced a downtown revitalization. Tour bus traffic in the fall can be substantial as visitors visit the curio shops and art galleries lining Main Street. Residential development pressure of late has begun to grow. A variety of developments of single family and town homes are underway; they range from 27 to over 300 units.

Snow Hill, the county seat, has grown slowly. The downtown has transitioned from "Main Street" to an antiquing center with restaurants and other services. Some infill residential development has occurred. Development activity has increased and a major development proposal has been made which would expand the town



The towns have seen a surge in development pressure significantly. Should this proposal move forward and market absorption occur a more than doubling of Snow Hill’s population could result.

Pocomoke City has experienced highway commercial and limited residential growth. Downtown revitalization is centered on the “Pocomoke Discovery Center”, a museum and learning center and the Marva Theatre, which has been rejuvenated. Plans for an increased waterfront development are underway.

Efforts to stimulate tourism will increase Pocomoke’s attractiveness to the county’s tourists. The Wallops Island Space Flight Center may have a significant influence on Pocomoke’s future development. Like Snow Hill, an increase in residential development pressure is occurring.

Table 1-1 below summarizes population growth and change for the county, its municipalities and Census designated places.

Expanding the Season

Efforts to supplement the peak season by extending tourism into the spring and fall “shoulder months” have succeeded. This combined with year-round population growth has significantly increased annual business activity. Of particular note, golf course construction has had a strong positive impact on “shoulder month” activity. Before the 1990’s, there were few golf courses in Worcester County. Today, more than a dozen courses provide championship to executive play. This change bolstered off-season visits, providing income to hotels, restaurants, and the golf industry. However recent trends show golf rounds

Table 1-1 Population Summary

	Year		Amount Change	Percent Change
	1990	2000		
Worcester County	35,028	46,543	11,515	32.9
Berlin	2,616	3,491	875	33.4
Girdletree*	N/A**	117	N/A**	N/A**
Newark*	N/A**	339	N/A**	N/A**
Ocean City	5,146	7,173	2,027	39.4
Ocean Pines*	4,251	10,496	6,245	146.9
Pocomoke City	3,922	4,098	176	4.5
Snow Hill	2,217	2,409	192	8.6

*Census Designated Place
 **Figures only available for Census 2000
 Source: Census 2000

have stabilized and may be declining, so further expansion appears doubtful.

The expansion and programming of the Roland E. Powell Convention Center in Ocean City adds visitation during the off-season. The Center has been successful in drawing many events and is a mainstay in winter.

Efforts to increase eco-tourism, such as, birding, regional culture, and heritage attractions are also succeeding. Such efforts draw a broad, well-heeled clientele whose trade is less weather dependent than other resort visitors.



Natural resources abound in Worcester County

Other dynamics are at work. Growth in shopping and antiquing opportunities, reductions in length of visits, expanded arts and cultural offerings, growth in visits from outside the normal “tourist-shed” (New Jersey, New York and Delaware) will all have an effect. Another trend worth noting is that a larger percentage of summer homes are now bought by high-end buyers. These buyers do not rent their homes and use them only for brief periods during the year. While all positive, it is difficult to gauge the precise impact of these trends.

Future Trends

To assess future growth, past trends can serve as an initial guide. It is reasonable to expect that near-term growth will be

influenced by the same factors driving it now. However, there are physical and other factors affecting these trends.

In the past, waterfront sites dominated land development demand. The developable supply of such land has declined and is now scarce. This is due to the completion of water-oriented development within Ocean City, Ocean Pines and West Ocean City. The Atlantic Coastal Bays Critical Area Program’s land use policies have also limited supply of waterfront land. This has shifted growth pressure inland.

The volume of growth will continue to be influenced by second home demand and in-migration. In many cases, once a second homebuyer retires they become full time residents. This trend has increased recently and will continue as the “baby-boom” generation progresses to retirement. Secondary population growth will result from the need for support services and its resulting job creation. This second factor stimulates in-migration.

To assess second home demand, visitors’ point of origin and population trends in these locations is a useful gauge. Ocean City surveyed its visitors and found that they came from the locales listed in Table 1-2.

Table 1-2 Home State and Percent of Visitors to Ocean City

<u>State</u>	<u>Percent</u>
Delaware	3.2
Maryland	35.4
New Jersey	5.6
New York	6.2
Pennsylvania	29.3
Virginia/DC	6.0
Ohio	2.5
West Virginia	2.8
Other	9.0

Maryland and southern Pennsylvania provide the largest share of the county's visitors. Both areas project steady growth for the planning horizon. This indicates that tourism should at least remain steady and will likely continue to grow.

Since 1980, in-migration accounted for the county's total net population growth.³ As noted above, households purchased vacation homes here and then retire to them. The average age of these new arrivals has been in the mid-forties; many are retirees. These trends will continue through the planning period. Table 1-3 below summarizes population trends in our "source areas."

It should be noted that southern Pennsylvania experienced a thirteen percent growth rate for the last Census period.⁴ With the entire source region projected to continue to grow, Worcester

County's population and housing stock can be expected to grow accordingly.

Natural Population Change

Natural change or the net number of births versus deaths has had a negative impact on the county's growth rate. From 1990 to 2000, deaths exceeded births by 150 persons. This component of population change will continue to have a minimal effect on the county's growth.

The above factors indicate that Worcester County can expect continued population and housing growth. This growth will likely occur in cycles, with rapid growth followed by more stable periods. The plan's development philosophy concentrates growth and works to reduce its impacts. To achieve this, the plan contains a program of

Table 1-3 Regional Population Trends

<u>Region</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>Percent Change 1970 to 2000</u>
Baltimore	2,071,016	2,173,989	2,348,219	2,512,431	21.3
Washington	1,269,455	1,358,916	1,635,788	1,870,133	47.3
Maryland	3,923,897	4,216,933	4,780,753	5,296,486	35.0

<u>Region</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>% Change From 2000</u>
Baltimore	2,697,000	2,741,200	2,816,100	12.1
Washington	2,071,300	2,233,900	2,355,400	25.9
Maryland	5,722,800	6,083,125	6,348,400	19.9

Source: Adapted from Maryland Department of Planning, Planning Data Services, Preliminary Population Projections for Maryland's Jurisdictions, Baltimore, MD, July 2001.

³ US Census Bureau, Census 2000, Table DP-2, and Worcester County Commissioners, *Supplement to the 1989 Comprehensive Plan*, 1997, p. 8.

⁴ Department of Community and Economic Affairs, Pennsylvania, 2002 Annual Report on Land Use, Harrisburg, Pennsylvania, 2002.



Recreation amenities are available to residents and visitors



Pocomoke City anchorage

growth management, which addresses the timing, location and nature of development and its service needs. The basic elements of the philosophy are the plan’s general goals, objectives and recommendations, which follow.

Goals, Objectives, and Recommendations

To clarify the purpose of goals, objectives and recommendations, the following defines each of these terms.

Goal—An ideal future condition to which the community aspires. A goal is valued for itself, not as an instrument to achieve something else. It is usually expressed in general terms, using adjectives and nouns. It is usually not quantified. For

example, a community might desire to preserve its historic downtown, maintain environmental quality, or promote equity.

Objective—An intermediate step toward attaining a goal; it is more tangible and specific. It is measurable and attainable often time-specific. For example, water quality meeting EPA standards might be one of many objectives supporting the goal of environmental quality.

Recommendation—A specific proposal for action that will implement the goals and objectives. Recommendations are made for the government and the private sector. Recommendations may include legislation, voluntary activities, regulations, programs, projects, and policies.

Goal Statement:

This plan’s goal is to maintain and improve the county’s rural and coastal character, protect its natural resources and ecological functions, accommodate a planned amount of growth served by adequate public facilities, improve development’s compatibility and aesthetics, continue the county’s prosperous economy, and provide for residents’ safety and health.

When defining the “rural and coastal” character, it is difficult to be specific. One approach is to define what it is not. The Congress for New Urbanism sums up the alternative to the above vision as, “the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of valuable open space and the erosion of society’s built heritage.”

Randall Arendt points out in *Rural by Design* “the disfigurement of approach roads by strip commercial development, and the wholesale conversion of farmland and woods to an unrelenting blanket of house lots and streets, is not inevitable. It is really a matter of choice.” Mark Twain told us that, “in a democracy, people usually get what they deserve.”

Objectives

1. Maintain and enhance the county’s livability
2. Provide adequate public health, safety, social, recreation, and waste disposal services
3. Protect drinking water supplies
4. Preserve and protect natural resources and their ecological functions
5. Facilitate the county’s economic activity
6. Provide for adequate housing opportunities for all income and age groups
7. Maintain and enhance the county’s cultural and historic assets
8. Continue the viability of the agriculture and forestry industries
9. Accommodate planned future growth through designated “growth centers” with development standards designed to minimize environmental and habitat disruption
10. Undertake land preservation and other methods to preserve existing and establish new open space and “greenways” to ensure habitat diversity and corridors throughout the county
11. Provide for adequate public services to facilitate the desired amount and pattern of growth
12. Encourage development of traditional communities that reduce

reliance on vehicles and are compatible with Eastern Shore vernacular architectural style



Coastal character is to be preserved

Conclusion

Worcester County evolved from its native hunter/gatherer beginnings to a plantation economy and then to an agricultural and tourist-based economy. Recent growth has been significant and has concentrated in the county’s northeastern corner. Traditional growth locations are approaching build-out.

The challenge ahead is to continue the “smart growth” pattern. The county must take careful steps to ensure its quality of life remains high. This will require preservation of our rural and coastal character while expanding our economic and social prosperity.

Growth over the last several decades has been trending upward with rapid growth followed by more stable periods. This cycle is expected to continue. Traditional growth factors remain strong: tourism, second home development, retirement, and employment growth. Second home growth largely drives housing demand and will continue to do so. The population on average will age, so appropriate services should be provided.

Critical to the county’s quality of life and economy has been its rich natural

resource base. Our unspoiled rural and coastal assets are becoming increasingly valuable as these qualities decline and disappear in other areas. Stewardship is critical.

The wisdom of planning for concentrated development and maintaining our character spared Worcester County many of the ills of urban sprawl. With proper planning, high quality development standards, strategic provision of public services, and provision for adequate densities, our success will continue. The next chapter addresses the plan for future land use and its composition.

Chapter Two: Land Use

Worcester County has succeeded in maintaining its rural and coastal character, preserving the integrity of its agricultural areas, concentrating its development and meeting many of its other planning objectives. To continue this success, this chapter recognizes what has changed as well as what remains the same. It provides a land use strategy to implement the plan's overall goal and objectives. This chapter begins with the land use goal and objectives, which is followed by recommendations for action.

Goal, Objectives, and Recommendations

Goal

The land use goal follows:

Worcester County will maintain its rural and coastal character, protect its environment and natural resources, and locate planned development for approximately 18,000 new residents in designated growth areas at appropriate intensities and by infilling existing communities.



Rural and coastal character will be an increasingly valuable asset to the county

Determination of growth area suitability shall be based on the following criteria:

1. To limit environmental damage
2. To reduce land consumption outside existing communities
3. To minimize negative impacts on natural, economic, and social resources
4. To efficiently provide adequate public facilities and services
5. To minimize adverse impacts on existing communities and to foster a cooperative approach to land use planning and development



Environmentally sensitive development implements the plan's land use goal

It is the goal of the Commissioners in adopting this Plan and in the creation of growth areas immediately adjacent to or in close proximity to incorporated towns to foster a solid and constructive working relationship between the county and each of the individual towns. The county and the towns should work together on future growth plans using a cooperative planning approach. The county has designated growth areas adjacent to or in close proximity to the towns but has also established growth limitations for those areas. Growth

Areas should be annexed into the town prior to or at the time of development and at that time limitations shall be established on the development. Those limitations along with other appropriate matters should be the subject of an annexation agreement to which the town, the county, and the developer are parties.

It is the County Commissioners' intent to limit the overall and the individual growth area population and dwelling units to an amount not to exceed the Residential Unit Targets (RUT) contained in Table 2-1. The Commissioners recognize that while the growth areas may be of sufficient size to allow more development than the RUT; the RUT shall set the total number of dwellings in each growth area.

Table 2-1 Growth Area Residential Unit Targets (RUT)

<u>Growth Area</u>	<u>Acres</u>	<u>RUT</u>	<u>Potential Additional Population</u>
Berlin	1,326.1	2,910	6,781
Pocomoke	495.1	1,606	3,743
Showell	359.6	1,000	2,333
Snow Hill	<u>680.3</u>	<u>2,207</u>	<u>5,143</u>
Totals	2,861.1	7,723	18,000

When growth areas⁵ are annexed into towns, the town shall be primarily responsible for determining the specific development locations and RUT allocations within a growth area, but this shall be done in cooperation with the county.

⁵ The Showell growth area includes the lands currently identified on tax map 15 as parcels: 34, 35, 38, 39, 40, 41, 50, 168, 169, 178, 243, and 272.

Growth area designation does not in and of itself require that such areas be rezoned from a less intense zoning to more intense growth area zoning. Rather the growth area designation is a necessary condition for growth-oriented zoning akin to individual rezoning case requirements demonstrating a substantial change in the character of the neighborhood or strong evidence of a mistake in the original zoning⁶.

The County Commissioners make the residential unit targets part of this plan, and they shall be implemented by amending the county zoning ordinance or the towns' zoning when annexed.

In order to promote orderly growth and foster a cooperative relationship between the towns and the county, development in growth areas, which are located adjacent to or in close proximity to the corporate limits of a municipality, shall be contingent upon all of the following conditions.

1. Annexation by the municipality.
2. Water, sewer, and other services shall be provided to the development by the municipality.
3. The developer shall be responsible for all impact fees, excise taxes, adequate public facilities fees, and other impositions including those payable to the County.
4. The annexation shall be subject to an annexation agreement to which the county shall be a party.

⁶ *Stratakis v. Beauchamp*, 268 Md. 643, 652-53, 304 A.2d 244, 249 (1973).

It is the intent of the County Commissioners and this plan that development in such growth areas only occur if the four conditions are satisfied, but the Commissioners recognize that in some cases the conditions may not be applicable, rational, or in the interest of good planning. In such cases, the Commissioners may permit development in such growth areas without the conditions being met. Therefore, in the event a municipality refuses to annex the property under terms satisfactory to the County Commissioners, then development in the growth area may proceed in the county outside of the town's corporate limits if approved by the County Commissioners in accordance with and governed by all legal requirements and procedures without satisfying the contingencies in this provision.

Objectives

The land use objectives below provide intermediate actions necessary to achieve the land use goal:

1. Establish population and residential unit targets to control the amount and rate of population and housing growth
2. Continue the dominance of agriculture and forestry uses throughout the county's less developed regions
3. Maintain the character of the county's existing population centers
4. Provide for appropriate residential, commercial, institutional, and industrial uses
5. Locate new development in or near existing population centers and within planned growth centers
6. Infill existing population centers without overwhelming their existing character
7. Work with municipalities to develop annexation guidance policies that encourage infill within a municipality and then provide for logical community extensions
8. Regulate development to minimize consumption of land, while continuing the county's rural and coastal character
9. Minimize conflicts among land uses due to noise, smoke, dust, odors, lighting, and heavy traffic
10. Locate employment centers close to the potential labor force
11. Set high environmental standards for new development, especially in designated growth areas
12. Develop green infrastructure system
13. Expand the protection of the Coastal Bays and the Pocomoke River drainage basins through watershed plans and their implementation
14. Encourage the use of mass transit and non-motorized transport
15. Balance the supply of commercially zoned land with anticipated demand of year-round residents and seasonal visitors
16. Locate major commercial and all industrial development in areas having adequate arterial road access or near such roads
17. Discourage highway strip development to maintain roadway capacity, safety, and character
18. Update commercial development standards to reflect changes in

- scale and intensity (big box development)
19. Limit rural development to uses compatible with agriculture and forestry
 20. Direct new development in growth areas to planned communities
 21. Promote mixed use development
 22. Design new development's architecture and landscaping to visually improve its surroundings
 23. Protect and promote the understanding and appropriate use of the county's cultural resources through the implementation of the *Lower Eastern Shore Heritage Plan* and its Priority Preservation Areas (PPAs)
 24. Recognize and foster existing traditional black communities
 25. Implement the comprehensive plan through existing and appropriate additional regulations and policies along with public education and public investments



Snow Hill has a rich heritage

Recommendations

The Plan classifies the county into ten land use categories. These categories distinguish between existing and future land uses and provide suitable recommendations to implement the

above goal and objectives and to create an orderly development pattern.

Municipalities—Although outside the county's land use jurisdiction, the incorporated towns (Berlin, Ocean City, Pocomoke, and Snow Hill) will play a vital role in the county's land use strategy. The towns with their existing public services are expected to take up much of the county's projected growth. This will occur through infill and through logical annexations. To minimize unnecessary land consumption, the majority of the towns' growth should occur through infill. Appropriate public service expansions should be planned. Mutual agreement on growth projections and locations should be coordinated between the county and the municipalities.

Existing Developed Areas (EDA)—This category identifies existing residential and other concentrations of development in unincorporated areas and provides for their current development character to be maintained. Recognizing existing development and neighborhood character is the purpose of this designation. Appropriate zoning providing for densities and uses consistent with this character should be instituted.

Surrounding areas have been mapped with one of the other land use designations as appropriate and should not be considered for rezonings by virtue of their proximity to an EDA. Further, the EDAs are anticipated to remain as mapped at least until the next plan review period. This will provide for orderly infill development within EDAs and new community-scale growth in the growth areas.

Not designated as growth areas, these areas should be limited to infill

development. Density, height, bulk, and site design standards should also be consistent with the EDA's existing character.

Examples include Ocean Pines, West Ocean City, South Point, Libertytown, Briddletown, and Germantown. Other small crossroad clusters are included in this category as appropriate.

Caution should be exhibited within these areas to protect green infrastructure and sensitive areas. An example of this is much of the area south of Ocean Pines and north of Gum Point Road. This area is too small to be designated green infrastructure, but it is none-the-less significant for its forests and wetlands. These resources should be protected.

Village—This category is a special case of an EDA. It designates traditional villages that serve as rural centers. Their character should be retained, so they are planned for infill and only limited expansion. Villages are not growth areas. Such areas are not planned for sanitary services or average densities of greater than one unit per acre. Any additional growth should be of very limited scope. Villages include Whaleyville, Public Landing, Girdletree, and Stockton.

Growth Areas (GA)—This category designates areas outside incorporated areas that are suitable and desirable for future planned growth. These areas include new and existing locations, which meet the following criteria:

1. Contains limited wetlands, hydric soils, floodplains and contiguous forest
2. Comprised of generally larger parcels (100 or more acres)
3. Located outside of aquifer recharge, source water

protection, and other critical areas

4. Situated to be cost-effectively served with adequate public sanitary and other services
5. Located near employment, retailing and other services
6. Served by adequate existing roadways (Level of Service C or better) or can be readily served

Growth areas identify generalized locations for planned new development. These areas will accommodate most new growth. Densities of up to ten dwelling units per acre should be provided for to reduce consumption of "greenfields" (currently undeveloped sites). Such density will require public water and sewer service. These areas would be "receiving areas" for the transfer of development rights program. Location, layout, and densities should facilitate mass transit service. Adequate transportation and other public facilities must be in place at the time of development.

As noted earlier, Residential Unit Targets have been established for the growth area. These targets have been established to provide orderly growth countywide and for appropriate amounts of growth within each growth area.

A growth area overlay or floating zone requiring best development practices should be developed. These "best" practices will:

1. Identify and protect key environmental features (wetlands, source water⁷ and aquifer recharge protection areas, woodlands, habitat, etc.)

⁷ Source water protection areas provide a buffer around drinking water wells to protect them from contamination.

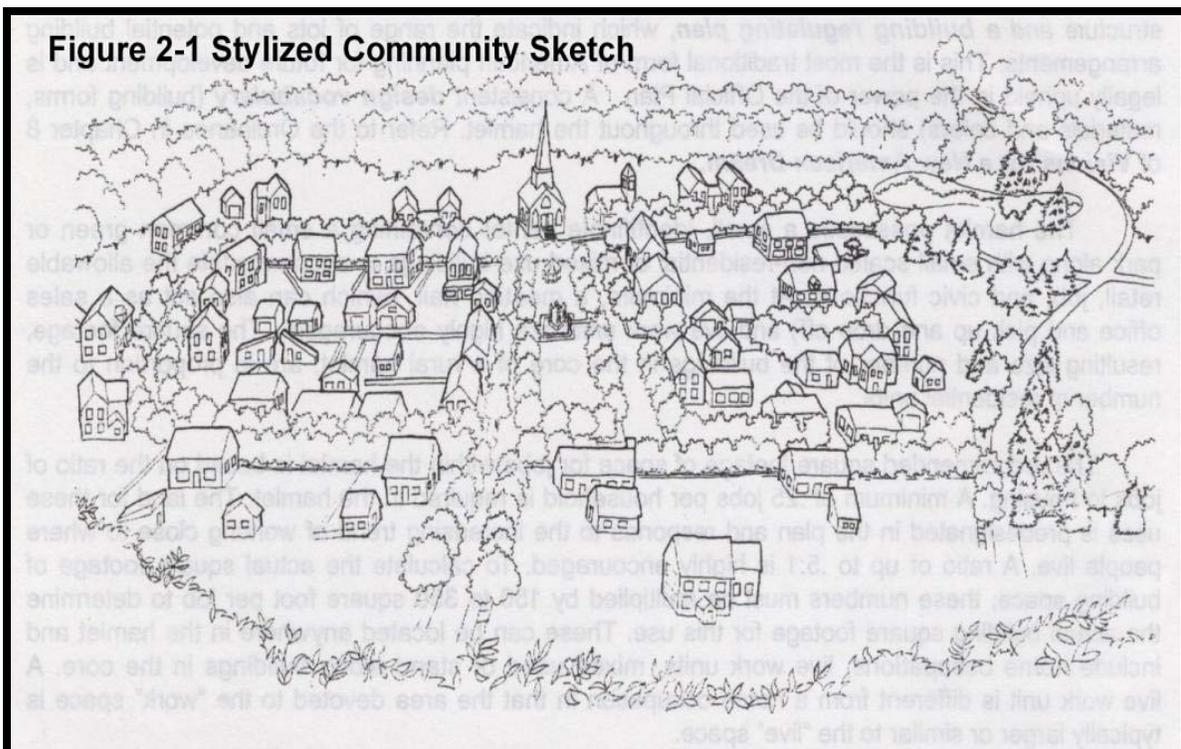
2. Reduce “greenfield” consumption and impervious surfaces
3. Promote street, trail, and sidewalk connectivity to reduce vehicle miles traveled and improve community “walkability”
4. Provide “greenways” within and around developments for environmental and recreational purposes
5. Cluster development to maximize open space
6. Promote mixed-use community centers with declining density toward the perimeter, thus creating a “center”, an “edge”, and a variety of housing types in between
7. Prescribe architectural compatibility standards

These practices will create communities rather than standard tract housing subdivisions. This mixed-use, pedestrian-scale, sustainable

environment with a defined design vocabulary will engender a “sense of place.” This effort should take its design guidance in terms of scale, layout, mixed uses, architectural style, and landscape design from existing county towns and villages. To accomplish this, urban design guidelines should be adopted.

Within growth areas, individual communities or “growth nodes” will be identified. These nodes are sub-areas that:

1. Contain land without serious development constraints. Wetlands, large continuous forests, sensitive species habitat, and the resource conservation areas within the state critical areas are considered serious development constraints. Secondary development constraints include headwater areas, and productive farmlands.
2. Have sufficient undeveloped land with enough large land



parcels (100 or more acres). This provides sufficient raw material for community-scale land assembly

3. Locate constrained lands (wetlands, forests, waterways, and highways) along the node's edge and integrate this land into the "greenway" system
4. Place nodal centers at intersections of minor roadways for improved accessibility
5. Can locate nodes where they can be readily served by sewer, mass transit, and appropriate scale roadways

Growth area development will provide for a variety of densities with the average density greater than three and one-half dwelling units per acre and a maximum core density of up to ten dwelling units per acre. Densities decrease out from the higher density core to a lower density "edge."

Typically, nodes will accommodate from 100 to 700 homes with supporting commercial and institutional uses.

The node's primary development area density residential uses blend with the greenway and surrounding landscape. Growth nodes should have a diameter of about 2,500 feet; this distance is a comfortable five-minute walk from the edge to the core. The core itself should have a diameter of about 1,000 feet. An approximate 1,500-foot band for residential neighborhoods would surround the core.

To blend the node into the landscape, a perimeter of low-density development should be created. This outer band can vary from 400 to 2,500 feet in diameter with densities from two dwellings per acre to lots of several acres or more. Site conditions will dictate the exact width

and configuration of these bands, as they must work around primary and secondary conservation features to minimize environmental disruption. Beyond this band of lower density development, a surrounding natural forested or agricultural greenway should complete the node.

Figure 2-1 above depicts an idealized community layout as envisioned by the plan. It contains a higher density, mixed used core with residential density decreasing toward the perimeter. At the edge, lower density housing is bounded by a greenway.

Commercial Centers—This category designates sufficient area to provide for anticipated needs for business, light industry, and other compatible uses. Retail, offices, cultural/entertainment, services, mixed uses, warehouses, civic, light manufacturing and wholesaling would locate in commercial centers.

Commercial areas by their nature locate on prominent sites and can visually dominate a community. For this reason, special attention must be given to the volume, location and design of these uses. The first step is to balance supply with demand. With oversupply, many communities have experienced a succession of commercial developments overtaking their predecessors, resulting in underused and poorly maintained "commercial cinders." Such "cinders" become a blighting influence. They can be avoided through good planning and development standards that provide for adaptable reuse.

Strip commercial centers are discouraged. These centers are characterized by:

- A linear series of stores strung together by a one-story, curtain

walled building of little or incompatible character



Adaptive reuse suits in-town commercial development

- Expanse of unscreened parking between the building and the roadway
- Minimal landscaping
- Incongruous and incompatible architecture and signage

Strip centers combined with “franchise” architecture can negate local sense of place, be visually destructive, and adversely affect property values.

Commercial areas provide important services, but they should be developed to enhance community character. This approach has a track record of success for the property owner and for the community.

Commercial centers are planned to occur at three scales, which will be reflected in their zoning and site plan requirements: neighborhood, community and regional/highway.

- *Neighborhood* commercial provides convenient food, gas and other day-to-day products. Neighborhood commercial should take a central place within growth node developments. They may contain mixed uses and they should be provided with

sidewalks, landscaping, and other amenities. Local institutional uses such as schools, libraries, post offices and community buildings are also desired uses. It is especially important that neighborhood commercial uses blend visually into the surrounding community.

Incorporating ancillary residential uses above the street level is encouraged. Such areas may also be appropriate additions to existing underserved population centers. These centers serve populations of 1,000 or more within a five-to-ten minute travel time.

- *Community* commercial centers provide for larger scale commercial uses with higher volume parking demand. Groceries, pharmacies, and support services are located at these centers. Careful attention to signage, landscaping, perimeter buffers, site layout and architectural design is necessary for these uses to be compatible with the community’s and the county’s character. Again, design standards are important for these high-visibility uses. Community commercial centers serve populations of 3,000 or more within about a ten-to-twenty minute travel time.
- *Regional/highway* commercial centers are designed for the most intense commercial uses, including “big-box” retailers. Such uses will be restricted to sites with access to Routes 50, 113 and 13. Specific zones prescribing appropriate setbacks,

landscaping, lighting, signage, screening and other site and architectural standards should guide the location and development of these centers. Use of service roads and/or interparcel connectors will help to mitigate transportation impacts. Regional centers serve populations of 25,000 or more within a 30-minute travel time.

The land use plan map locates major commercial areas.



Corn and soybeans adorn Worcester's rich fields

Agriculture—The importance of agriculture to the county cannot be overstated. Its significance is economic, cultural, environmental, and aesthetic. Agriculture is simply the bedrock of the county's way of life. Agriculture faces challenges from international commodity prices, local development pressure, and the aging farm population to name a few. The county must do all it can to preserve farming as a viable industry.

This category is reserved for farming, forestry and related industries with minimal residential and other incompatible uses permitted. Large contiguous areas of productive farms and forest shall be maintained for agricultural uses. Dust, odor, chemical applications, noise, and extended hours of operation create conflicts with incompatible uses.

Residential and other conflicting land uses although permitted are discouraged. Only minor subdivisions of five lots or less are permitted. This restriction has been the strongest component of the county's agricultural preservation strategy, and it should be maintained as is. Also as a general policy, the practice of not rezoning agricultural land for other uses should continue.

The strong "right-to-farm" law should remain in force. Compatible uses providing additional farm income, e.g. tourism and development of "value added" products/processing facilities should be explored. The implementation of a transfer of development rights (TDR) program could help maintain farming and direct growth away from productive farming areas.

Standards for rural cluster housing should be adopted to discourage minor subdivisions from locating along roadways. Such development leads to "suburbanization" of rural roadways. Incentives to provide shared drives, landscape buffers and larger setbacks should be implemented.

Agricultural land preservation should be pursued to maintain a critical mass of farms.

Industry—Traditionally a limited land consumer in Worcester County, light industry is a desirable addition to the

county's land use mix. Heavy industry with its environmental and transportation impacts may be compatible in selected locations. Pocomoke City has and will continue to be the focus for the county's most intense industrial uses. To balance the employment base, a light industry location should be developed in the northern county.

Industrial uses need good road access, large sites, sufficient electricity and public water and sewer services. Rail, port facilities, and natural gas are also desired. Selective economic development efforts focused on high-wage, low-impact industries and their supporting infrastructure will benefit the county. Industrial uses should be located in the county's designated industrial zones/parks and within appropriate areas in the municipalities.



Greenways provide wildlife and recreation benefits

Green Infrastructure—This category addresses state and locally designated natural and open spaces. These areas are designated to preserve environmentally significant areas and to maintain the environmental functionality of the county's landscape. Greenways improve water quality, provide flood control and

maintain the county's rural and coastal character.

This category includes conservation zones, which are highly restricted due to their special sensitivity. Conservation areas are defined by their soils (muck), state owned natural areas, existing conservation zoning, tidal wetlands, selected riparian corridors. Greenway and conservation areas have distinct physical characteristics, which make them special habitat areas or place extreme limitations on development. Such areas are "place dependent", that is, they only occur at specific locations. Their identification and preservation must be proactively addressed. After-the-fact mitigation and restoration is expensive and often of limited effect. Open space uses include:

1. Environmental process, e.g., hydrology, aquifer recharge areas, larger contiguous forests
2. Hazard areas (floodplains)
3. Environmental resources (wetlands, threatened and endangered species habitat)
4. Cultural resources
5. Outdoor recreation sites
6. Areas defining edge between urban and rural uses

The green infrastructure system is designed to maintain existing resource areas and where absent, create sufficient natural "corridors" linking larger green "hubs." Parks, other public and dedicated private open spaces should be included. This network provides essential wildlife food, shelter, and cover. It also provides a rural tone to developed areas and works with conservation site planning to minimize development's cumulative impact. Green infrastructure is addressed in more detail in the natural resources chapter.

The initial green infrastructure contained in this plan will be reviewed and refined further in the future.



Sensitive areas should be protected

Critical Conservation Areas—The Pocomoke River and Coastal Bays watershed areas have been provided with special land use and natural resource protection through state critical area legislation. Prescribed buffers, habitat protections and special review procedures are mandated. These areas are mapped on separate specific program maps. These maps are kept on file at the Departments of Comprehensive Planning and Development, Review, and Permitting.

Institutional—Institutional land uses are major public properties and facilities. county parks emphasizing active recreation are identified in this category; county passive recreation facilities are identified as green infrastructure.

General Land Use Recommendations

Agricultural land—Do not rezone agricultural land other than through the comprehensive rezoning process.

Growth location—Locate growth inland. The critical area program is a manifestation of the innate environmental value and sensitivity of

the lands bordering the Coastal Bays and their tributaries. This program greatly reduced the permitted development for undeveloped land within 1,000 feet of tidal waters and wetlands.

Long-term this will help ensure the county's viability as a tourist destination and therefore the county's economic security. This plan takes this cue and reinforces it by locating, to the maximum extent feasible, growth areas inland and away from the Coastal Bay tributaries and their headwaters. This strategy will limit water quality and wildlife impacts. Further, by planning for concentrated growth, the impact on working farms will also be minimized.



Excellent design can blend tradition with contemporary elements

Large-lot Zoning—Delete the Estate land use category and associated zoning district. Designed as a transition zone between urban/suburban development and the rural landscape, this category has:

- Consumed excessive amounts of land per housing unit, taking working farms out of production
- Been overtaken by the requirements of the Coastal Bays Critical Area Program⁸, and

⁸ Estate zoning districts allowable density in the Coastal Bays Critical Area was reduced from one dwelling unit (DU) per two acres to one DU per 20 acres in the Resource Conservation Area.

- Failed to achieve truly clustered open space development.

Large lot zoning is incompatible with this plan’s approach to new growth. Extensive areas of large lots result in sprawl, which is expensive to serve, damaging to water quality and wildlife, and incompatible with increased mass transit service.

However, large lots will be appropriately integrated into the floating zone/residential planned community-zoning district of the growth areas. Larger lots will fit along greenways at the community’s urban/rural boundary.

Urban Design--Challenge the development and design community to a higher standard of quality. Individual and larger-scale developments should be compatible with their neighborhood and further the county’s sense of place. Designs should be sensitive to Eastern Shore vernacular architecture.

Scenic Corridor Plans--Complete scenic corridor plans for the remaining unplanned segments of Routes 113, 13, 611, 589, 12 and 50.⁹ These plans should include bike and hiking links countywide.

Access Management--Continue access controls to maintain roadway safety and capacity.

Land Consumption--Reduce land consumption by encouraging compact design and/or by regulating maximum lot sizes in areas served by public services.

Land Preservation--Purchase development rights, scenic easements, and parcels in fee simple to maintain

⁹ Corridor plans have been completed by the county for sections of US 50 and 113 and the state has designated the “Blue Crab Scenic Byway” and “The Beach to Bay Indian View Trail”

rural and coastal character and preserve farming.

Rezoning--Consolidate review of rezoning proposals and consider biannually in a comprehensive manner.

Development Standards--Incorporate best management practices for new and existing land uses to reduce their environmental impacts and energy consumption.

Total Maximum Daily Loads (TMDLs)--Develop land use strategies to help meet the TMDLs standards.

The above goal, objectives and recommendations are designed to address the State Planning Act of 1992’s original “seven visions” and the vision added in 2000. They are listed below as they apply to Worcester County¹⁰:

1. Development should be concentrated in suitable areas.
2. Sensitive areas should be protected.
3. In rural areas, growth should be directed to existing population centers and resource areas should be protected.
4. Stewardship of the Chesapeake Bay, the Coastal Bays, the lands, the waters and other important natural resources is a universal ethic.
5. Conservation of resources, including a reduction in resource consumption should be fostered.
6. Economic growth is encouraged and regulatory mechanisms should be streamlined.
7. Adequate public facilities and infrastructure under the county’s control are available or planned in growth areas.

¹⁰ The Coastal Bays have been added to vision 4 and vision 7’s reference to municipalities has been deleted.

8. Funding mechanisms should be addressed to achieve these objectives.

Land Use Mapping

The policies noted above are established to accomplish the plan's land use mission. The next step in the plan-making process determines land volume requirements and maps the location of the land use categories. Future land demand relates to expected future population levels, the per-household land requirement, and the amount of land required for commercial development, employment, and other support services.

After the volume of land required is determined, potential growth areas are located. The first step in locating such areas identifies land with severe development constraints and other areas not suited for development. The plan's environmental and land use policies help identify such lands. Examples include tidal and non-tidal wetlands, productive agricultural lands, and large contiguous forests.

Once these unsuitable lands have been eliminated from consideration, the six growth area criteria were considered. As noted before, population and housing demand expectations were factored into the plan to determine acreage needs. Next, areas suitable for commercial and industrial facilities were identified.

The last step was to review the amount of and rationale for designated land use categories and to ensure that a sufficient volume of additional land beyond the expected amount needed was identified. This additional or contingency area

provides sufficient developable land supply to prevent artificial land value inflation. In other words, if land supplies are too constricted, land values "overheat" and prevent orderly development.

Residential Land Demand

Table 2-1 contains historic population and housing statistics and Table 2-2 contains projected population and household change through the next twenty years. Table 2-1 indicates recent rapid population growth and a substantial increase in the percent of occupied year-round housing.

The projections are based on recent and long-term trends, and they represent a reasonable estimate of year-round and total housing unit demand. Population has grown over the last dozen years at a rate of about 1,000 persons per year and



Townhouse developments provide relatively affordable housing

housing production has nearly equaled household growth. In the past, housing production outpaced household formation due to seasonal housing production exceeding year-round household formulation.

It is expected that retirees will increasingly occupy second homes year-round. This trend has brought household growth and housing unit production roughly in alignment. It is assumed this

The per housing unit acreage assumption is higher than the desired consumption per unit, but is used here to overestimate land needs. This overestimate's purpose is to be sure land values are not

Table 2-1 Historic Population and Housing Statistics

	1990	2000	Percent Change
Population	35,028	46,543	33
Housing units	41,800	47,360	13
Occupied units	14,142	19,694	39
Percent Occupied	34	42	24

Table 2-2 Projected Population and Projected Household Change

Year	2000	2005	2010	2015	2020	2025
Population	46,543	51,543	55,543	59,043	62,043	64,543
Projected Annual Change		1,000	800	700	600	500
Total Population Change		5,000	9,000	12,500	15,500	18,000
Households Change*		435	348	304	261	217
Total Household Change		2,146	3,863	5,365	6,652	7,725

*Household size is assumed to be of 2.33 persons per household (Census 2000).

latest trend will hold throughout the planning period.

The expected change in year-round population will be about 18,000 persons and total housing production will be about 7,723 residential units. For analysis purposes, land consumption per household is assumed to average a little less than one acre per housing unit (.9 acres per unit). This assumption is conservative for two reasons: first, it is larger than experience, (average consumption equaled about one-half acre per unit) and second, the plan's proposed higher density zoning will accommodate more units per acre. It is the plan's policy to bring actual land consumption per unit below one-half acre including open space, roads, and common areas. planned densities will tend to decrease the average consumption per unit.

artificially affected.

Therefore, to accommodate the projected future residential development outside the municipalities and existing developed areas, a total growth area of 2,861 acres has been designated. This assumes that 4,565 residential units located within the municipalities or on vacant parcels within the county's vacant land zoned for development.

Supply Contingency Factor

A land use contingency factor will prevent distortion of the land market. The plan's residential land use category requires a contingency factor. The other categories have a sufficient supply to prevent market problems, and they are discussed later in more detail.

The residential contingency factor has two components: the conservative

assumption for land consumption per housing unit and the fact that existing vacant developable land can accommodate more growth than the planned amount. The first component, per unit land consumption, is explained above and discussion of the second follows.

The Maryland Department of Planning completed a development capacity analysis for Worcester County. This analysis inventoried vacant land and deducted undevelopable lands, e.g., wetlands. This analysis lowered the potential zoned capacity to account for the fact that development seldom achieves maximum-zoned density.

This analysis relied on several assumptions applied by a computer model to develop an order of magnitude estimate of existing development capacity.

To refine this model, county and state staff undertook a parcel-by-parcel review of development capacity. This analysis confirmed the ability of existing zoned development areas to assimilate future growth substantially beyond the anticipated amount.

To be conservative, this plan assumes of the 7,723 new homes planned; only about 4,600 will use this existing capacity.

Commercial Land Supply

Based on industry standards for the relationship of commercial land to market size, an excessive amount of commercial zoning exists in Worcester County. Discounting half the vacant land¹¹ in this category as unbuildable,

the remaining land if developed would have the capacity to serve a population of over 2 million people; the county's peak seasonal population is less than 25 percent of this number.



Commercial land uses should be strategically located

The area of greatest concern is the US 50 corridor. This vital transportation link has a seven-mile long ribbon of intense commercial zoning. As a first step, additional commercial zoning along US 50 should not be permitted. Use of down zoning or commercial transfer of development rights should be explored. Developing a more concentrated commercial core off the Holly Grove Road to MD 589 portion of the service road would greatly reduce traffic impacts.

Industrial Land Demand

Standard practice for determining the demand for industrial land does not work well in Worcester County. This method relates industrial land demand to population. In Worcester County with its high proportion of retirees, this relationship breaks down. For this plan, past experience shows existing industrial areas will be sufficient to meet future demand.

¹¹ This is a conservative estimate as recent commercial properties have lot coverages significantly higher than 50 percent.

Land Suitability Analysis

Growth area locations were based on the six basic growth area criteria and a detailed review of potential sites. This analysis began with the mapping of areas meeting the criteria. This was followed by a detailed site-by-site review by the Planning Commission to determine final growth area suitability. The following section contains the growth area location analysis in detail. Again, the land volume designated for growth areas exceeds the anticipated need by over 500 acres and sufficient contingency development capacity was built into the assumptions to prevent artificial land value increases.



Industrial uses must be carefully sited

Figure 2-2 maps the existing land cover for Worcester County and Figure 2-3 is the land use plan map.

Land Use Analysis

Land use location choices relate to a site's physical character and its proximity to transportation, markets, and resources. In Worcester County, early settlements abutted rivers and roads, the dominant transportation links.

Today, improved technology has weakened this link between a use's physical characteristics and its location. Advances in transportation, site engineering, and wastewater disposal

technology overcame previously limiting factors. These changes dispersed development and often located it in unsuitable areas and in the process; vital natural resources and habitats were destroyed. The effects of sprawl, natural hazards and environmental damage are well documented.

Now, policymakers understand that past practices unnecessarily depleted resources, destroyed habitat, and replaced productive farmland with characterless subdivisions. This plan contains a development philosophy design to avoid these pitfalls and meet other important objectives.

As an aid to understanding the plan's land use proposals, this section reviews the analysis and justification for the specific land use designations. This is intended to help future policy makers understand how the plan's development philosophy applies to specific parcels, as well as, large areas of the county.

Each land use category has specific criteria noted earlier. These criteria were used to analyze and designate land within the county. Beyond these specific criteria, several more general factors affected a parcel's designation. These factors are discussed below:

1. *Demand for land*--Consideration was given to the expected land demand needed for a particular area's planned growth. This volume includes the estimated amount plus a generous contingency factor. The contingency's purpose is to prevent artificial land price inflation. Balancing land demand and supply will prevent sprawl and under-use of sites and public facilities.

2. *Current conditions*—Potentially temporary conditions, such as transportation access or lack of public services, may disqualify for the planning period an otherwise desirable growth area. Such areas will be considered in future plan updates.
3. *Land consumption*—Recent trends show that more land per dwelling unit has been consumed than in the past. To address this concern land demand was considered as noted above and large-lot residential use has been greatly reduced. Extensive large lot development leads to sprawl and its negative impacts. The previous plan’s Estate category created an over supply of such residential lands. Additionally, many Estate designated lands were located in environmentally sensitive areas and the Coastal Bays Critical Area. Some Estate areas were changed to Agriculture or incorporated into a growth area.
4. *Shared development benefits*—The land use plan works to bring development land supply into balance with planned growth. It also seeks to continue the county’s concentrated growth pattern. Achieving these aims requires a reduction in area designated for certain types of growth. To correct for these changes and to share development benefits with agricultural areas facing development pressure, the plan contains a transfer of development rights program. This program provides a market for development rights, which

enables the transfer of such rights from certain locations to others more desirable for orderly development.

Watershed Analysis

Below each area of the county is discussed and its land use designation reviewed. For discussion purposes, the county is divided into subwatersheds; Figure 2-4 displays subwatershed boundaries.

Assawoman Bay Subwatershed

This area contains several existing developed centers (EDA), agricultural lands, and forest. Relatively isolated from the rest of the county with limited transportation facilities, and significant Critical Area Resource Conservation Area¹², this area other than the EDAs, is planned for agriculture.

Isle of Wight Bay Subwatershed

This subwatershed contains Ocean City, Ocean Pines, some of West Ocean City, and most of the Route 50 commercial corridor. The headwaters are near Selbyville, Delaware north of Bishopville and contain agricultural lands and a planned industrial area. Transportation access and mobility are excellent for the most part. This area has been the traditional focus of population growth and development in Worcester County. This fact reflects employment opportunities and access to Ocean City and the near-by state and national parks.

Ocean City will redevelop and infill throughout the planning period. Ocean City like the entire county’s

¹² Critical Area Resource Conservation Area limits development to maintain the critical water quality and habitat values of undeveloped and open space lands within 1,000 feet of tidal waters.

municipalities is responsible for determining its internal land use pattern. This plan attempts to coordinate with the individual municipalities' comprehensive plans.

The subwatershed's previously planned growth areas approach build-out; this growth is having severe transportation impacts. For this planning period, the location of growth has been shifted away from the MD 589 corridor to avoid more transportation problems. During the summer season, the State Highway Administration classifies the intersections from US 113 to Gum Point Road level of service (LOS) in one case as "E" (failure) and the rest as "D/E" (approaching failure).¹³ For this reason, MD 589 has been designated as currently "impacted" and unsuitable for development beyond infill of existing lots in accordance with current zoning.

One area within the subwatershed has been designated for additional community-scale residential growth. The growth area is located south of the Village of Showell. This area is in transition with the closing of the Perdue chicken processing plant. This change may make available one million gallons of wastewater treatment capacity to the area. This area meets all the growth area (GA) criteria.

The US 113 corridor north of the Village of Showell is planned for industrial development. This site meets the criteria for industrial sites, i.e., larger parcels, flat topography, potential sewer service, and excellent transportation access (road and rail).

¹³Snowden, Wayne, Personal Correspondence, Transportation Planner, State Highway Administration, Salisbury, Maryland, February 16, 2005.

The "quadrangle" as bounded by MD 90 on the north, MD 589 on the east, US 50 on the south and US 113 on the west is an area that may be appropriate for future development, but for the initial planning period will remain predominately in agricultural uses. This area may become the core of a growth area once MD 589's traffic capacity is improved sufficiently to handle the traffic volume associated with such growth. This area should be limited to infill development until conditions change.

The Holly Grove Swamp has been designated as a conservation area. This large forested wetland serves as a critical stopover point for the Atlantic Flyway, contains a Sensitive Species Project Review Area, and is designated as a state Green Infrastructure Hub. This area should remain in its current land use and not be developed.

The remainder of the watershed is limited by such factors as; critical area status, proximity to water bodies, headwaters location, forest coverage, lack of public services, and modest transportation access. Therefore, these parcels should remain in their current land uses.

Newport Bay Subwatershed

This subwatershed includes the Town of Berlin on the west, and it is bounded by MD 611 on the east. On the north, it is bounded by US 50 and on the south by the Marshall Creek drainage. Other than the vicinity of the Town of Berlin, these lands are planned to remain in their current land uses. Again, the non-GA locations do not now fit the criteria for a GA or they are not expected to be needed to meet land demand during the planning period.

East of Berlin this subwatershed contains the traditionally African-American communities of Briddletown, Germantown and several evolving African-American communities along MD 376. The remaining lands are forested, agricultural, or wetlands and have only adequate transportation access.

These areas east of Berlin with their physical constraints, Green Infrastructure status, and limited transportation access are not priority areas for development. Therefore, these areas are designated predominantly Agriculture.

GAs have been designated west and north of the Town of Berlin. These areas will need to be served with public water and sewer service to achieve the growth area development intensity. A western Berlin collector road will be required to provide adequate transportation access to the Berlin GA. With this improvement providing good access to US 50 and US 113, these areas meet the GA criteria. These GAs also provide good access to employment, commercial, and recreation facilities and will build on the growing Berlin community.

The Village of Newark splits the Newport Bay Subwatershed and the Upper Pocomoke subwatershed. It is discussed in the Upper Pocomoke portion of this section.

Sinepuxent Bay

The Sinepuxent Neck contains the MD 611 corridor, which on the north connects to US 50 in West Ocean City. The subwatershed's West Ocean City portion is highly developed with commercial development along US 50. Further south, several residential communities and two large campgrounds

exist. Below Sunset Avenue, to MD 376 on MD 611's east side, eight residential communities have been developed. Mystic Harbor and Assateague Pointe are the largest. Another community is under construction. On the west side of MD 611, two residential communities are located just south of the MD 707 intersection. The West side of MD 611 contains significant amounts of Sensitive Species Project Review Area (SSPRA) and wetlands.¹⁴

Further south the land to the west of MD 611 is wet and forested. Large estates border the bay until the entry to the parks. Below the state and national park entrance, a series of large lot, residential communities blanket "South Point."

The Sinepuxent Neck's undeveloped lands are predominately wet, forested, or in agriculture. MD 611 provides adequate access, but it can be congested in summer. MD 611 LOS is nearing the "impacted" category. The entire subwatershed other than its West Ocean City (northern) portion should not be further developed due to its traffic, environmental sensitivity, and high storm hazard vulnerability characteristics along with its value as a gateway to the parks.

Chincoteague Subwatershed

This rural subwatershed borders the Chincoteague Bay and contains the Villages of Public Landing, Girdletree

¹⁴ Sensitive Species Project Review Areas are generalized areas primarily containing rare, threatened, and endangered species as designated by the Maryland Department of Natural Resources. These areas may also designate the general location of Critical Area Habitat protection Areas, Nontidal Wetlands of Special State Concern, Natural Heritage Areas, Colonial Water bird Sites and Waterfowl Concentration and Staging Areas.

and Stockton; much of the county's rural legacy area; the EA Vaughn Wildlife Management Area; forest; and agricultural lands. Outside the villages, the remaining lands are designated Agriculture or Conservation.

This areas' sensitivity as evidenced by numerous Sensitive Species Project Review Areas, critical area, Green Infrastructure status and large contiguous forest and agricultural land, along with its rural and coastal character dictate that the area remain in its current resource use and open space land uses. GAs have been designated for the Towns of Snow Hill and Pocomoke, which will be adequate to absorb the region's planned development.

Upper Pocomoke Subwatershed

This subwatershed covers the northwest quadrant of the county. It contains the Village of Whaleyville, the GAs west of Berlin and a portion of the Village of Newark. The remainder of the watershed is dominated by cropland with some forested areas. The GAs in Berlin and Showell will accommodate the anticipated growth for the county's northwestern quadrant. The remaining area should maintain its rural character by continuing its agricultural and forestry uses.

Newark will remain a small village with only infill type development planned.

Lower Pocomoke Subwatershed

This subwatershed is the central southern spine of the county beginning at the Virginia State Line, passing through Pocomoke City and ending just north of Snow Hill. Outside the two towns, existing land uses are dominated by agriculture and forestry. The Pocomoke State Forest serves as a major Green Infrastructure hub and links up

with the county's rural legacy area to form a large contiguous forested and open space area.

Two GAs are designated for this subwatershed, one is in Snow Hill and the other is near Pocomoke City. These areas will accommodate the region's planned growth.

The Snow Hill GA rims the southern and eastern portions of town. This avoids the river's flood plain, Critical Area and prime agricultural soils to the west of town. Interspersed within the GA are county owned land and wet areas that will not be available for development. The GA provides for unprecedented growth in the Snow Hill vicinity. This will require a significant increase in the town's sanitary service capacity.

The MD 12 corridor west of town has several constraints, which make it inappropriate for further development. As noted above this area has flooding, wetland and critical area issues. West of the existing commercial uses along MD 12, are some of the most productive farmlands in the county. Future development along MD 12 should focus on improvement of existing uses without creating additional flood risk, wetland damage, or intrusion of development into prime farmlands.

The Pocomoke City GAs provide for the town's logical extension. The individual GAs are intended to be annexed and developed. This encourages the town to grow in a cohesive manner rather than extending tentacles into rural areas. This will make for efficient town services and preserve the surrounding rural integrity. The amount of GA will provide for the town's planned growth.

Nassawango and Dividing Creek
Subwatersheds

These two subwatersheds contain the county's most rural and agricultural areas. Development is limited to the Nassawango Hills/Village EDA along MD 12. The Pocomoke State Forest and the Nassawango Creek Conservancy/Wildlife Preserve anchor the largest contiguous forested area in the county. Other than the seashore

parks, this area has the largest assembly of Sensitive Species Project Review Areas and Green Infrastructure. These subwatersheds, other than the EDA on MD 12, are assigned Agriculture and Conservation designations. These subwatersheds are the core of the county's agricultural and forestry "critical mass" and are therefore especially important for preservation efforts.

Chapter Three: Natural Resources

Introduction

Worcester County's natural resources are valued for quality of life, environmental, economic, public health, and aesthetic reasons. The tourism, forestry, and agriculture industries rely on natural resources. These industries are the county's economic backbone.

Natural resources provide valuable services such as flood protection, pollution assimilation, water quality, and clean air that benefit public health and safety as well as the Coastal and Chesapeake Bays' productivity. Therefore, water, soil, air, and vegetation must all be carefully managed.

The county's coastline and uplands are strikingly beautiful. Residents and tourists appreciate this and use the land and water for recreation. Fishing, hunting, boating, photography, bird watching, sailing, surfing, and beachcombing are enjoyed by many.

Agriculture, forestry, and commercial fishing benefit from the county's high quality environment. Our bountiful bays, islands, beaches, woodlands, marshes, and streams sustain our rural character and quality of life. These assets are vital to the county's continued social and economic well-being and

should be protected.

Environmental Services

Forests are a good example of a natural resource's direct and indirect benefits to the county. The forestry industry contributes jobs and income to the economy. The county's aesthetic appeal relies heavily on our forested and field cropped landscape.

Trees have documented economic value. Trees cycle nutrients, conserve water, and improve soil quality. Forest litter

Worcester County's Natural Resources at a Glance

- 303,900 acres of land area
- Approximately 111,800 acres in farming, 157,500 acres of forest
- 40 miles of ocean beach and 407 miles of shoreline
- Five Coastal Bays with a total watershed of 112,000 acres
- The Pocomoke River watershed (western two-thirds of the county) is about 191,900 acres
- Total wetlands of 59,486 acres or more. 43% of non-tidal wetlands are wooded areas in the upper reaches of the Pocomoke watershed.
- Submerged aquatic vegetation: 7,319.42 acres in 2003
- 19% of Worcester County is considered prime farmland
- 22 State-threatened or endangered animals (Five are Federally threatened or endangered)
- 96 State-threatened or endangered plants
- Resource location maps appear throughout this chapter

accumulates, holding nutrients, which repeatedly replenishes the food web.

Forests regulate water flow as the soil, leaf litter, and roots absorb rainfall and then slowly release it to streams or the groundwater. This greatly tempers nutrient pollution, flooding, and soil erosion.

Trees also provide windbreaks and shade reducing heating and cooling costs and the “heat island” effect of urban areas.

Wetlands are another source of basic ecological “services.” Wetlands provide wildlife habitat, food chain support, floodwaters storage, erosion control, groundwater recharge, nutrient cycling, nutrient storage, and pollutant removal. Wetlands are so significant that they are specifically protected by federal, state, and local laws. A Presidential “no net loss” policy has been set as a national goal¹⁵. The Comprehensive Conservation and Management Plan



Headwaters, wetlands, and natural streams naturally cleanse the county's water

(CCMP) sets a goal of restoring 10,000 additional wetland acres.

Species diversity is an important natural resource. There are many reasons,

¹⁵ USEPA, *National Guidance Water Quality Standards for Wetlands*; undated, unpaginated on website; see “1.0 Introduction.”

including economic, to be concerned about the loss of species diversity. Materials and chemicals produced by plants and animals are a largely un-researched storehouse of potentially beneficial products.

Most medicines in use today come from natural sources. Plant chemicals are the prime ingredient in 25 percent of all prescriptions written in the United States. Likewise, the world’s agriculture depends on the development of new crop varieties. This is often done using genetic material from wild species to develop pest, disease or drought-resistant crops. Maintenance of species diversity today will provide future health and agricultural benefits.

Worcester County’s natural area quality and abundance are the envy of most other Maryland counties. The county attracts new residents and visitors seeking our rural and coastal setting. This benefits our economy significantly. Tourism potential grows when visitors know there are opportunities to see rare or unusual birds, mammals, and other special animals or plants. A recent study found that annual spending on bird watching in Worcester County was \$3,481,000.¹⁶

There are important public benefits of relatively undisturbed lands. For example, floodplains left in their natural state moderate and store floodwaters, dissipate energy, and reduce erosion and sedimentation. Safeguarding these functions not only reduces property damage and threats to life and limb, but also contributes to water quality maintenance.

¹⁶ Institute for Governmental Service, University of Maryland; 2002.

As population increases, the natural features that attract visitors and new residents are threatened. The natural infrastructure, such as safe drinking water, clean air, scenic vistas, local wildlife and prime agricultural land, can be ruined by over-use. These assets once degraded, are expensive to restore, if they can be restored at all. The Chesapeake Bay restoration serves as an example, with millions of federal, state and local tax dollars being spent to correct past damage.

Because human activity affects or displaces natural systems, the impact of human needs and desires on natural functions must be monitored. For example, wetlands are especially sensitive due to the difficulty in recreating their functions, or the need to keep a “critical mass” of certain habitats to prevent permanent loss of wildlife. Such areas are examples of candidates for preservation.

Worcester County has considerable remaining growth potential. This growth can occur in a way that maximizes both economic and natural benefits minimizing future environmental repair costs. This chapter presents a strategy balancing human activities with sustainable environmental health.

Goal, Objectives, and Recommendations

Goal

Worcester County recognizes the value of and is committed to conservation and protection of the following natural resources:

- Clean air
- Clean surface and groundwater
- Beaches
- Stream corridors
- Forests

- Threatened and endangered species
- Productive soils
- Tidal and nontidal wetlands
- Floodplains
- Biological diversity
- Fisheries and their nurseries
- Steep slopes

Protecting these resources will preserve and improve the county’s quality of life.

Objectives

1. Use a systems approach to environmental planning addressing pollution at or close to its source and use sustainable development techniques
2. Instill environmental stewardship as an universal ethic
3. Identify and protect environmentally sensitive areas
4. Restore and/or enhance natural resource functions where possible
5. Reduce imperviousness of existing and new development
6. Improve water bodies on the “Impaired Water Bodies (303d) List” to the point of their removal from this list
7. Meet the Total Maximum Daily Load (TMDL) standards
8. Conserve resources by reducing unnecessary consumption
9. Channel development within a particular site to any existing disturbed areas if possible
10. Establish sufficient buffers for sensitive areas

Recommendations

1. Continue to inventory, analyze, and monitor the county's natural resources
2. Integrate Geographical Information System (GIS) into natural resource analyses, decision-making, and provision of public information
3. Continue the Rural Legacy Program and other land protection programs, with priority on tidal shorelines, headwaters and tributaries, and threatened and endangered species habitat
4. Provide public information to reduce natural resource impacts
5. Continue to involve the public in major natural resource issues
6. Manage public lands for sustainable forestry uses, water quality, and for protection of threatened and endangered species
7. Preserve and add high-quality habitat, in areas as large and as circular as possible, feathered at the edges, and connected by wildlife corridors
8. Design development plans around environmental features by using conservation subdivision design techniques and infilling existing residential areas
9. Minimize runoff by reducing impervious surfaces and clustering development on the more porous soils
10. Use open, natural drainage systems where soils permit
11. Design man-made ponds and stormwater facilities with current techniques for mosquito control and improved habitat value

12. Use native plantings to reduce fertilizer and irrigation requirements and to increase resistance to pests and disease

Existing Programs

In addition to the environmental protection built into the development review process, the county uses the following programs to protect and conserve natural and cultural resources:

Atlantic Coastal Bays and Chesapeake Bay Critical Area programs

The critical area programs provide land use and environmental regulations in the 1,000 feet landward of tidal waters and marsh. Figure 3-1, shows the extent of the critical area programs within the county. Generally, these programs require a minimum 100-foot vegetated buffer extending landward from the tidal waters' mean high water line, tidal wetlands and tributary streams. The law also minimizes removal of vegetation and creation of impervious surface during development. The program places all lands in the critical area into one of three land use categories: Intensely Developed Areas (IDA), Limited Development Areas (LDA), and Resource Conservation Areas (RCA). Specific land use and environmental regulations apply within each category.

To accommodate some growth within the critical area, 5 percent of the total RCA may be converted to a LDA or IDA. The Chesapeake Bay Critical Area includes about 10,000 acres of the county that lie within the Pocomoke River watershed. The Atlantic Coastal Bays Critical Area contains about 23,000 acres.

Floodplain Management

Worcester County adopted its floodplain management law in 1992. Its purpose is to “protect human health and life, to minimize property damage, to encourage appropriate construction practices to prevent future damage, to protect water supply, sanitary sewage disposal and natural drainage.” The ordinance states, “Wherever possible, the natural characteristics of floodplains and their water bodies should be preserved and enhanced.” This ordinance adheres to the minimum federal flood protection standards.



The Maryland Coastal Bays Program brings stakeholders together to seek solutions

Maryland Coastal Bays Program

Part of the National Estuary Program, the Maryland Coastal Bays Program cooperates with the towns of Ocean City and Berlin, National Park Service, Worcester County, U.S. Environmental Protection Agency, and the Maryland Departments of Natural Resources, Agriculture, Environment, and Planning, which have come together to produce the first ever comprehensive management plan for the coastal bays.

Established in 1987 under the Clean Water Act, the National Estuary Program was developed to protect economically and environmentally sensitive estuaries across the United States by engaging all user groups.

Forest Conservation Program

The Worcester County Forest Conservation Law applies to many projects, outside of the Critical Areas, that remove a minimum of 40,000 square feet of forest. The law sets development standards for the preservation or replacement of existing trees and forest and the planting of forest where none exists.

Rural Legacy Program

This program targets the southeastern portion of the Chincoteague Bay watershed for permanent protection through purchasing voluntary conservation easements. To date over eight miles of shoreline and 6,000 acres of land are permanently protected from development.



Agricultural preservation focuses on working farms

Maryland Agricultural Land Preservation Program

The Maryland Agricultural Land Preservation Program, in existence since 1977, is one of the most successful farm preservation programs in the country. It strives to preserve sufficient agricultural land to maintain a viable base of food and fiber production. The Program consists of two basic steps: the establishment of agricultural preservation districts, and the purchase

of perpetual agricultural conservation easements. To date, approximately 3,300 acres have been permanently protected under this program in Worcester County.

Watershed Planning

Watershed plans have been completed for the Isle of Wight, Newport and Sinepuxent Bay subwatersheds. These documents provide a strategy for watershed protection and improvement, and outline locations and priorities for land use; best management practices (BMPs) and restoration of wetlands, habitats, and waterways. Adoption of these plans sets the stage for state and federal funding of their implementation.

Sediment and Erosion Control and Stormwater Management

The county administers state sediment and erosion control and stormwater management regulations. Sediment and erosion control regulations require an approved plan for earth disturbance of 5,000 square feet or more and/or 100 cubic yards or more. Criminal penalties can be imposed for violations.



TMDLs set standards for pollution loads from point and nonpoint sources

The state's recently updated stormwater management regulation program is also administered by Worcester County. This program regulates development to hold post-construction stormwater runoff to a

prescribed pre-construction level. The latest program manual emphasizes stormwater source reduction and on-site treatment methods. This program appears to be successful in improving water quality and reducing flooding.

Total Maximum Daily Loads (TMDLs)

A TMDL establishes the maximum pollutant load for an "impaired" water body. This loading is the pollutant amount that can be assimilated while meeting water quality standards. The TMDL allocates the load among point and nonpoint sources. TMDLs have been established for phosphorus and sediments for Big Mill Pond and for nutrients for St. Martin River, Bishopville Prong, Shingle Landing Prong, Herring Creek and Turville Creek. TMDLs for nutrients and biological oxygen demand (BOD) have been established for the Newport Bay system.

Uncertainty surrounds the implementation of the TMDLs. Specifically; it is unclear what the county's responsibility will be. To address the county's responsibility, all reasonable opportunities to improve water quality should be undertaken as part of a good faith effort to meet the TMDL standards. What is clear is that the county will be required to take action to meet the TMDLs.



Wetland restorations improve water quality and provide wildlife food and cover

Restoration Projects

Worcester County has established one wetland restoration project and several forest planting projects on county-owned land.

Two forestation projects have been completed in cooperation with the State Highway Administration and Ocean Pines Association. The Ocean Pines project was also a wetland creation project.

The county also promotes restoration projects on private lands through watershed planning and other programs. Local, state and federal programs available include Wetland Reserve Program and other U.S. Department of Agriculture Programs, Conservation Reserve Enhancement Program (CREP), various State Forest Service programs, and the county Forest Conservation Fund.

The county will pursue funding for restoration projects as part of its TMDL compliance program.

Public Information

Worcester County has developed for distribution brochures on the topics of septic system care, sensitive areas, golf courses and land protection. The county

has also held workshops on septic system care, and in conjunction with Wor-Wic Community College, offered coursework on environmental protection programs in recent years.

Lower Shore Heritage Plan

The *Management Plan for the Lower Eastern Shore Heritage Area* was undertaken to have the Lower Shore designated a “Certified Heritage Area.” The plan seeks to make the area a more attractive visitor destination. It provides for orienting and linking natural and cultural resources with interpretative and educational programs and facilities. It provides a strategy for stewardship and economic development. The *Management Plan for the Lower Eastern Shore Heritage Area* is incorporated into this comprehensive plan by this reference.



Coast Day provides an educational experience for the young and not so young

The rest of this chapter describes specific challenges, objectives, and recommended actions to meet the county’s natural resource goal and objectives.

Groundwater Protection

Groundwater is the county’s only source of drinking water, the primary source of irrigation water and the major source of freshwater to the coastal bays and the Pocomoke River. Worcester County has

an abundance of sand and gravel aquifers that yield large quantities of good quality groundwater. High iron content is the most common drinking water quality problem in the county, but this presents no health hazard. There are only a few areas of high nitrate concentration at this time. Ocean City has experienced some saltwater intrusion in its municipal supply. Studies are necessary to understand future risks to the county's drinking water.

Worcester County has a high groundwater table. Near-surface groundwater quality can be compromised by septic systems, fertilizer applications, and improper ditch management techniques. Because contaminants can move from groundwater to surface waters or can affect drinking water aquifers, the county must ensure that such contamination is minimized.

Groundwater flow paths are not well understood. A 1999 study estimated potential groundwater nitrate loadings into the coastal bays were 272,000 pounds per year from direct groundwater discharge and 862,000 pounds per year from stream base flow.

The county's groundwater protection objectives are to

- Reduce contamination from non-point sources on near-surface groundwater
- Protect groundwater recharge areas

Programs and Policies

The Groundwater Protection Report, an appendix of the county's *Comprehensive Water and Sewerage Plan*, identifies management areas, within which certain strategies (septic system design and well

construction standards) must be followed to protect groundwater from pollution.

In 2000, Worcester County requested that the State of Maryland declare the entire Coastal Bays watershed an Area of Special State Concern (ASSC). This designation is designed to address groundwater nutrient inputs from septic systems in this area. An Area of Special State Concern Plan was prepared in 2002.

Worcester County is creating a digital inventory of all county septic systems to track potential problems and target outreach.

Recommendations

1. Adopt the Area of Special State Concern Plan and implement its recommendations
2. Adopt a septic system management and nutrient reduction program countywide
3. Devise means to track and appropriately manage septage¹⁷
4. Provide information to the public about reducing nitrogen inputs into groundwater
5. Identify and protect groundwater recharge areas
6. Only encourage industrial growth that generates minimum waste and is least likely to contaminate groundwater and surface water

Waterways and Wetlands

As a striking background for land and water recreation, Worcester County's forested tributaries and inland creeks are important assets. Figure 3-2 maps the county's waterways and wetlands.

¹⁷ Waste pumped from septic systems. Septage is predominately solids and has a high concentration of nutrients.

The Pocomoke River is the main tributary of Worcester’s Chesapeake Bay watershed. The Nassawango Creek and Dividing Creek are important tributaries of the Pocomoke. The large tidal tributaries associated with the coastal bays include the St. Martin River, Turville, and Herring Creeks in the upper bays and Trappe Creek in the lower bays. Smaller but significant tributaries include Manklin Creek, Greys Creek, Marshall Creek and Roy Creek.

Healthy, vegetated waterway corridors form a basic part of the natural infrastructure—they provide clean water, flood protection, and recreation along with other benefits free of charge. Protecting such corridors ensures that these benefits are maintained. Many of Worcester’s streams have been



Wetlands and their buffers improve water quality and reduce flooding

channelized to speed drainage and large areas lack sufficient pollutant reducing buffers. Waterways and wetlands are important sites for tourism and hunting.

Wetlands are generally found next to waterways, as well as in other areas. They provide fish and wildlife habitat, pollutant removal, nutrient cycling and storage, food chain support, flood storage, erosion control, and groundwater recharge. The county has approximately 59,500 acres of wetlands,

amounting to 19.6 percent of its land area.¹⁸ Wetlands are identified by their hydrology, soils, and plants adapted to wet conditions.

For purposes of regulation and enforcement, wetlands are categorized as nontidal or tidal. Nontidal wetlands are influenced by surface water runoff and groundwater discharge. Nontidal wetlands are saturated for extended periods during the growing season. Marshes, swamps, wet meadows, bottomland forests, and bogs are examples of nontidal wetlands.

Table 3-1 Coastal Bays Tidal Wetlands

<u>Subwatershed</u>	<u>Wetland Acres</u>
Assawoman Bay	2,746
Isle of Wight Bay	5,648
Newport Bay	6,546
Sinepuxent Bay	4,023
Chincoteague Bay	15,530

Source: Maryland Department of the Environment, *Priority Areas for Wetland Restoration, Preservation, and Mitigation in Maryland’s Coastal Bays*, Baltimore, Maryland, 2004, p. 21.

“Wetlands of Special State Concern” are nontidal wetlands that are particularly sensitive and are given the highest priority for protection.

Tidal wetlands include saltwater and brackish areas as well as some freshwater habitats. Tidal wetlands may be permanently, irregularly or seasonally flooded. The county has experienced

¹⁸ Tiner and Burke, 1995. This figure is based upon studies conducted by the National Wetlands Inventory Project, in which aerial photography was supplemented by field investigations. Figures provided by this study should be considered approximate and are probably only minimums.

significant tidal wetland losses (about 1,600 acres since 1930).¹⁹ Total wetland losses were about 51,000 acres.

Threats to Worcester's wetlands include sea level rise/subsidence, erosion, and development. Sea level rise will flood wetlands and change their salt content. For example, the fragmentation and extensive salt marsh losses on the Isle of Wight Bay Island's north end is attributed to sea level rise and erosion.²⁰ Development losses, on the other hand, have been slowed considerably due to federal and state laws. From 1991 through 2003, a total of 84.31 acres of wetland filling were requested, and 78.62 acres (89.6%) were permitted.²¹

"Hard" shoreline stabilization (e.g., riprap) causes increased wave action and increases wetland losses. In the past, extensive wetlands were drained and ditched for agriculture and other uses. According to the Maryland Coastal Bays Program, approximately 194 acres of wetlands have been voluntarily restored in the Coastal Bays watershed since 2000.

The county's wetland and waterway protection objectives include:

- Reduce further wetlands loss
- Promote and implement wetlands and waterways restoration projects
- Improve water quality sufficiently to remove all "impaired" waters from the state's 303d list²²

¹⁹ Maryland Coastal Bays Program, *Today's Treasures for Tomorrow, Status and Trends Report*, from US Army Corps of Engineers, 1997, P. 25.

²⁰ Ibid.

²¹ Stribling, Judith. 2004. Wetlands Study.

²² The "303d" list contains the state's water bodies that do not meet their use category water

- Meet or exceed the TMDL standards
- Protect with easements or other methods the most sensitive wetlands and shorelines in the county
- Maintain shorelines in their natural condition

Programs and Policies

Wetlands and waterways are protected by both the Worcester County Forest Conservation Law and the critical area programs. The county has zoned the Pocumoke River Corridor and much of the Chincoteague Bay shoreline and shorelines of its tributaries "C-1" (Conservation). Much of the Nassawango Creek corridor is owned and protected by The Nature Conservancy. Six thousand acres of the southeastern portion of the Chincoteague Bay watershed are permanently protected from development with Rural Legacy easements.

The county has a Shoreline Commission that reviews construction along and into waterways. The county's shorelines are becoming hardened through bulk heading and riprapping. These measures should only be permitted where erosion conditions demand such extreme measures. The Sensitive Areas Management Report's recommendations should be incorporated into the Shoreline Commission's standard review procedures as appropriate.

Alternatives to hard shoreline structures exist. Such "soft" techniques can prevent erosion and improve the site's habitat value. County policy should be adapted

quality standards and are in need of improvement. TMDLs must be prepared and implemented for these waters.

to direct shoreline stabilization toward soft techniques in suitable locations.

Recommendations

1. Cooperate and coordinate with state and federal programs to prevent wetland loss
2. Implement wetland, waterway and other restoration projects consistent with existing watershed plans



Bio-retention areas process stormwater and improve aesthetics

3. Continue small watershed planning and restoration for subwatersheds without plans at this time (Chincoteague and Assawoman bays, and the upper and lower Pocomoke River)
4. Institute watershed planning strategies
5. Refine and put into practice the strategy to implement TMDL (Total Maximum Daily Loads) standards
6. Nutrient budgets, “offsets”, expanded forest cover, and nutrient credit trading should be considered for implementing TMDL standards
7. Analyze ditch buffer measures and regulations currently used in Worcester County and in other jurisdictions. Implement best management practices

8. Protect sensitive waterways, wetlands, and their buffers through acquisition, easements, and incentive programs
9. Reduce road construction and maintenance impacts lowering the water table and altering surrounding wetland hydrology.
10. Analyze shoreline erosion rates and relate standards for stabilization to these rates relying on “soft” approaches to the maximum extent feasible
11. Develop standards for “soft” shoreline stabilization techniques
12. Adopt Sensitive Area Management Report recommendations and incorporate them into the Shoreline Commission’s standard review procedures.
13. Cooperate with the Coastal Bays Program and the National Park Service to seek “Pristine Waters” (Tier 3) TMDL for the Chincoteague Bay to maintain its water quality and wildlife value

Forests

Forestry is an important industry in Worcester County. Figure 3-3 maps the county’s forest cover.

In 1988, forest products generated over \$19 million in sales and employed about 138 people.²³ From 2000 to 2004, 9,007 acres of forest were clear-cut in Worcester County and 5,335 acres were thinned. A commitment to this industry means the rural landscape must be maintained. Forestry depends on large, contiguous, and productive lands. Its viability can be undone by forest fragmentation by development and other uses

²³ Meckley, 1988.

About half of Worcester County is covered by woodlands of loblolly/shortleaf pine, oak, or mixed hardwoods of varying age, species diversity, and quality. Today, the county is covered by approximately 157,500



Forests provide important environmental services

acres of forested land. While forest cover is less than several hundred years ago, Worcester County has more forest now than it did half a century ago.

In addition, due to replanting required by Maryland's Seed Tree Law, the county ranks first in the state in reforestation. According to Maryland Department of Natural Resources (DNR), from 2000 to 2004 Worcester County reforested over 1,842 acres and at least 2,252 acres naturally regenerated.²⁴ An additional 3,156 acres of open land were planted under the Conservation Reserve Enhancement Program from 2000 to 2004.²⁵

Forest age, tree species diversity, size, and the extent of invasive exotic vegetation affect the habitat number, quality, and diversity of a particular forest. However, in general, forests are essential native plant and animal species habitat.

Forest loss decreases the distribution, variety and abundance of wildlife and plant species. This would negatively affect both game species that attract hunters as well as unusual species that draw tourists. Both situations have negative economic effects.

One group of organisms, Neotropical interior dwelling songbirds, needs unfragmented forests exclusively for their habitat. These birds summer in this country and migrate to Central and South America every fall. Destruction of even small forests can fragment the remaining forest, reducing its value as songbird habitat. The continued presence of Neotropical birds attracts birders who might not otherwise visit the county. In addition, nearly all of these interior forest-dwelling birds are insectivores, eating tons of mosquitoes and other pests.

Individual urban tree specimens also provide ecological and economic benefits. Studies have shown that real estate agents and homebuyers assign between 10 and 23 percent of a home's value to the lot's trees. Local governments in turn capture some of this value through improved assessed property values.²⁶

Threats to forest health include fragmentation by development and the replacement with essentially single species and age trees.

Worcester County's objectives for tree and forest conservation are:

- Protect and plant forests and trees in areas of residential and commercial development.

²⁴ Clarke, Rob, Personal Communication, 2004.

²⁵ Ibid.

²⁶ USDA. 1993. *A Technical Guide to Urban and Community Forestry*.

- Minimize continued fragmentation of forest by protecting or planting forest that lies next to existing forest.

Programs and Policies

The Worcester County Forest Conservation Law, the critical area programs and the Maryland Seed Tree Law ensure that forest loss is minimized or replaced if harvested.

Recommendations

1. Continue to require the use of native vegetation in all planting requirements for buffering and screening, reforestation and afforestation projects, both on public and private land.
2. Create and manage “demonstration” landscaping projects on institutional and parklands throughout the county. county-owned lands will be managed to plant and protect diverse forest stands.
3. Protect critical root zones of trees during development.
4. Use the Rural Legacy Program and other land and forest protection programs to protect diverse, contiguous forest in areas of the county.
5. Maintain an inventory of suitable lands available for tree planting for purposes of compliance with the Worcester County Forest Conservation Law. Mitigation should occur within the subwatershed from which forest has been removed. Thus, suitable mitigation sites should be identified in each subwatershed. Initial focus of these efforts will be in the subwatersheds of the northern coastal bays.

6. Encourage the use of the county’s forest mitigation-banking program.
7. Work with municipalities to ensure forest conservation program objectives are achieved.
8. Work with individuals, community associations and the towns to undertake tree-planting programs to improve water quality, meet TMDLs, and improve habitat.



Threatened and Endangered Species

Protection of threatened and endangered species habitat works hand-in-hand with ecotourism efforts. However, it does mean a change in development standard practice to ensure habitat protection. Today, 433 plant and animal species in Maryland are listed as threatened or endangered. These species have nearly lost their ability to survive. Typically, they have been impacted by altered, degraded, or lost habitat. Figure 3-4 maps the county’s sensitive species review areas, which are generalized locations of special habitats.

Some species are more adaptable and can persist in highly disturbed landscapes. Other more specialized species require specific habitat types to survive and reproduce. Continued

habitat loss for the specialized species can lead to their extinction. While species extinction is normal, recent human environmental alteration has been unprecedented, resulting in a growing extinction rate. In fact, the world is currently facing what scientists call an “extinction spasm.”²⁷

A threatened or endangered species habitat is defined as “an area due to its physical or biological features, provides important elements for the maintenance, expansion and long-term survival of a threatened or endangered species.”²⁸ This area may include breeding, feeding, resting, migratory, or over-wintering areas. As of May 2004, there were 24 animal species and 96 plant species listed as state-threatened or state-endangered in Worcester County.

Worcester County sits at a climatic and biological transition zone, and thus is the northern or southern geographical limit of many plant and animal species. This makes the county biologically unique and diverse.

For example, the extraordinary stands of bald cypress that line the Pocomoke River and its tributaries as well as the coastal bays’ tributaries are part of the most northerly bald cypress forest with its associated flora in the country. In fact, 40% of the total flora in this forested area range largely to the south. One of the most northerly populations of

sea oats exists on the southern portion of Assateague Island. The brown pelican rookery on Great Egging Island may be one of the most northerly brown pelican breeding sites.



Bald cypress are native to Worcester County. Nearly 300 bird species visit Worcester County. The Coastal Bays are a significant part of the Atlantic Coastal migratory bird flyway. Thousands of bird species stop, rest, and feed in the coastal bays wetlands, forests and waterways during their migrations. In addition, over one hundred species of birds are seasonal or permanent county residents. Eagle’s Nest golf course on Sinepuxent Bay has recorded the most bird species sightings during the annual Audubon-rated golf course surveys.

Considered one of the best forest habitats on the Atlantic coast, more than 172 bird species find habitat in the Pocomoke River and its adjacent forest. In addition, 27 mammal, 29 reptile, and 14 amphibian species find habitat there. Seventy-two families of plant life have

²⁷ Wilson, Edward O. *The Diversity of Life*. W. W. Norton & Company. 1992. In *The Diversity of Life*, Dr. Wilson shows that one fifth of all species are in danger of extinction within the next 30 years --- an extinction spasm of dinosaur-like proportions that would profoundly degrade the quality of life of the remaining species.

²⁸ See Code of Maryland Regulations (COMAR) 08.03.08.

been identified in the Pocomoke River wetlands.

Habitat loss and change often has effects disproportionate to the area disturbed and affects many species. General protection of forest, wetland and other habitats will provide essential space, cover, food and resources needed to support fish and wildlife that are not officially threatened. In addition, protection of species diversity maintains the natural systems' integrity in which each species plays a role in the local ecosystem.

Maryland has identified possible and known locations of threatened and endangered species habitat statewide. The Sensitive Species Project Review Area (SSPRA) maps locate these areas (see Figure 3-4 for local SSPRAs). Other locations, described below, have been identified as threatened or endangered species habitats.

Natural Heritage Areas--State-designated Natural Heritage Areas are within areas legally protected, such as parks or state wildlife management areas. Each contains threatened or endangered species or species in need of conservation, and they are considered to be among the best statewide examples of its kind.

Worcester County has four Natural Heritage Areas: one is on Assateague Island and three are in the Chesapeake Bay Critical Area. Maps showing the Critical Area and Natural Heritage Areas locations are available for review at the county offices.

Habitat Protection Areas--The state has identified three areas within the Critical Area, which contain habitat(s) of threatened or endangered species. These "Habitat Protection Areas" are the

Pocomoke Sand Ridge, Poorhouse Branch and Pocomoke River North Snow Hill (a section of the river, which harbors an endangered aquatic plant species). Site maps and detailed descriptions are also available for public at the county offices.

Significant Plant and Wildlife Habitat Areas--In, the state's Wildlife and Heritage Division identified areas, which contain state-listed threatened or endangered species and species "in need of conservation." The focus of this effort was on areas outside of the Chesapeake Bay Critical Area.

Objective

Worcester County's objective is to protect the habitats of threatened and endangered species that occur in the county.

Programs and Policies

The Worcester County Critical Area Programs outline a habitat protection plan for threatened and endangered species and species "in need of conservation" in the Critical Areas. The Worcester County Forest Conservation Law recognizes threatened and endangered species habitats as retention priority areas. Under both the Worcester County Critical Area Programs and the Worcester County Forest Conservation Law, the county provides, at its discretion, the Maryland DNR with the proposed development site plans for review.

Habitats of several threatened and endangered plant species and potential habitat for the federally threatened Delmarva Fox Squirrel have been permanently protected in the Coastal Bays Rural Legacy Area.

The Nassawango Creek Preserve, the Pocomoke State Forest and the Wildlife Management Areas protect habitats of many threatened and endangered species. State-designated “wildlands” within state-owned properties provide additional protection to certain habitats. There are three “wildlands” in Worcester County covering over 4,000 acres. They are the Cypress Swamp and two areas along the Pocomoke River.

Many threatened and endangered species habitats in Worcester County are found in tidal and nontidal wetlands. Tidal and non-tidal wetland disturbance is regulated by federal and state agencies.

Recommendations

1. Channel growth and development away from habitats of threatened and endangered species
2. Continue to work with Coastal Bays Sensitive Areas task force and other initiatives aimed at identifying and protecting sensitive species
3. Adopt Maryland Department of the Environment’s (MDE) dock and pier construction standards
4. Conduct landowner outreach regarding threatened and endangered species protection and continue to use programs, such as the Rural Legacy Programs, to help willing landowners protect sensitive habitats on their private properties²⁹
5. Preserve and provide natural areas that are large and circular with a minimum dimension of

300 feet as a general rule for habitat protection

6. Preserve existing and create forested riparian corridors
7. Consider adoption of the state dock and pier environmental study recommendations

Floodplain Management

Floodplains, lands along waterways subject to flooding, locally have low relief and sedimentary soils. Floodplains are defined by how often they flood. A 100-year floodplain has a 1% probability of flooding in a given year and is not tidally influenced.



Local flooding can occur in major storm events

Areas of the county’s tidal, 100-year floodplain are highly developed. Both residential and commercial uses exist within this floodplain, and previous plans provided for some additional growth here. Figure 3-5 maps the county’s floodplains.

Most of the time a floodplain is available for use. However, during floods they can be dangerous. Hurricane Katrina reinforced this fact.

Floods injure people physically and emotionally and cause economic damage. Beyond this, emergency personnel are put at risk when called upon to rescue flood victims. In Worcester County, flooding must be taken very seriously.

²⁹ Federal law requires threatened and endangered species habitat be protected.

To protect public safety and property limiting future building in floodplains and stringent construction standards will help reduce injuries and property damage. Federal, state and local policies should be consistent to implement this approach.

Objective

The county's objectives for floodplain protection are:

- Limit development in floodplains
- Reduce imperviousness of existing and future floodplain development where possible
- Preserve and protect the biological values and environmental quality of tidal and non-tidal floodplains, where reasonable and possible to do so.

Developed floodplains have a reduced capacity to absorb stormwater, resulting in increased flooding. For example, development results in new impervious surfaces (roads, sidewalks, roofs, etc.), which limit the effectiveness of the floodplain by reducing the land's absorption capacity. This increases the potential for flooding. It is therefore important that the natural floodplain character be maintained, wherever reasonable, to promote public safety, to reduce economic losses, and to protect water quality and wildlife habitat.

Worcester County with its low relief faces additional flooding issues. The county's topography drains slowly. Worcester has 250 miles of artificial drainage ditches, which must be maintained to continue current land use, generally agriculture. Poor drainage due to inadequate or inappropriately designed/maintained drainage ditches and stormwater management devices result in unnecessary standing water. Poor drainage also negatively affects

agriculture and forestry activities. Additionally, wet soils compromise septic system performance polluting groundwater.

Several areas of the county commonly flood during storms. The Federal Emergency Management Agency (FEMA) defines a "repetitive loss property" as a property that has had two or more flood losses within ten years with claims of \$1,000 or more on each loss and where the losses occurred at least ten days apart.³⁰ Out of a statewide 373 repetitive loss properties, 44 (12%) are in Worcester County; of these, 17 are located in the community of Snug Harbor.³¹ Other areas that commonly flood include:

- Southern Ocean City
- Portions of Ocean Pines
- Western Berlin
- Pocomoke River floodplains in Snow Hill and Pocomoke
- Porter Crossing Road Bridge
- Whiton Crossing Bridge

Sea level rise will increase flooding hazards. Maryland is particularly vulnerable to sea level rise. During this century, as sea level rises, shorelines could retreat by miles in parts of Worcester County.³² Narrow bay beaches and wetlands at low elevations, both important habitats, would be lost to even a modest rise in sea level. Currently, the state recognizes a right to protect shores with hard structures (e.g.

³⁰ 42 U.S.C. § 4121(a) (7), 2002.

³¹ Maryland Department of The Environment data, 2002

³² "Rising Seas, Coastal Erosion, and the Takings Clause: How to Save Wetlands and Beaches Without Hurting Property Owners"; *Maryland Law Review*; Volume 57, 1279-1399; 1998.

riprap). As sea level rises, these hard structures will prevent “migration” of beaches and wetlands, and these natural features will be lost.³³

Programs and Policies

Worcester County Floodplain Management Law, the Worcester County Forest Conservation Law, the Critical Area Law and conservation zoning provide protection of floodplains. In addition, the county has adopted code changes to reduce impervious surface requirements for roads in some kinds of new developments.

Flooding from hurricanes is a serious threat to life and property with the potential for extensive damage and disruptions. To reduce potential damage, the county is developing a hazard mitigation plan. This first step will provide guidance for pre-disaster activities. The second phase of addressing disasters is to develop a post disaster plan. Confusion and rapid decision-making follow a disaster. Advance planning can position the county to reduce its exposure to future disasters and reduce the need for ad hoc decision-making. Hurricane Katrina has taught us that effective post-disaster planning is necessary for an effective recovery process.

Recommendations

1. Work with federal and state federal agencies to update the county floodplain maps, with first priority being areas that are mapped as 100-year floodplain without base flood elevation established.
2. Limit new development and construction in the floodplain.
3. For new development, encourage the dedication of 100-year floodplains (not including wetlands) to open space.
4. Promote uses, such as golf courses, open space easements, natural areas, and recreational open space to reduce impervious surfaces in floodplains.
5. Work to acquire properties in the 100-year floodplain, and return them to a natural state.
6. Reevaluate the effectiveness of the current floodplain protection regulations.
7. Discourage the location of new homes and roadways in the “V” or wave velocity zone and the 100-year floodplain.
8. Complete and implement a hazard mitigation plan for flooding, wildfire, and other natural hazards.³⁴
9. Develop and implement a post-disaster recovery and reconstruction plan to facilitate recovery and to reduce exposure to future disasters.
10. Consider participating in the Community Rating System Program, to receive flood insurance premium credits. To participate, the flood program must address public information, mapping, regulation; flood damage reduction; and flood preparedness.
11. Consider code changes that will limit impervious surfaces.
12. Develop a sea level rise response strategy (include a two foot free board requirement for properties

³³ Ibid.

³⁴ Include provisions for locating some emergency equipment out of the reach of extreme conditions to ensure their availability in the worst case.

exposed to flooding and discourage shoreline hardening).



Farmland Conservation

The 2002 Census of Agriculture noted that the county's 403 farms covered 131,249 acres or 43 percent of Worcester County.³⁵ Average farm size was 326 acres, and median size was 70 acres.³⁶ Worcester County accounts for 20 percent of the state's broiler and other chicken meat production. Worcester County ranks third in the state in corn production and sixth in soybean production.³⁷ Figure 3-6 depicts the county's prime agricultural soils. Figure 3-7 shows the county's preserved farm and rural legacy areas.

Many factors will influence agriculture and its productivity in Worcester County in the future. Some of these factors, such as the global economy, are out of local control. Local land use policy, which can have a major effect on agriculture, is within local control.

Between 2000 and 2003, 1,400 acres of farm and conservation land was converted to other uses.³⁸ "Prime"

farmland is a limited resource and is of major importance in meeting short- and long-term needs for food and fiber. The U.S. Department of Agriculture defines prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is available for these uses."³⁹

About 59,500 acres or 19 percent of the county's total acreage meets the prime farmland criteria. These areas are scattered throughout the county. The remaining non-prime land is none-the-less important for maintaining the county's "critical mass" of working farms.

To keep this critical mass, the county established a state certified agricultural preservation program. This program requires that the county:

1. Employ a staff person dedicated to land protection efforts
2. Update its comprehensive plan and include a strategy for assuring the long-term integrity of the agriculture and conservation zones
3. Consider adopting the following policies:
 - a. Offering 50% property tax credits to landowners agreeing to extend an agricultural preservation district status to 10 years or more
 - b. Offering 100% property tax credit on land on which easements have been purchased
 - c. Providing additional matching funds for

³⁵ Census of Agriculture, USDA. 2002.

³⁶ Ibid.

³⁷ Maryland Agricultural Statistics Service, 2001.

³⁸ Department of Comprehensive Planning and Department of Recreation and Parks, *2005 Draft Worcester County Parks, Recreation and Land*

Preservation Plan, Snow Hill, Maryland, 2005, page 40.

³⁹ Soil Survey, Worcester County, MD. 2004.

- MALPF easement purchases
- d. Establishing an incentive program to add 10% to the state’s easement offer for high priority farms
- e. Providing supplemental funding if a MALPF offer is insufficient to obtain priority easements

In return, the county keeps 75 percent of the agricultural transfer tax, which is used to fund the program.

Objective

The county’s farmland conservation objective is to avoid the loss of large contiguous working farming areas and to ensure that prime farmland is given the highest protection priority.

Programs and Policies

Worcester County uses the Rural Legacy Program and the Maryland Agricultural Land Preservation Foundation (MALPF) program to purchase voluntary farmland easements. The MALPF program focuses on protection of developable and farmable soils. The Rural Legacy Program targets open space, habitats, and other natural resources within the Rural Legacy Area.

Through the end of 2004, the Rural Legacy Program and the MALPF programs have preserved over 6,000 acres and over 3,000 acres respectively.

Recommendations

1. Continue to permit only minor subdivisions in the agricultural conservation zones.
2. Protect 1,000 acres of farmland per year with voluntary easement purchases.
3. Target the area south of Snow Hill for intensive landowner

- outreach regarding available land conservation options.
- 4. Offer 50% property tax credits to landowners agreeing to remain in MALPF District status for at least 10 years.
- 5. Offer 100% property tax credit on land on which easements have been purchased.
- 6. Provide additional matching funds for purchase of MALPF easements.
- 7. Establish an incentive easement program to enhance the State’s offer by 10% for high priority farms, where appropriate.
- 8. Provide funding for supplemental payments on MALPF easement purchases when State funds and county matching funds already committed are insufficient to make an offer.
- 9. Explore other sources of funds to meet preservation objectives and encourage the state and federal governments to increase funding for land protection. Provide local funds as county finances permit.

Historic and Cultural Resources

The Lower Eastern Shore Heritage Management Plan (LESHMP) documents and analyzes the historic and cultural resources of the region (Worcester, Wicomico, and Somerset Counties). The Plan recognizes Worcester County’s part in the region’s “wealth of history, small towns, natural areas, and beautiful landscapes threaded by country roads, trails, and waterways.”⁴⁰

Paul Touart in his *Along the Seaboard Side the Architectural History of*

⁴⁰ Lower Eastern Shore Heritage Plan, 2002, page 1-7.

Worcester County, Maryland inventoried over 425 historic properties in the county. Much of these historic treasures remain today. Berlin has been active in seeking placement on the National Register of Historic Places for its commercial and significant residential properties.

The municipalities and the county should continue to pursue the preservation of the county's historical and cultural resources. Specifically, the county should investigate the creation of a historical preservation program and review process.

County historical and cultural resources as appropriate should be added to the interpretive sites identified in the LESHMP. For example, the Germantown School in Berlin and the Sturgis One Room Schoolhouse in Pocomoke would be excellent interpretive sites.

Mineral Resources

Worcester County contains significant sand and gravel resources. Figure 3-7 maps the county's potential sand and gravel resources along with existing borrow sites. These materials are mined for road fill and construction uses. Currently, there are over fifteen active surface mines in the county.

Potential sites for sand and gravel mining must be undeveloped. Mining operations have safety, noise, traffic, dust and aesthetics that can affect the public or adjacent landowners, thus not all potential sites are suitable.

From 1940 to 1990, the annual per capita demand for sand and gravel production in Maryland increased from 1.48 tons to 3.82 tons. Population growth and general development will increase this demand. The loss of Worcester's mineral

resources in the long-term is a concern. As mining sites are at greater distances from the end user, costs increase, as transportation is the main cost component.

Programs and Policies--The county requires that all excavations be backfilled or graded when operations are discontinued.

The county regulates dust generation, times of operation, safety issues, appearance, protection of public water supply, and clearing of vegetation. All surface mining operations in Worcester County must have direct access to or be within fifteen hundred feet of a highway. Surface mines are not permitted within one mile of an established residential neighborhood or major subdivision. All surface mining operations are also regulated by the Maryland Department of the Environment.

Objective--Worcester County's mineral resources management objectives are:

1. Reduce conflicts between mineral extraction areas and surrounding land uses
2. Coordinate mineral extraction activities with the appropriate State agencies
3. Assure that adequate amounts of sand and gravel resources are protected for future use
4. Ensure proper operation and decommissioning/restoration procedures are implemented

Recommendations

1. Maintain maps and permit data showing existing or potential sand and gravel mining sites
2. Zone sufficient potential mineral resource extraction areas to meet anticipated demand

3. Explore the appropriateness of a right-to-mine law

Environmentally Sensitive Design and Green Building

The next two sections tie together the preceding sections with the recognition that natural resource conservation and restoration is best approached holistically rather than in a piecemeal fashion taking each resource category individually. In addition, it reflects the reality that Worcester County will experience continued residential and commercial growth.



Passive solar heating and “green” technologies can be incorporated into residential home designs

Buildings consume nearly a third of America's energy—much of it wasted—while land-use decisions influence another third used in transportation. Development therefore offers abundant opportunities for saving resources, reducing waste, and restoring damaged land. Future generations will be affected by current resource use practices.

Existing regulations address wetlands, forests, shorelines, and other natural features. Existing regulations are prescriptive and are mainly negative, (“thou shalt not”), directing what should not be done. This established a path of least resistance leading to urban sprawl; traffic congestion; unnecessary environmental damage; and disjointed,

disconnected non-communities. To create well-designed, sustainable, and diverse communities a revised approach is needed.

This approach calls on some simple, long-held principles of urban design. Compact development and site design to minimize land consumption preserve open space and improve community interaction. Protecting existing features as well as restoration of damaged site components add value. Natural processes can be used to manage stormwater, energy consumption, and pollutant reduction. Architectural designs can reduce energy and non-renewable material consumption, and promote a sense of place.

Development does not inherently need to excessively damage the environment. However, its form and pattern must be designed to protect natural resources and processes. Today's technology joined with improved scientific understanding and commitment to environmental protection can create more compatible and livable neighborhoods and communities.

Using these basic principles and working with natural features rather than considering them obstacles, can produce development that enhances the quality of life and the built environment.

Objectives

1. Ensure that new development:

A. Uses a systems approach to environmental planning

Planning and regulatory emphases must be on larger ecological units: the watershed or the ecosystem, rather than an individual site. This will help preserve ecological functions. This is consistent with the development of

Total Maximum Daily Loads (TMDLs) as well as the Atlantic Coastal Bays Critical Area Program.

In addition, Worcester County has prepared, or is in the process of preparing, small watershed plans for the remaining portions of the Coastal Bays watershed. These watershed plans will identify specific actions to protect the ecological features and address TMDLs and the critical area program.

B. Preserves hubs of high-quality habitat connected by natural corridors

For long-term wildlife survival, habitat “nodes” must be of sufficient size. The general rule is the larger the better. While land preservation efforts protect the largest patches of wildlife habitat, land developers can help ensure species viability when they piece together a matrix of smaller areas, connected by corridors, to the larger preserved areas. Patches preserved in an urbanizing landscape should be as large and round as possible. A wildlife corridor is a “bridge” between patches of habitat. Sources recommend widths of at least 300 feet wide to create interior areas that accommodate wildlife movement.⁴¹

C. Strives to restore and enhance reduced or lost environmental functions

Where certain development, farming, logging, or surface mining practices have degraded a site, restoration opportunities exist. Wetlands can be restored by removing drains or fill, reintroducing native plants, managing

invasive plants, and/or using water control structures. Channelized streams can be restored to a more natural state. Restorations can improve ecological functions (e.g., filtering of pollutants) and aesthetics.

D. Clusters development and use other low impact development techniques to minimize runoff and habitat loss

On undeveloped land, stormwater seeps into the ground nourishing the vegetation. On developed land, stormwater runs off rooftops, roads, parking lots, and other impervious surfaces, reducing groundwater absorption and picking up pollutants that move into surface waters. By reducing total impervious surface area through clustering, more stormwater infiltration occurs. In addition, more land is devoted to wildlife habitat.

E. Uses integrated pest management

Areas of turf grass, golf courses, planted medians and large lawn subdivisions can demand significant quantities of water, fertilizers and pesticides. Integrated pest management (IPM) is becoming standard practice, particularly for golf courses.

IPM is a cost-effective management technique as well as being environmentally sound. Pests are controlled by introducing and maintaining natural predators, diseases and insect-resistant grasses, and using practices that keep the turf in optimum health. Pesticides are spot applied when possible. Xeriscaping uses plants adapted to local conditions and minimizes watering. Plants that require watering are kept

⁴¹ Ewing, Reid. 1996. *Best Development Practices*.

to small areas and use low-flow or drip irrigation.

2. The county should lead the way to sustainable development by ensuring that county buildings:

A. Are energy-efficient

The best approach to reducing energy bills is through conservation. An inexpensive and beautiful approach for supplying substitute energy is through passive solar design.

Deciduous trees on a building's south side, saves summer cooling costs. Strategic vegetation placement can also buffer winter winds. These approaches can reduce heating and cooling cost by more than 30%, thus compounding savings by reducing the mechanical heating and cooling equipment needs.

Insulation, choice of appliances, lighting, and window and door design also contribute to savings.



Innovative "green" building materials reduce development costs and environmental damage

B. Are water-efficient

Water conservation is not just for times of drought. Maryland has experienced some exceptionally dry periods during the recent past, and the word drought has stimulated government and citizen action. Sound water use practices reduce stress on

our resources, both by limiting water use and wastewater discharges.

Conserving water reduces wear and tear on wastewater treatment plants and the water distribution systems and can postpone or eliminate the need for major infrastructure investments. Regularly using less water helps us during drought conditions. Water conservation measures include: faucet aerators, watering early in the day or with drip irrigation, rain sensors for irrigation systems, installing low flow or water-less toilets, and repairing leaks quickly.

C. Use environmentally conscious building materials and practices

Use of environmentally friendly building materials and construction methods conserve natural resources and reduce environmental damage. Researchers are striving to develop and market alternatives to conventional building materials and increase the use of recycled materials. These new alternatives include I-joists, 24-inch on-center framing, recycled plastic decking materials, recycled flooring, insulation made from recycled newspaper, and many others. County leadership will help bring such products and methods into standard practice.

D. Have improved indoor air quality

Many building components give off toxic gases. Radon, lead, formaldehyde, organic chemicals used in furniture and finishes, and carbon monoxide from heating systems pollute indoor air. Drapery fabric, cleaning products, carpeting, paints, and furniture can all contain these chemicals. Avoiding their use is

a cost-effective way to reduce indoor contamination. Ready alternatives exist, for example, furnishings made with natural or non-toxic materials can be substituted. Consumer and builder education will create demand for these products and methods.

E. Are planned from the beginning to have all of these characteristics

The best way to assure an environmentally friendly building is to use a “systems approach” to its planning and construction. This technique treats the site and structure components as one system. For instance, if you install efficient windows and use landscaping to buffer the building, this reduces heating and cooling system capital and operating expenses. Standard practice has been for the site, the building shell and its internal components to be designed almost independent of each other. This leads to excessive operating costs. To prevent this all aspects of the built environment should be integrated and designed based on lifetime costs.

Recommendations

1. Integrate open space requirements for new development with the green infrastructure plan to provide maximum wildlife connections
2. Require low-impact development techniques for new and redevelopment
3. Produce and adopt an illustrated development guidelines document
4. Require new development to meet ecological function and restoration goals
5. Include integrated pest management (IPM) and

xeriscaping⁴² into new development covenants and design guidelines

6. Develop county green building program. Ensure that all new county buildings are environmentally friendly by designating staff to facilitate the county’s adoption and implementation of a green building program
7. Foster use of green building techniques in the private sector
8. Seek grants to help offset costs associated with environmentally friendly design and building

Green Infrastructure

Green infrastructure like its parallel, grey infrastructure (sewer, water, roads, and other man-made facilities), provides the basic backbone resources for overall system function. Green infrastructure provides clean water and wildlife habitat. Made up of corridors and hubs, it provides a connected system of wildlife habitat. Figure 3-8 maps the state’s local green infrastructure.

Development tends to break up forests and fields, isolating wildlife habitats. Sensitive species like forest interior dwelling birds lose their habitat. Common, more aggressive and adaptive species take their place reducing diversity.

Recognizing and retaining green infrastructure keeps basic ecological structures in place. This in turn retains an area’s ecological functions.

Greenways are natural corridors connecting parks and large tracts of forested and other high value lands.

⁴² Xeriscaping uses drought tolerant plant materials and other methods to minimize irrigation needs.

They provide for the natural resource conservation, wildlife habitat protection, plants and animal movement, recreation, alternative transportation, and nature study. Maryland has over 1,500 miles of protected greenways, including 600 miles of hiking/biking trails. Most trails are publicly owned.

Ecological corridors: purchased/protected primarily for natural resource protection or wildlife corridors, although they often contain trails or other amenities aimed at serving the human population.

Recreational corridors: purchased/protected primarily for recreation, although these corridors contain at least a minimal natural buffer affording some ecological and/or habitat benefits.

Connectors: walkways or on-road routes in heavily built environments that provide key connections between or within greenways corridors; these have little, if any, ecological benefits.

Water Trails: recognized water routes with access points, resting places, and destination spots along marine and inland waterways, designed for appropriate watercraft in accordance with the natural characteristics of each specific area.

The Maryland Greenways and Water Trails Program lists the following county greenways:

- Assateague Island National Seashore/E.A. Vaughn Wildlife Management Area/Rural Legacy Area/Pocomoke State Forest
- Sinpuxent Bay Water Trails (existing routes that skirt Assateague Island)

- Nassawango Creek Preserve (partially protected creek corridor)

Green infrastructure protection provides the following benefits:

- Improves property values, provides tourism opportunities, attracts businesses, and reduces public costs
- Provides a more balanced protection land for recreation and agriculture while protecting ecological services that help clean the air and water



Native plants require less care than exotic varieties

- Supports the forest products industry, seafood industry, nature tourism, and outdoor recreation.
- Reduces flooding and the need for expensive stormwater management and restoration projects by protecting water resources, including creeks, wetlands, and riparian corridors.

Objective

The county’s green infrastructure objective is to identify and protect local green infrastructure from injurious development.

Policies and Programs

From 2000 to 2004, the Coastal Bays Rural Legacy Program has protected 6,000 acres of land in the Chincoteague

Bay watershed, creating a greenway connecting the E.A. Vaughn Wildlife Management Area to the Pocomoke State Forest.

Recommendations

1. Develop a county greenways plan that integrates bike and pedestrian paths with hubs and corridors of protected land that networks to a permanently protected greenways system.
2. Continue to build and “infill” the Coastal Bays Rural Legacy Area with an emphasis on waterways and shorelines protection.

Conclusion

Ultimately, the county’s quality of life that is so valued will be influenced by the integrity of its bays, wetlands, woodlands, working farms, natural communities, water, air and soil quality, and the quality of the built environment. These elements are all interrelated.

As growth continues, two basic natural resource planning elements must be brought into the land use decision process more than in the past:

1. The county must assess and protect its most sensitive and ecologically important lands.
2. New development must be environmentally of low impact and restore natural systems and functions.

Informed citizens, suitable programs, and continued scientific analysis will provide the foundation for the county’s environmental protection. This will help ensure the economic, environmental, and recreational benefits we enjoy today will remain and be improved for future generations.

Chapter Four: **Economy**

Introduction

The resort industry, construction/real estate/finance, the public sector and agriculture are the county's largest employers. These sectors employ 80 percent of the workforce. Each of these industries relies on the county's natural resources and its rural and coastal character for their success. For this reason, growth and economic development must be done so it does not compromise these characteristics. Simply put--we must not kill the goose laying the golden eggs.

Year-round and seasonal population growth has provided a growing market for the county's businesses. For the future, it is expected that the service industries will continue to lead the economy. Economic development efforts should focus on nurturing existing local industries and encouraging higher wage industries to locate in the county.

This chapter provides a goal, objectives and a series of recommendations for the county's economy.

Goal, Objectives and Recommendations

Goal

Expand Worcester County's economy so that it will realize its full potential for employment, business, tourism, light industry, agriculture, forestry, and commercial services without compromising the county's rural and coastal character and its sustainability.

Objectives

To implement the above goal, the objectives below are adopted:

General

1. Raise the county's median income to the state's level by increasing higher paying year-round employment; low-wage jobs⁴³ are not considered appropriate economic development.
2. Diversify the economic base by extending the tourist season and by encouraging growth of existing and new employers
3. Increase employment opportunities to stem the export of talented young workers
4. Match vocational education with anticipated skilled employment demand
5. Review vocational education's centralized approach to determine if decentralizing facilities would improve the system
6. Help existing employers to expand the economy and employment base
7. Reduce unemployment
8. Work with the towns to support their economic development efforts
9. Provide for and support development of facilities to accommodate the county's aging population

Tourism

1. Support the traditional resort industry while diversifying this offering with a broader range of high caliber recreational/cultural facilities
2. Encourage the development of sports, cultural or other large attractions to reinforce the county's traditional attractions

⁴³ County economic development efforts seek jobs paying \$12 or more per hour as an acceptable wage.

3. Continue to support the beach replenishment project
4. Work with the towns to support their tourism efforts
5. Expand eco-tourism opportunities through environmental, heritage and cultural attractions
6. Accommodate the location of year-round recreational and resort oriented land-uses
7. Develop facilities and attractions that continue full operation in the non-peak seasons
8. Recognize and provide for the needs of the hunting, fishing, and boating sectors

Construction and Real Estate

1. Provide through the land use plan sufficient land for planned growth to meet expected demand for housing, commercial and support services.
2. Continue to provide vo-tech training to provide skilled labor for the construction industry
3. Provide “in-service” training to keep construction and real estate professionals informed of relevant county policies and programs



Industrial Development

1. Continue the industrial development program to retain existing industries and emphasize light industry to expand the county's

research/product-development, manufacturing, health and high-tech sectors

2. Maintain an inventory of suitable locations for appropriate industries to locate within the county
3. Locate industrial uses primarily in industrial parks
4. Address industrial infrastructure needs, including electrical supply, natural gas, and bandwidth improvements
5. Inventory and develop policies for rehabilitating and using “brown fields” sites

Health Care

1. Anticipate growth in health care needs and facilitate the industry's expansion to address these needs.

Agriculture and Forestry

1. Work to preserve farming and increase its economic viability. Explore the utility of agricultural tourism⁴⁴, alternative crops (flowers, organic farming, vegetables, cotton, hemp, wine grapes, greenhouse crops), “value-added” products (wine, soy products, bio-fuels), and co-op marketing
2. Provide for sufficient agricultural support services
3. Reduce farm area fragmentation through agricultural zoning permitting only minor subdivisions (five or less lots), the state's agricultural preservation program, the Rural Legacy program and explore the use of a transfer of development rights and other preservation mechanisms

⁴⁴ Worcester County Tourism and the Agricultural Extension Service began in the fall of 2004 to organize local farmers to develop agricultural tourism.

4. Continue the “right-to-farm” law
5. Encourage development of an educational/recreational agricultural park
6. Review permitted land uses in agricultural zone to ensure compatibility with agriculture as a quasi-industrial use. Adjust requirements to prevent inappropriate uses from developing in agricultural areas
7. Work to preserve forestry by preventing fragmentation and providing for support facilities

Fisheries

1. Seafood landing and processing facilities should be retained through land use controls and incentives
2. Protect the seafood and recreational fisheries through fisheries management and the use of suitable local, state, and federal regulations to protect water quality, fish stocks, nursery areas, and local access to fisheries
3. Encourage aquaculture of fish, clams and oysters
4. Maintain the West Ocean City Harbor as a working commercial harbor



Compatible signage helps commercial uses fit into a neighborhood

5. Work to bring dormant oyster leases back to production

Commercial Services

1. Locate commercial and service centers in major communities; existing towns should serve as commercial and service centers.
2. Provide for suitable locations for commercial centers able to meet the retailing and service needs of population centers.
3. Encourage mixed-use commercial, office and residential development.
4. Bring into balance the amount of zoned commercial locations, with the anticipated need with sufficient surplus to prevent undue land price escalation.
5. Locate commercial uses so they have arterial roadway access and are designed to be visually and functionally integrated into the community.
6. Explore the use of transfer of development rights to reduce the over supply of commercially zoned land.
7. Provide design guidance for commercial development to ensure it is a community asset. Commercial development by its nature locates on highly visible sites, therefore increased landscaping, signage, lighting, screening, architectural and other standards are necessary to maintain neighborhood character.
8. Develop appropriate site, design and location standards for larger-scale and “big-box” commercial developments.
9. Discourage “franchise architecture” and standard flat roofed strip-type commercial facilities.

Recommendations

Employment

Agricultural employment will largely remain stable or may increase somewhat

should value-added products and agricultural tourism take hold. Manufacturing has trended toward a three percent growth rate. Retailing, and

Table 4-1 Employment

<u>Sector</u>	<u>Number</u>	<u>Percent</u>
Agriculture ¹	463	2.2
Construction	1,958	9.1
Manufacturing	1,458	6.8
Wholesale trade	735	3.4
Retail trade	2,885	13.4
Trans., utility ¹	641	3.0
Information	532	2.5
Finance, banking	1,702	7.9
real estate		
Prof., Mgt ¹	1,279	5.9
Educ., health	3,704	17.2
Hotel, food ¹	3,817	17.7
Other services	984	4.6
Public admin.	1,352	6.3

Source: Table DP-3, Census 2000

other categories will track with public service employment, health care, and population growth. Tourism is expected to grow at a moderate pace.

Industrial Strategies

Industrial attraction and location are a challenge. Identifying and recruiting compatible industry requires a coordinated strategy to provide appropriate utility, transportation, and other infrastructure. The number of industries relocating is very limited while the competition among jurisdictions is great. Large tax abatements, below market land sales, and other incentives are nearly a prerequisite. For this reason, economic development efforts should focus on existing industries and provide the basic infrastructure for these businesses.

Heavy industry and the hospitality sector can be incompatible. For this reason, both the type and location of industrial development must be carefully planned. In addition, site and architectural design standards are critical. Public services, sufficient electrical, natural gas, and other utilities are required. Given this, industrial development should focus on light and heavier industry in the Pocomoke area and light industry in the existing industrial areas near Berlin and near the Village of Showell. The county’s economic development efforts should continue to target higher wage jobs and industry compatible with their location.

Resort Industry

For the last century, the tourism industry based on sun, sand, and surf flourished in Worcester County. Today, these original attractions remain and have been added to by golf, antiquing, bird watching, hiking, kayaking, marine mammal tours, and Assateague Island’s interpretative offerings. These additions have broadened the county’s allure. Efforts to expand recreational activities should continue, as our visitors will become even more discriminating.

Peak visitation approaches 400,000 and averages over 300,000 persons during the summer. This, along with more potential activities noted earlier, has maintained a strong peak season and a growing “shoulder” seasons.

Recent statistics show a stabilizing trend in visitation, retail sales, rounds of golf, and other indices.⁴⁵ Poor weather in 2003 may account for some of this, but the trend for the near future is for

⁴⁵ Lippman, Frizzel and Mitchell, LLC, *Ocean City Revisited 2004, Summary of Economic Indicators*, www.lfmvalue.com.

comparatively modest growth. Development in Ocean City is constrained by land availability. Housing demand and the subsequent demand for commercial and other services are migrating to the mainland. This trend will continue to stimulate demand for housing and services through at least the early stages of the planning period.

Maintenance of the county's rural and coastal character will be increasingly important as competing resorts continue to develop and experience homogenizing sprawl. Worcester's distinctive rural and coastal setting will become an increasingly scarce commodity stimulating demand and spurring the county's economy. The need for continued natural resource stewardship will grow over time.

Natural resources and the inherent charm of the county's towns will stimulate tourism. The county should continue to work with the towns to implement the *Management Plan for the Lower Eastern Shore Heritage Area*. This plan provides a regional guide to tourism and cultural resource development. It designates Pocomoke City as one of three "Regional Interpretive Centers" and identifies it as a new destination for the region. Along with Ocean City's obvious allure, Berlin and Snow Hill also provide opportunities for tourism growth. The county and the towns should continue to expand their cooperative tourism efforts.

Commercial Facilities

Retailing is one of the largest employers in the county⁴⁶ and is a significant contributor to the economy. Currently, designated commercial lands far outstrip the potential demand for such lands.

⁴⁶ Census 2000, Table DP-3 Profile of Selected Economic Characteristics: 2000, p. 3.

When half of these lands are assumed to be undevelopable (wetlands and other constraints), the potential commercial uses can serve an additional population of over two million persons. The supply of commercial land should be brought more in line with potential demand. Otherwise, underutilized sites/facilities and unnecessary traffic congestion will result.

With the plan's emphasis on community rather than standard subdivision-type residential development, local commercial services should be built into new and expanded community plans. In addition, "big-box" scale commercial development will need special siting and design standards. The business community has a strong tradition of community participation and leadership. This tradition should now be extended to meeting a higher design standard for such uses. Existing commercial areas are recognized and accommodated by the plan's land use policies.

Health Care

With the opening of the Atlantic General Hospital, health care in Worcester County took a major step forward. The county's demographics are trending toward an older population, health care will therefore, play a larger role in the economy.

Agriculture

In recent years commodity prices, which fluctuate with the world market have been putting pressure on farmers' margins. Two chicken processing plants have closed in the last two years due to consolidation in the chicken industry.

For the future, agriculture will remain an important component of the economy. The value of products sold in 2002 was \$123.5 million, an increase of one

percent over 1987 (2002 was a severe drought year).⁴⁷ Average sales per farm were \$306,330.⁴⁸ Field crop production (corn and soybeans) is used locally as poultry feed. The county is a net importer of grains for feed.

Locally, the concentration of processors has resulted in a reduction in competition for grain. This has added to the downward price pressure. Local support for agricultural infrastructure and encouragement of “value added” and alternative crops, along with development of agricultural tourism could help improve farming’s economics.

Preservation of farming is a key to the county’s rural character. Therefore, it is important to continue the “right to farm” policies and work to develop alternative income sources for farmers.

Construction

The construction industry employs nearly ten percent of the workforce. Inherently cyclical, this industry is sensitive to interest rates, the economic cycle, and demographics. These factors are outside the county’s control.

The plan provides for growth and development for planned population levels. This growth is anticipated to progress in the long run and therefore the construction industry will continue to be viable.

Fisheries and Seafood Processing

Local fisheries and the recreational and commercial seafood industry are at the mercy of fish stocks, which are regulated by international, national, regional, and



The West Ocean City Harbor is a working commercial harbor

state bodies. On a global scale, individual fish species vary in their availability and degree of management. Generally, fish stocks must continue to be managed.

Sport fishing continues to grow as an industry, while commercial fishing is not seeing many new entries into the business. Maintenance of the commercial fishing fleet is critical, as this is the required justification for federal maintenance of the Ocean City Inlet.

On the processing side, the clam processing plants have closed. The catch at this point is either trucked out or sold to the local markets and restaurants.

Worcester County can affect the fisheries from two perspectives: water quality/habitat management and land use controls to encourage aquaculture and retain the harbor in commercial fishing. Water quality and habitat are being addressed through watershed planning and its recommendations for water quality improvement, habitat improvement, and retention of tidal wetlands.

Commercial marine zoning preserves the West Ocean City working harbor. Rezoning changes have been requested

⁴⁷ US Census Bureau, Census of Agriculture 2002.

⁴⁸ Ibid.

due to the strong demand for waterfront housing. These requests have been denied. This policy should continue the harbor in commercial marine use. Compatible commercial development to stimulate tourism near the harbor would be an appropriate addition. However, tourism uses in the Harbor area should remain secondary to commercial marine activities.

Conclusion

The county's economy grows yearly and broadens its offerings and employment opportunities. Developing more living-wage employment joined with creating affordable housing will provide opportunities for residents and their children to stay in the area.

The economy relies on the rural and coastal character of the county and its natural resource base. This character and resources must be protected otherwise our key industries will be jeopardized. Selective economic development efforts, good land use, and site planning will keep the county's economy growing and maintain its resource based foundation.



The Pocomoke Discovery Center

Chapter Five: Housing

Housing within Worcester County reflects the national trend of rapidly inflating land and home costs. This trend provides fiscal benefits, but it has made the affordable housing problem even more severe than in the past.

Worcester County has been successful at reducing the number of substandard houses and renovating owner-occupied homes through the Community Development Block Grant Program. However, in 2005, the affordability issue far outstrips the ability of this program to address community-housing needs. For this reason, this chapter provides new directions for county policy.

Housing in Worcester County is actually two housing markets: permanent year-round housing and second homes. This is common to resort areas. Housing production and availability in absolute terms has been sufficient, yet affordability and location are issues. This situation is not expected to be addressed by market forces alone.

Resort housing markets are driven by the second home demand; housing for local residents most often occurs through new construction of relatively modest homes and the movement of resort housing through the “housing chain” into the affordable range. At this point, home prices and redevelopment of older properties and the intrusion of seasonal housing into traditionally locals’ housing areas, e.g. West Ocean City and Berlin, has driven housing prices well beyond the local affordability range.

Worcester County’s housing policy strives to address this situation by providing a variety of housing types able to meet the housing needs of all income

and age groups. To achieve this, it is anticipated that Worcester County will need to facilitate and guide the private housing market and work with public programs.



A variety of housing types exists in Worcester County

Good quality housing is important to the county due to its impact on families, the economy and the community. Families without stable housing are at a disadvantage in finding and keeping employment, their children move from school to school and fall behind their peers. Such parents often work two low-wage jobs to afford housing, which leaves little money for the basics and insufficient time for their children. Overall, this can stress such families to the point of turmoil resulting in abuse and other health issues.⁴⁹

For the economy, a lack of affordable housing can affect the local labor supply. The community struggles to attract teachers, police officers, and other public and private employees.

⁴⁹ Diriker, Memo and Ruth Baker, *Affordable Housing in Worcester County: Now and in the Future*, BEACON, Salisbury University, Snow Hill, MD, 2004, p. 1.

Table 5-1 Housing Stock Statistics

Below are pertinent housing stock statistics from *Census 2000* (April 1, 2000):

<u>Tenure and Occupancy</u>	<u>Occupied</u>	<u>Vacant</u>	<u>Total</u>
Owner	14,769	293	15,062
Renter	4,925	4,687	9,612
Seasonal use	0	17,681	17,681
Other use	<u>0</u>	<u>5,005</u>	<u>5,005</u>
Totals	19,694	27,666	45,862

Vacancy Rates

Owner occupied	1.9%
Rental	48.8% (Includes seasonal units)
Average Household Size	2.33

Housing Units by Type:

	<u>Detached</u> <u>Single Family</u>	<u>Attached</u> <u>Single Family</u>	<u>2-4 units</u>	<u>5 Plus</u>	<u>Mobile</u>
Owner Occupied	11,953	494	253	914	1,161
Renter Occupied	2,207	187	767	1,457	301

Age of Household 65 plus:

	<u>Number</u>	<u>Percent of Total</u>
Owner Occupied	5,286	27
Renter Occupied	985	5

Households Below Poverty Level:

	<u>Number</u>	<u>Percent of Total</u>
Owner Occupied	816	4
Renter Occupied	921	5

The county's housing stock is dominated by single-family homes, which account for 43.3 percent of all residences. Twenty-five percent of the county's residential units are located in buildings of twenty or more units; this fact reflects Ocean City's seasonal condominium stock. Mobile homes comprise nine percent of the housing stock. Nearly 80 percent of the housing units were constructed after 1970.

The county's vacancy rate appears quite high due to the timing of the Census (April) with the county's large number of seasonal units. Household size while

the second lowest in the state, is within a few tenths of the state average. One hundred and fifteen homes lacked either complete plumbing or kitchen facilities.⁵⁰

Compared to the statewide statistics, single family residences are about half the state's percentage, residences in large buildings are about six times higher, mobile home ownership is about four times higher and renter occupancy equals the state's percentage.⁵¹

⁵⁰ US Bureau of the Census, *Census 2000*, Table DP-4, p. 4.

⁵¹ Ibid, Table QT-H10.

When seasonal and year-round residences are taken together, the rate of home ownership is substantial, 75 percent. However, year-round owner occupied homes are 66 percent of the total occupied housing. This means a third of the year-round population is renters, which is the norm for the state and represents a substantial sector of the housing market.



Housing demand has been strong in Worcester County

A complete “windshield” survey of the county’s housing stock found 63 of the over 47,000 housing units to be substandard. These homes will, if eligible and economically feasible, be renovated through existing programs. This study found that the housing stock overall is in good condition.

It is anticipated that total housing production will average about 500 units per year through the planning period.

Goal, Objectives, and Recommendations

Goal

Worcester County residents should be able to live in comfortable, safe, and affordable housing.

Objectives

To implement the above goal, the following objectives are adopted:

1. Strategies to create affordable housing should be implemented, specifically: inclusionary zoning; alternative ownership practices, e.g., co-op housing; land trusts; and alternative financing should be explored.
2. Provide for the continuation and stability of the county’s traditionally black neighborhoods.
3. Housing, livability, and building codes should continue to be enforced to insure safe and adequate housing.
4. A variety of housing types including mixed-use projects should be provided for to meet the housing needs of all income groups and life stages.
5. Federal and state programs should be used to help meet Worcester County’s low and moderate income household’s needs.
6. Mobile homes should be recognized as an affordable housing alternative and additional park locations should be designated.
7. Mobile home siting regulations should be reviewed and updated.
8. Seasonal employee housing should be provided.



National builders now operate in the county

Recommendations

Recommendations are provided for both the second home and year-round housing markets.

Second Homes

Market forces will provide sufficient incentives to address second home demand. Therefore, Worcester County should provide appropriate location, density, and design standards to ensure this sector of the housing market's production is consistent with this plan's goals and objectives.

Primary Residences

The recently completed BEACON housing study states that affordability is now a serious problem and may become a crisis in the county's near future⁵². Real estate values reflecting historically low mortgage interest rates (below 6 percent), income growth and the shift in investments from stocks to real estate has lead to unprecedented appreciation of housing prices.

In the last five years, home prices in Maryland have increased by 71 percent.⁵³ Last year, Worcester County's median home price increased by 49 percent.⁵⁴ In August 2004, the county was rated as the least affordable jurisdiction in Maryland; 68 percent of the repeat buyers could afford a median priced home (\$305,000) and 46 percent of first time buyers could afford a starter

home priced at 75 percent of the median sales price (\$259,250).⁵⁵

Of the BEACON study recommendations, the following are recommended for the county to explore and adopt as appropriate:

1. Living wage ordinances
2. Enforcement of fair housing and lending laws
3. Housing trust funds
4. Community land trusts
5. Down payment and other housing cost assistance
6. Increase eligibility for housing assistance
7. Credit assistance
8. Mortgage payment assistance for the ill and unemployed
9. Nonprofit housing development corporations
10. Public housing and Section 8 subsidies
11. Increased use of federal and state housing programs, for example, Community Development Block Grants, Affordable Housing Trust Fund, HOME investment partnership programs
12. Land use regulation incentives, for example, inclusionary zoning and rehabilitation incentives
13. Public transportation

The report suggested a housing task force⁵⁶ be formed to study these alternatives and make recommendations to address affordability and availability.

Mobile Homes

Mobile homes provide affordable starter and long-term housing for many households. However, early construction methods/materials and siting gave this

⁵² Diriker, p. 22.

⁵³ Cullinan, Kathleen, "Home Prices Still on the Rise", *The Baltimore Sun*, (taken from US Office of Housing Enterprise Oversight), Baltimore, Maryland, December 5, 2004, p. 1L.

⁵⁴ Maryland Department of Housing and Community Development, *Blueprint Maryland*, October/November 2004, p. 7.

⁵⁵ Ibid.

⁵⁶ The Housing Task Force began meeting in the spring of 2005.

option a poor reputation. Upgraded styles, materials and rooflines have done much to improve mobile homes' aesthetics and status. It is recommended that additional mobile home parks be provided for with appropriate site design standards (landscaping and setbacks) in order to expand the availability of this important housing option.

Campgrounds

Campgrounds provide temporary recreational housing and they have been part of the county's resort tradition. The county has enacted a variety of site, design, and occupancy standards for campgrounds and should continue to monitor their development, operation, and use for compliance. While suitable for temporary accommodations, these uses should not be permitted to evolve into permanent housing due to health and safety issues.

Seasonal Employee Housing

The resort industry must rely on non-resident seasonal employees to staff the resort's attractions and restaurants. With Ocean City's accelerating rehabilitation of older properties, the supply of lower cost housing options is dwindling. This has created a shortage of affordable housing for the summer labor force. Studies of this problem indicate that solutions are expensive and complex.⁵⁷ Some employers have developed or secured housing for their employees. Other potential methods to expand seasonal employee housing include:

1. Mixed use commercial and seasonal housing
2. Specific employee housing projects
3. Shared use of university dormitories

Housing Assistance

The county's housing assistance programs have focused on rehabilitation of owner-occupied single-family homes. This effort began in 1987 and has renovated 120 homes. These homes have been owner-occupied and have been brought up to Department of Housing and Urban Development standards. This work is targeted to the most severe situations. The renovation programs should be continued to address the remaining substandard homes. Housing assistance affordability programs are likely to be needed. The housing task force should study this issue and provide appropriate recommendations. The use of inclusionary zoning should be explored.

⁵⁷ Ocean City, MD, Seasonal Worker Housing.

Chapter Six Public Infrastructure

Introduction

Communities depend on public infrastructure for their continuation and growth. In some cases, infrastructure is critical to life and safety, and in others, it provides cultural, educational, and other necessities for society's progress.

As the county has grown, infrastructure demands have increased. This has been especially true in the rapidly growing northeast quadrant. Mid and south county have grown more modestly and infrastructure demand has followed suit. This plan continues the emphasis on north county growth, therefore the greatest need for infrastructure is anticipated there. However, need in the remainder of the county is expected to grow, so improvements should be programmed accordingly.

In the past, developers have by policy provided virtually all on-site infrastructure related to new development. This policy shall continue with the recommendation that standards for adequate public facilities be adopted if appropriate. Infrastructure costs should be borne by those who directly benefit; developers will remain responsible for the services required by new development. Public provision of infrastructure should be considered in special circumstances where existing development and general growth create facility demand.

This chapter provides an infrastructure goal, objectives, and recommendations and discusses each major infrastructure system.

Goal, Objectives, and Recommendations

Goal

Consistent with the development philosophy, facilities and services necessary for the health, safety, and general welfare shall be cost effectively provided.



Objectives

To achieve this goal, the following objectives are adopted:

General

1. Meet existing public facility and service needs as a first priority. Health and safety shall take precedence
2. Permit development to occur only as rapidly as services can be provided
3. Ensure adequate public facilities are available to new development
4. Require new development to "pay its way" by providing adequate public facilities to meet the infrastructure demand it creates
5. Explore the applicability of an adequate public facilities ordinance, impact fees, and an excise tax then implement as appropriate
6. Develop public facilities so they are:

- a. Cost effective to build and operate
 - b. Multi-purpose to the extent feasible
 - c. Minimally disruptive to the environment during construction and operation, i.e., use “green building” techniques
 - d. Energy efficient
 - e. Located where planned growth is to occur
6. Provide appropriate information, speakers and demonstration projects to inform county citizens of the relevant issues

Parks and Recreation

- 1. Establish local standards for the creation, accessibility, and adequacy of public recreation facilities
- 2. Maintain and enhance the existing countywide recreation program
- 3. Develop programs and facilities able to meet diverse community recreation needs regardless of age, gender, income, and abilities
- 4. Continue public participation in recreation program creation, operation, and maintenance
- 5. Enhance public access to the ocean, bays, and beaches
- 6. Plan for region-wide trail and bikeway system to link existing and new communities with commercial, institutional, cultural, and recreational activity centers (link county, state, and municipal parks and natural areas)
- 7. Integrate walking trails and bikeways into new developments’ greenway system
- 8. Plan new and renovated public facilities for multiple uses
- 9. Continue to require new development to provide for its internal passive and active recreation needs

- 10. Require developers to pay for or provide the public recreation facilities necessary to support their development
- 11. Coordinate the county’s recreation program with the federal, state, and municipal parks and programs
- 12. Update and implement the land preservation and recreation plan every six years



Education

- 1. Conduct long-term planning for educational facilities
- 2. Locate educational facilities in or near communities
- 3. Set standards⁵⁸ for teacher-student ratios that promote student achievement
- 4. Balance vocational and technical programs for emerging and traditional trades to match labor capabilities with employment opportunities
- 5. Foster opportunities for life-long learning
- 6. Continue to upgrade the existing library system to keep pace with changes in information technology and demand for library services
- 7. Seek a more balanced funding ratio per student from the state

⁵⁸ Worcester County Board of Education responsibility.

8. Promote understanding of the county's heritage resources as well as its historic and growing cultural diversity



Public Safety

1. Maintain an adequate level of law enforcement, fire, and other emergency services
2. Support law enforcement, fire, and other emergency services with essential equipment and training
3. Coordinate with federal and state homeland security efforts
4. Plan for the expansion of public safety services and facilities, for example, substations, to coincide with population growth and identified needs
5. Focus efforts on crime prevention and support "neighborhood watch" programs
6. Undertake a long-term safety and emergency services plan
7. Maintain an emergency service capability able to plan for, to respond to, and to provide an adequate disaster response
8. Prepare and implement an "all hazards" mitigation plan to inventory and reduce exposure to damage from natural and man-made hazards

9. Continue to concentrate population growth to reduce the need for dispersed law enforcement and emergency response facilities
10. Improve public awareness of their appropriate actions during emergencies
11. Discourage development in high hazard areas
12. Improve as required, site and building design standards to reduce damage from natural and man-made hazards
13. Develop standards to respond to sea level rise

Health Care

1. Provide for a proactive community care system complete with wellness programs and preventive care for health and social problems
2. Support and enhance the existing health care system and its accessibility to be able to meet current and future needs
3. Coordinate with and support the Atlantic General Hospital to provide an expanded range of health services
4. Support a system of medical care centers and emergency transport to meet residents' and visitors' immediate medical needs
5. Provide appropriate care of the elderly, disabled, and developmentally challenged
6. Provide for developmentally disabled work force training
7. Continue to encourage medical professionals to locate in the county
8. Encourage the private sector to increase the medical care offering in the county

Solid Waste

1. Provide for the safe and environmentally sound disposal of

solid and hazardous waste generated in Worcester County

2. Promote conservation of resources through source reduction, reuse, and recycling
3. Keep curb-side trash collection the responsibility of property owners
4. Maintain, update, and implement the county's solid waste plan
5. Implement technologies and techniques to extend the life of the Central Landfill
6. Enforce, review, and update solid waste management regulations on an on-going basis
7. Institute mandatory recycling
8. Recycle 40 percent of the county's solid waste

Water and Sewer

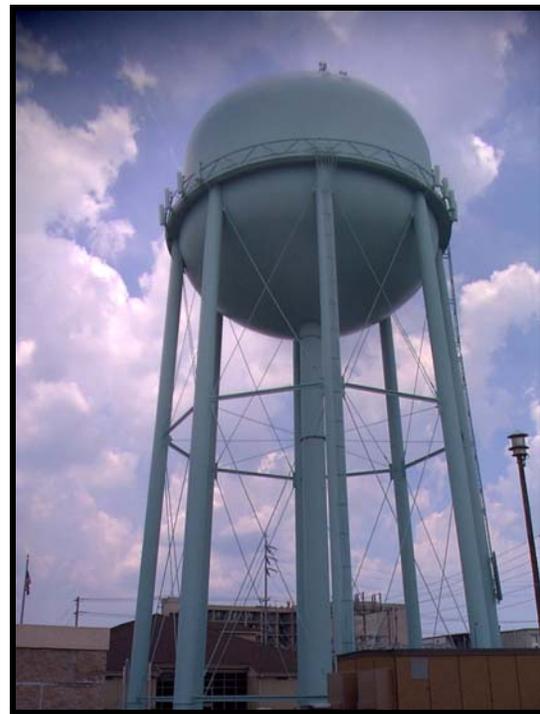
1. Provide for the safe and environmentally sound water supply and disposal of wastewater generated in Worcester County
2. Update the water and sewer plan regularly per state requirements
3. Plan for the efficient operation, maintenance, and upgrades to existing sanitary⁵⁹ systems as appropriate
4. Require new community scale development (100 or more units⁶⁰) to be served by public sanitary services
5. Require developers to provide sanitary services to new development
6. Permit large scale shared facilities only if supervised by or operated by Worcester County
7. Adopt an area of special state concern for on-site septic systems in the Coastal Bays watershed with

⁵⁹ Sanitary services refer to water and sewer services.

⁶⁰ This figure is a guideline and relates to a general standard for sanitary service economic viability. Particular circumstance dictates the need for flexibility with this guideline.

provisions for monitoring their maintenance and performance

8. Explore the creation of areas of special state concern for on-site septic systems in the remainder of the county
9. Septic systems should provide the maximum practicable nutrient reduction
10. Use land application of treated wastewater as the preferred waste water disposal method where appropriate
11. Existing ocean outfalls should be considered for wastewater disposal



Other Utilities

1. Work with the private sector to ensure a dependable and adequate supply of electric power and propane
2. Encourage the development of a natural gas supply to the county
3. Provide for broadband wireless coverage throughout the county
4. Explore the creation of stormwater management utilities

5. Encourage alternative sources of power

Recommendations

Sanitary Services

Sewer and potable water supply comprise the sanitary services. Sewer service controls the scale and location of development and therefore is one of the county's most powerful growth management tools. Potable water, while commonly available, also requires stewardship and is an important development factor.

Sewer Service

The majority of future growth will be guided by the capacity and location of sewer service. This combined with the state's "Smart Growth" policies will focus development close to existing population centers. For these reasons and general health, safety, and welfare considerations, the following recommendations are established:

1. Public health and environmental threats must be addressed as a first priority.
2. Public water and sewer service should be planned for proposed growth areas.
3. New sewer service should not be extended to areas where high density growth is not desired.
4. New wastewater discharges should use land application or existing ocean outfalls when most appropriate.
5. Existing discharges to surface waters should be converted to land application or ocean outfalls as feasible, e.g., wastewater discharge from Assateague State Park into the Sinepuxent Bay.
6. Sewer systems should be sized to serve their service areas' planned for land uses.
7. Proposals for new development will be reviewed for the adequacy of sewer, water, and other infrastructure.
8. Approvals for new development may be deferred, phased in, or conditioned upon the availability of adequate public facilities.
9. Land use controls should be used to limit development in non-sewered areas and provide for planned uses in designated growth areas⁶¹.
10. All sewered areas shall be incorporated into a sanitary district, which will be responsible for all operating, maintenance, and capital costs associated with serving the district. Additions to existing districts shall be responsible for all costs associated with such extensions.
11. For new systems, land application of treated effluent is the preferred disposal method.
12. The county should update and maintain its water and sewer plan such that it provides effective policies addressing facility needs for planned growth.
13. County sanitary service policy should coordinate with municipal growth and service plans to develop a unified approach to countywide growth and facilities.
14. Alternative treatment systems should be considered and used where appropriate.
15. Acquisition of rights to suitable land treatment sites should begin in the short-term.

⁶¹ Growth areas are anticipated to have public sanitary services.

16. On-site septic maintenance should be monitored.
17. Nutrient reduction technologies should be applied to on-site septic systems.
18. A county septage disposal system should be studied and pursued if appropriate.
19. Snow Hill and Pocomoke City's wastewater treatment plants discharge to the Pocomoke River. Land discharge should be explored for feasibility and planned for as appropriate.

Nearly two-thirds of the county's soils are classified as hydric and are largely unsuitable for on-site waste disposal systems. Development with on-site septic on suitable sites generally requires two acre lots. To use such systems for a substantial amount of future growth would consume unacceptable amounts of land, causing sprawl and damage to the county's rural and coastal character. At this time, about 8,400 on-site septic systems exist in the county.

The unprecedented growth in home prices has made public sanitary service provision by developers more financially feasible and it is expected that most future development will rely on such service.

Water Service

The second component of sanitary services is potable water supply. Ground water provides all potable water in Worcester County. Recent studies reveal that ground water volume is more than adequate for foreseeable demands. However, quality and salt intrusion pose threats to the drinking water supply. Federal and state policies address drinking water quality, but local protection is also necessary. While

supply appears adequate, conservation measures are important.

Potable water aquifer recharge areas are located in Wicomico and Dorchester Counties for the deeper aquifers and are in the immediate area of the shallow aquifer (Pleistocene).

Source water protection measures should be adopted.

Land use controls should focus most development in easily serviceable communities and prevent the dispersal of low-density development into rural areas. Such controls should also be used to protect aquifer recharge areas. This will facilitate economically efficient public services, preserve the county's rural character and protect health and safety.

Past practice has required all public sanitary facilities be owned and operated by the county or the municipalities. This resulted from a mixed record of private ownership in the past. Therefore, to protect public health, safety, and environmental quality, the policy of public ownership should continue.

Parks and Recreation

Recreation plays several important roles. In a resort area, it is a major economic sector. From a community perspective, it creates opportunities for broader social interaction and is an important factor in reducing youth crime. Due to resort and community demand, county recreational offerings have broadened over time and should continue to do so.

The county is in the process of revising its land preservation and recreation plan. This plan identifies and sets priorities for acquisition of public parks and open space for recreation and conservation purposes. The draft plan notes that

Worcester County does not meet the state's minimum standards for park acreage. The state recommends that counties acquire 30 acres of local recreation acreage per 1,000 residents, 15 of which should be owned locally. Currently 160 acres of active recreation land is needed to meet this standard. The Plan notes that there is a need for additional public recreational land in the northern county where population will increase.



Active and passive recreation facilities are planned

The currently adopted plan contains the following observations and policies:

1. The county has a dispersed population, which makes a countywide response to neighborhood recreation needs difficult.
2. The county's natural areas could support more boating, fishing, hiking, and similar outdoor activities.
3. Additional emphasis on eco-tourism and heritage-based recreation could be an important economic stimulus.
4. Municipalities and other population centers could take a larger role to meet local recreation needs.
5. Park master plans should be prepared.⁶²

⁶² Worcester County Commissioners, *The Worcester County Land Preservation and*

The Recreation and Land Preservation Plan as currently adopted and as updated from time to time is incorporated into this comprehensive plan by this reference⁶³.

Additional long term unmet needs include:

- West Ocean City library
- Bike/hike trails, rails to trails
- Adult oriented activities
- Kayak/canoe launch facilities
- Parks/greenways

Access to ocean beaches and the bays is vital to the resort industry and the local quality of life. Access should be protected and expanded as the opportunity arises. Development regulations should include standards for community access to the bays. Boat launch facilities should be maintained; funding should be sought for reducing stormwater runoff, improved aesthetics, and naturalizing these facilities.

The county should continue to rely on private enterprise to provide camping facilities.

Education

Worcester County schools have been recognized for their achievement by being designated as "Blue Ribbon" schools. The county school system has established class size and student-to-teacher ratios above state standards. Class size standards range from 18 (K-5) up to 25 (9-12) with student/teacher ratios of 1:18 and 1:25 respectively.

Recreation Plan, Snow Hill, Maryland, 2000, p. 87.

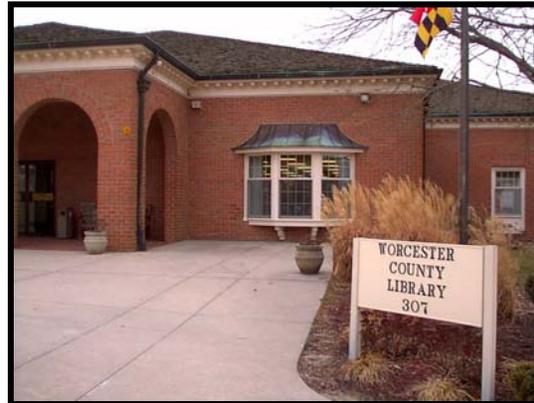
⁶³ The current plan, *The Worcester County Land Preservation and Recreation Plan* was adopted in 2000. This plan is in the process of being updated, which should be completed by year-end of 2005.

The school system's mission is to facilitate the students' physical, intellectual, emotional, and social growth of its students. The objective is to prepare students for post secondary education or the world of work. School facility siting standards include:

1. Conform to county and state comprehensive plan and smart growth policies
2. Locate centrally to their service area to reduce transportation requirements
3. Consider future redistricting requirements
4. Locate adjacent to other schools, recreation/park and communities to provide for shared use of facilities
5. Locate away from employment centers, industrial facilities, and commercial areas
6. Seek uniform terrain to reduce site preparation costs
7. Select sites with public water and sewer service if possible
8. Consider the adequacy of transportation facilities
9. Provide sidewalk access to the facility

Future enrollments will parallel population growth in the North County. The Central County schools anticipate stable enrollments and the South County schools are anticipating revitalization of the surrounding area with moderate growth in enrollment. Total enrollment is projected by the state to decline slightly through 2013. This projection should be monitored as school enrollment has grown from the late

1980's until recently when it has stabilized.⁶⁴



Public Libraries

Use of library services is increasing. Future needs include:

1. Relocating and expanding the Ocean City branch
2. Creation of a West Ocean City branch
3. Replace the Berlin Library with larger facility
4. Continue expansion of internet and traditional services

Public Safety

Fire Protection

Ten volunteer fire companies now adequately serve the county. The companies will need to expand to keep pace with planned population and development growth. The growth in the West Ocean City area has been substantial. A new fire district for this area may be needed. Therefore, a fire district study for West Ocean City should be undertaken.

Meeting the need for volunteers has been an on-going issue for some companies. The county's volunteer companies must

⁶⁴ Worcester Public Schools, 2004-2005 Educational Facilities Master Plan, Newark, Maryland, p.35.

provide service to summer populations over 400,000 with volunteers drawn from the year-round population. This creates an inherent potential shortage of labor.

Subdivision regulations require the installation of adequate fire protection. The study currently underway of existing water systems should include methods to improve fire protection capacities of existing and future systems.

Police Protection

The municipalities and Ocean Pines provide their own police protection; the remainder of the county is served by the Sheriff's Department. State police patrol and serve the entire county. This service will need to expand to keep pace with planned growth.

Corrections

The county operates a modern jail facility in Snow Hill. The Worcester County Jail holds the distinction of receiving seven Certificates for 100 Percent Compliance for Adult Correctional Facilities from the Maryland Commission on Correctional Standards.⁶⁵

The jail has a capacity of 264 inmates. Originally constructed to house 98 inmates, the facility has expanded twice and a third with an additional 168 beds is planned. These changes are designed to improve security for Homeland Security purposes. Services and facilities will need to keep pace with population growth.

⁶⁵ Shockley, Buck, Warden Worcester County Jail, Personal Correspondence, September 9, 2005.

Chapter Seven: Transportation

The Chesapeake Bay bridges swept away isolation, long a major factor in Worcester County's history. The Internet and the global economy have further diminished this isolation. While the last two will play a role, the road system will be the likely future mobility constraint. Therefore, protection and improvement of the road system's capacity and safety are this chapter's focus.

The county's transportation system, vital to our economy, has land, sea, and air components. On land, US 50, the county's main east/west link and US 113/13, the main north/south link, join Worcester County to the interstate road network. State and county roads provide local and regional connections. The county's bus system has recently been consolidated into a regional system with Wicomico and Somerset counties. Water and air transport play a secondary role.

Physical constraints, in the form of the Coastal Bays, their tributaries, and extensive wetlands limit the roadway system's expansion in the county's northeast section. Stewardship of highway and arterial capacity will assure continued general mobility and access to resort areas. Effective land use planning, access controls, service road development, mass transit, and other transportation system management (TSM) techniques will help improve traffic flow.

Recreational boating dominates water travel. The West Ocean City Harbor and its commercial and nearby charter fishing fleets account for most commercial boat traffic. Water taxis provide limited service in the Ocean City area.

Air travel is served by two local airports. General aviation uses the Ocean City Airport and a regional airport, the Salisbury-Ocean City-Wicomico Regional Airport, provides limited service to two major airports.



Traffic has steadily increased

With the county's reliance on ground transport, this chapter primarily focuses on the road system. To provide a framework for the future, a set of goals, objectives and recommendations is provided. The discussion begins with the description of the existing transportation systems and anticipated needs. This is followed by the goal, objectives and recommendations.

Background

Worcester's roadways experience morning and evening commuter peaks, however, they are dwarfed by summer resort traffic. Summer traffic peaks on Friday evening, Saturday, and Sunday afternoon. Weekend travel clusters on Friday and Sunday evenings with longer-term check-ins/outs peaking on Saturday. Resort traffic causes the most noticeable congestion on US 50, US 113, US 13, MD 528, MD 589, MD 611, and MD 90.

Of special note is the fact that the MD 589 corridor has experienced significant development and has reached an unsatisfactory level-of-service. During the period from 1990 to 2003, traffic increased by 112 percent⁶⁶ and congestion has become a daily occurrence regardless of season. For this reason, MD 589 is considered impacted from a traffic standpoint. This implies that land use should not intensify in this area. Infill development of existing platted lots should be the extent of new development. This policy shall remain until road capacity is suitably improved.



Boat traffic is dominated by recreational craft

Average daily traffic on MD 611 has increased 163 percent since 1990. MD 611 traffic volume and level of service should be monitored to avoid affecting this roadway. Development along the MD 611 corridor should be kept to infill for the planning period.

Worcester County has a five-tier road system with federal, state, county, municipalities and private bodies having ownership and/or maintenance responsibility. The county in 2004 maintained 577 miles of county roads. County road improvements and

maintenance are funded through the county's share of the state's gas tax.

The county's rural road system continues to have an excellent service record. Local car and truck traffic share this system with farm machinery. On-going maintenance will remain the primary need for these roads. Due to their configuration, rural roads within this plan's growth areas will require improvements to handle the expected additional traffic.

As noted above, access to Worcester County has greatly improved and this progress continues. The state recently extended its US 50 capacity improvements from the Western Shore to Ocean City with the opening of the Salisbury bypass. Bypasses at Cambridge and Easton would complete the upgrade to US 50. These projects have uncertain prospects, but nonetheless they would be desirable.

MD 90 spurs off US 50 seven miles from Ocean City and ends its limited access span at 62nd Street in Ocean City. Summer peaks produce near gridlock conditions on this route.

The county's highest transportation project priority, complete dualization of US 113, is moving forward. The last segments of US 113-dualization project are being designed and construction funding appears probable. Delaware is considering improvements to the US 113 corridor; limited access status is being considered. Without such improvements, this roadway with its planned commercialization within Delaware could impede summer resort traffic significantly.

Access from the north will be improved with upgrades to MD 404. This two-lane rural highway provides an alternate to

⁶⁶ State Highway Administration Website, Average Daily Traffic Statistics, Annapolis, Maryland, 2004.

US 50 to the Delaware and Maryland resorts. Federal planning funds have been secured and Maryland has placed dualization planning in its Transportation Management Plan. Delaware will need to improve its portion of this road to complete the upgrade.

Regional access from the south comes from Virginia via US 13. Again, existing and planned commercial use on this road has and will reduce its capacity. Traffic signal frequency has increased and the level of service declined. Regional planning efforts have been initiated to explore this issue further with Virginia. Within Worcester County, to prevent unnecessary capacity impacts to US 13, it will be important to locate commercial development and to provide adequate service roads and access controls.

MD 12, the major east-west link for the southern county, begins in Salisbury, passes through Snow Hill and joins Virginia Route 679 at the state line. Traffic volumes are currently within the acceptable range and should be monitored as conditions change.

Mass Transit

Two public and one private bus (Trailways) systems provide mass transit. Ocean City provides convenient bus service within town limits during the summer season. Shuttle service to the West Ocean City "Park and Ride" links the town's system to the regional bus system. Ocean City's system has dramatically reduced traffic volumes. Average daily traffic has declined by 28 percent from 1990 to 2003.

"Worcester Ride", the county's bus system, was consolidated into the Tri-County regional bus system in 2004. This improved efficiency and service by

reducing duplicate facilities and services. The regional bus system links workers throughout the Tri-County region with employment centers. Annual Ridership has grown from about 25,000 in 1996-97 to nearly 170,000 in 2003-04, a six-fold increase.

Air Travel

Commercial air traffic is split between the Salisbury-Ocean City-Wicomico Regional Airport and the Ocean City Airport. The former has provided service to Baltimore, Philadelphia, and Charlotte; but is now seeking a carrier to Baltimore.

The Ocean City Airport is scheduled to begin daily flights to Baltimore-Washington International Airport (BWI). This airport also houses sky tour, parachute, and banner (advertising) uses. These operations along with airport service and product sales provide 27 jobs and \$1,983,000 in annual revenue.⁶⁷

Transportation and Land Use

Transportation infrastructure relates directly to the nature and pattern of land use. Development intensity affects the number of vehicle trips while its pattern influences trip length. Reducing the number and length of trips will decrease both air pollution and congestion. This can be achieved through mixed use development and locating work and living areas close to one another. Mixed-use development places commercial uses providing daily needs within walking/biking distance and employment close to home.

Planned growth areas will each need detailed study for transportation

⁶⁷ Jesse Houston; Planning Director; Ocean City, Maryland; Personal Communication, August 15, 2005.

improvements. While these areas are close to major transportation links, it is anticipated upgrades to local roads will be needed to match the growth-generated traffic demand. Existing local roads were developed to suit rural demand levels and they are generally uniform in capacity and construction. Urbanized areas require a hierarchy of local, collector and arterial streets. Therefore, the growth area transportation planning will need to create this more complex system. Further, it should include plans for bike/pedestrian/mass transit facilities. Such improvements will be the developers' financial responsibility. Implementation will need an adequate public facilities ordinance (APFO) and impact fees to finance these facilities.

Commercial development will have a significant impact on future congestion levels. Commercial uses generate significant traffic, so planning for the proper amount, location and design will be critical to maintain road capacity. The current amount and location of commercially zoned land pose problems for the road system, particularly for US 50. Commercialization of US 113 beyond its current zoning would also pose significant potential problems.



A variety of transportation modes should be accommodated

Commercial zoning on US 50 stretches from the Harry Kelly Bridge to Berlin. The Maryland Department of Transportation (MDOT) has indicated the existing commercial development has degraded existing levels of service to “D” and below in the summer season. US 50 is a critical link to the resorts and therefore maintaining its capacity is a necessary condition for the county’s economic future. For this reason, this road has designated as “impacted” and commercial zoning along it should be reduced. Use of transfer of development rights should be investigated and down zoning should be considered for the US 50 corridor.

Continuation of the county’s concentrated development pattern and clustering growth around existing communities will facilitate the use of mass transit. As evidenced by the dramatic traffic volume decline in Ocean City (see Table 7-1), mass transit will be a major component in future traffic management for the county’s northeast quadrant.

Levels of Service

Levels of service (LOS) designations gauge congestion levels, driver satisfaction, and safety impacts of varying levels of traffic. The transportation recommendations are based on maintaining an acceptable level of service. This system identifies six traffic condition categories, which are summarized below:

LOS A—Free flowing traffic where users are virtually unaffected by other vehicles. Typically, this condition results during low volume periods and permits high-speed travel with little or no delay. Maneuverability is nearly unrestricted.

LOS B—Stable flow but others’ presence is noticeable. This LOS is above average and is used as a design standard for rural highways.

LOS C—Stable flow where individual users begin to be significantly affected by other vehicles in the traffic stream. This LOS is the standard for “average” urban and suburban conditions and is considered generally acceptable for rural roadways.

LOS D—Stable flow with high vehicle density which has a major effect on individual vehicle speed and maneuverability. Speed and maneuverability are severely restricted. Small increases in vehicle numbers cause unacceptable congestion.

LOS E—Operating conditions at or near capacity characterized by unstable flow with minor vehicle volume increase or slight traffic tie-ups (accidents/breakdowns) causing the system to move to LOS F.

LOS F—Forced flow with volumes exceeding capacity, queues form, and excessive congestion results. Gridlock conditions may exist; drivers seek alternative route affecting other roadways.

LOSs are used to assess roadway performance and to define public policy. In urban locations, intersections and traffic signals for the most part constrain capacity. Rural roads are rarely impacted unless affected by accident, flooding, tree fall, or other short-term events. The following volume/capacity/LOS relationships exist:

<u>Volume/Capacity Ratio</u>	<u>Level of Service</u>
.20	A
.40	B
.55	C
.72	D
1.00	E
1.00+	F

Traffic Volume

Arterial highway traffic volume has generally grown over the years. With the anticipated stabilization of summer peak visitation, peak traffic should also stabilize. Year-round population is projected to continue to grow for the planning period, so annual average daily traffic volumes will keep pace with this growth. At some point, a major increase in mass transit use will be necessary to prevent excessive traffic congestion.

Table 7-1 SHA Average Daily Traffic Volumes

<u>Route</u>	<u>1990</u>	<u>2000</u>	<u>2003</u>
12	4,400	4,875	4,575
13	16,156	22,875	19,891
50	22,375	23,875	24,475
90	17,700	12,650	13,525
113	9,500	14,250	16,725
528	31,100	32,650	22,250
589	6,775	13,125	14,350
611	3,400	5,850	8,925

MDot statistics indicate that summer peak traffic volumes are about 50 percent higher than average daily traffic volumes

Access Control

Access controls have been helpful in maintaining roadway capacity by reducing points of conflicting vehicle movements. Current regulations limit the distance between and thereby the numbers of access points. Service roads also reduce the number of access points and increase road capacity. To limit conflicting vehicle movements on major roadways, “interparcel connectors”⁶⁸, service roads and other access controls should be developed as appropriate.



County roads generally have a high level of service

Transportation Goal

The plan’s transportation goal follows:

Worcester County in cooperation with local, state, and federal entities will provide for safe and efficient movement of people and goods by the various transportation modes with an acceptable level of congestion.

⁶⁸ Interparcel connectors are drives or small roads connecting adjacent parcels. They provide an alternative travel route to adjoining property without re-entering and congesting through traffic.

Transportation Policies, Projects and Recommendations

The following policies, projects, and recommendations will implement the Plan’s transportation goal for each of the roadways below. Each roadway’s state highway classification and local designation appear in parenthesis. A brief background is provided for roads not discussed above. Figure 7-1 locates proposals for the north county, and Figure 7-2 locates proposals for the south county.

MD 12 (Two Lane Secondary Highway/Major Collector Highway)

- Conduct scenic and transportation corridor planning
- Monitor traffic conditions and program upgrades if required

US 13 (Multilane Divided Primary Highway/Arterial Highway)

- Conduct scenic and transportation corridor plan
- Plan for service road and other access controls to maintain capacity
- Undertake median and shoulder landscaping

US 50 (Multilane Divided Primary Highway/Arterial Highway)

- Limit development until capacity is no longer impacted
- Reduce the amount of commercial zoning along US 50 to maintain its capacity
- Assess and improve intersection of US 50 and MD 589
- Monitor Golf Course Road and improve as required
- Monitor Keyser Point Road and improve as required
- Continue to assess the Harry Kelly Bridge repair/replacement alternatives

- Continue to implement *US 50 Scenic and Transportation Corridor Plan* and extend plan's applicability to entire parcel
- Complete scenic and transportation corridor planning for remainder of county portion of US 50
- Construct service road between Sea Hawk and Holly Grove Roads
- Work to limit additional traffic signals
- Work with the state to develop and implement median and shoulder landscaping

MD 90 (Multilane and Two Lane Divided Primary Highway/Arterial Highway)

- Separate with guardrail for the roadway's entire length.
- Continue to monitor safety improvements

US 113 (Multilane and Two Lane Divided Primary Highway/Arterial Highway)

- Complete dualization project from Berlin to south of Snow Hill
- Implement access control plan to maintain its status as a limited access roadway
- Complete scenic and transportation corridor planning for remainder of US 113

MD 589 (Two Lane Secondary Highway/Major Collector Highway)

- Limit development in the corridor until capacity increases
- Conduct scenic and transportation corridor planning
- Dualize after the US 113 project is completed
- Continue to deflect US 113 traffic to MD 90 rather than MD 589

- Introduce interparcel connectors and service roads where feasible

MD 611 (Two Lane Secondary Highway/Major Collector Highway)

- Conduct scenic and transportation corridor planning to continue this road's rural and coastal character particularly from MD 376 to Assateague Island.
- Study need for and implement capacity improvements from MD 376 to US 50.
- Provide for interparcel connectors, service roads and other access controls.
- Growth along the mid and southern portion of the corridor should be limited due to the sensitivity of nearby lands and the limited capacity of the area's road system.
- Plan for widening and intersection improvements of the corridor's northern end.

MD 367 Bishopville Road (Two Lane Secondary Highway/Minor Collector Highway)—This road links the northern segment of US 113 to Bishopville and a network of rural roads which link up to the Lower Delaware beaches. It has become a secondary "short-cut" and traffic volumes are increasing. With limited development planned for the area served by Bishopville Road, only maintenance of its current capacity is planned. Improved shoulders should be provided and striping for a bike lane should be added.

MD 610 Whaleyville Road (Two Lane Secondary Highway/Major Collector Highway)—This major collector links US 113 near Bishopville to Whaleyville and US 50. Should plans for a new northern access to Ocean City move forward this road corridor holds some

potential. Otherwise, its current configuration should meet anticipated demand through the planning period.

MD 368 St Martin Neck Road (Two Lane County Road/Minor Collector Highway) This minor collector links MD 90 at its south end to MD 367 Bishopville Road and provides a secondary link from Ocean City to US 113, northeastern Worcester and the Delaware beaches. This roadway's current configuration should be adequate for the planning period.

Keyser Point Road and Golf Course Road (Two Lane Highway/Undesignated) These roads serve northern West Ocean City. Traffic volume has increased to the point that widening and shoulders with striping for bike lanes, and sidewalks should be added. Like all of West Ocean City, drainage improvements are needed. The county road designation should be upgraded to a "minor collector highway."

Sunset Avenue (Two Lane County Road/Undesignated) This road provides property access along its length, which ends in the east at the West Ocean City Harbor and in the west at MD 611. Intersection improvements at MD 611 will be needed.

MD 707 Greys Corner Road (Two Lane Secondary Highway/Undesignated) This road parallels US 50 from Friendship Road to the Riddle Farm community. This road was cul-de-sac'ed at the Riddle Farm and should be reopened through to its natural terminus east of Herring Creek Lane.

MD 707 Old Bridge Road (Two Lane Secondary Highway/ Undesignated) This road links US 50 with MD 611 and the West Ocean City Harbor area.

Acquisition of right-of-way for widening should occur as projects develop. Eventual widening will be required, as this road is becoming a minor bypass through the West Ocean City commercial area. The road should be designated a "minor collector highway."

MD 376 Assateague Road (Two Lane Secondary Highway/Major Collector Highway) This highway joins Berlin and US 113 to the MD 611 corridor. It provides a secondary access when US 50 is over capacity. Development along this corridor should be minimized to protect adjacent sensitive lands and its capacity. Posting MD 376 as a bike route is appropriate.

Harrison Road (Two Lane County Road/Undesignated) This road provides a secondary connection between US 113 and MD 376, Assateague Road. Should development materialize in the southern county, and traffic volumes increase on MD 376, Harrison Road may require shoulder widening and other improvements to handle additional volume. This road travels through the traditional community of Germantown, so if improvements are planned, they should consider the area's character. The road should be designated a "minor collector highway."

Beauchamp Road (Two Lane County Road/Minor Collector Highway) This collector provides primary access to uses along its west side and secondary access to Ocean Pines truck route. Determine options for correcting drainage problems in the vicinity and take corrective action.

MD 374 Libertytown Road (Two Lane Secondary Highway/Minor Collector Highway) This minor collector leaves Berlin to the west as Broad Street, passes through the crossroad community of Libertytown, and ends in Wicomico

County at Powellville. This roadway's current configuration should be adequate for the planning period.

MD 354 Whiton Road (Two Lane Secondary Highway/Minor Collector Highway) This minor collector begins just west of Snow Hill and ends at Willards in Wicomico County. This roadway's current configuration should be adequate for the planning period.

MD 364 Dividing Creek/Nassawango Road (Two Lane Secondary Highway/Minor Collector Highway) This minor collector begins at US 13 west of Pocomoke City and links to MD 354 to the north of Snow Hill. This roadway's current configuration should be adequate for the planning period.

MD 366 Stockton Road (Two Lane Secondary Highway/Minor Collector Highway) This minor collector begins in Pocomoke City, continues east to the village of Stockton, and ends at Chincoteague Bay east of Stockton. This roadway's current configuration should be adequate for the planning period.

MD 756 Old Snow Hill Road (Two Lane Secondary Highway/Unclassified) This road links US 113 with 6th Street in Pocomoke. The intersection with US 13 should be improved to increase its LOS.

General Recommendations--Roadways

1. Acceptable Levels of Service—It is this plan's policy that the minimal acceptable level of service for all roadways be LOS C. Developers shall be responsible for maintaining this standard.
2. Rural Roadways—Institute access controls for rural roads if their LOS drops below B for daily peak traffic.

3. Traffic studies--Developers should provide traffic studies to assess the effect of each major development on the LOS for nearby roadways.
4. Impacted Roads--Roads that regularly have LOS D or below during weekly peaks are considered "impacted." Areas surrounding impacted roads should be planned for minimal development (infill existing lots). Plans and funding for improving such roads should be developed.
5. Impacted Intersections--Upgrade intersections that have fallen below a LOS C, for example, the intersection of US 13 and MD 756 Old Snow Hill Road, intersection of MD 589 and US 50.
6. Regional transportation study—This study should examine existing and projected traffic conditions for the northern half of the county. It should provide recommendations for improving traffic capacity, safety, mass transit and non-vehicle transport. Include a detailed analysis of county roads.
7. Growth Area Transportation Studies--Conduct a transportation study of each growth area and make recommendations for appropriate internal and external improvements.
8. Local funding sources should be explored to improve priority of impacted roadways for state funding or to provide for local

- construction of improvements.
9. Third Access to Ocean City-- Undertake a scoping study to determine potential feasibility for adding a third access point to northern Ocean City. Use of Route 610 for this purpose should be considered.
 10. Municipal Corridor Planning-- Encourage the use of corridor planning techniques for major routes through municipalities.
 11. Berlin Western Collector-- Plan for a collector road west of Berlin linking Evans Road to MD 346.
 12. Park and Ride Facilities-- Develop a second “park and ride” location along US 50.
 13. Road Widening-- Adequate right-of-way should be dedicated for roads anticipated for widening during the development review process.
 14. Community character—New roadway designs and construction should not disrupt the character of existing communities, villages, and towns. Alternative routes and designs should be explored to maintain this important aspect of Worcester County.
 15. Connectivity-- Inter and intra-development connectivity should be designed into new development to improve mobility and to avoid environmental damage. This will be especially important for US 13 south of Pocomoke and US 50 between Berlin and Ocean City.
 16. Residential Streets-- Through traffic should be discouraged through layout and “traffic calming” practices.
 17. Bike and Pedestrian Mobility-- Bike and pedestrian mobility should be given higher priority and designed into new development. A countywide plan should be developed.
 18. Environmental Impact Reduction—Design roads to limit environmental impacts by:
 - Decreasing roadway size to fit their traffic volume
 - Prescribing pavement widths of 18 feet for rural roads and 20 feet for local roads with greater than 400 average daily trips
 - Reducing right-of-way widths to 30 feet for closed section (curb and gutter) roads and 45 feet for open section (grassed swales) roads
 - Using innovative cul-de-sac type designs (hammerheads)
 - Encouraging the use of vegetated open channel drainage
 - Reducing paved parking requirements selectively
 - Providing mass transit stops and sidewalks in urban areas.
 - Allowing shared parking agreements
 - Integrating stormwater management in parking area islands.

19. Dependency on Automobiles—County policy and regulations should provide for the development of a bike/trail system and increased use of mass transit to reduce dependency on automobiles.
20. Fuel-efficient and alternative fuel vehicles--Use of fuel-efficient and alternative fuel vehicles should be encouraged; the county should purchase appropriate vehicles and fuels to lead this change.
21. Annual Transportation Plan—A list of short-range and long-range highway capital improvements for county and state roads should be generated and submitted annually to the county Commissioners.
22. Parcel Access Plan--This plan should provide a specific parcel access plan for large parcels and interparcel connections for smaller parcels for key roadways. This list should be provided to and reviewed with the State Highway Administration
23. Roadway Beautification—Travelers see the county most of the time from a vehicle, so road beautification efforts will yield significant results and should be planned and implemented
24. Sign maintenance plan—The county should have a regular corridor⁶⁹ plan sign

maintenance program to replace worn signs.

General Recommendations--Rail Service

Two rail lines serve Worcester County. The Maryland and Delaware Line connects Snow Hill, Newark, and Berlin to Delaware and points beyond. The Conrail/Eastern Shore Railroad connects Pocomoke to Salisbury and points north via Princess Anne. Rail freight mainly consists of grain imports and stone for asphalt, concrete, and riprap. The county should work to keep these lines active as they play a key role in meeting bulk-hauling needs.

General Recommendations--Air Transport

Ocean City Airport will remain a general aviation center. Major future improvements include:

- Runway extension
- Hangar facilities
- Navigation aide improvements

The Salisbury-Ocean City-Wicomico County airport will continue to provide regional connections for commercial flights. Currently flights are available to Philadelphia and Charlotte. Additional links would be desirable, especially to Baltimore-Washington International Airport.

General Recommendations--Water Transport

Worcester County through zoning has provided protection and encouragement for the commercial operations at the West Ocean City Harbor. The commercial component is critical to keep federal maintenance of the inlet. The inlet is a key component for both the commercial and recreational fishing industry. Commercial marine zoning

⁶⁹ Special signs for scenic roadways are especially important.

should be continued to protect the harbor's commercial status.

Marinas, docks, and shoreline stabilization have received increasing attention due to their effect on the shoreline and near-shore waters. The land and water boundary provides specialized habitat for the Coastal Bays' fish and wildlife. For this reason, a marina, dock, and shoreline stabilization policy should be developed to provide guidance to the Shoreline Commission and county staff when reviewing water-oriented facilities. The objective should be to provide water access, yet provide protection for these special habitats. Community docking facilities should be pursued to the maximum extent feasible to minimize shoreline construction.

A limit on the length of docks and piers is currently under study. These structures

fragment wetlands, shade vegetation, and provide a predator pathway deep into the marsh. Care should be taken to limit these impacts.

The Navigation and Dredging Advisory Group of the Maryland Coastal Bays Program (MCBP) is preparing a master plan for dredging and navigation. The plan identifies issues with navigation and channel maintenance/dredging. Beneficial use of dredge material and employment of best management practices are encouraged. The draft plan notes that the Corps of Engineers maintains the bays' federal channels, and the state has limited funding for non-federal channel maintenance projects.

Maintenance of the Pocomoke River channel should continue and it should be monitored for design changes to accommodate cargo traffic needs.

Chapter Eight: Implementation

For this plan to be successful, it must be implemented. The plan itself is not an implementation document but rather lays out the programs, projects, and results that are desired. This chapter identifies the existing and potential tools to accomplish the plan.



Citizens and government will need to work together to implement the plan

There are a number of tools, which have been used, and a number of innovative tools worth considering. Tools, which are often regulatory, ultimately rely heavily on education and public cooperation. Without basic agreement on the role and direction of these efforts, their implementation would not be possible. Below is a listing of Worcester County's current implementation tools:

- Zoning ordinance
- Subdivision regulations
- Forestry conservation regulations
- Critical area program
- Sediment and erosion control
- Stormwater management regulations
- Building and housing codes
- Floodplain regulations
- Capital Improvement Plan
- Sewer and water planning

- Watershed planning
- Nutrient management planning
- Total maximum daily loads (TMDLs)
- Recreation and land preservation plan

As in preceding chapters the goal, objectives and recommendations for implementation are discussed in this chapter.

Goal

Sufficient resources and staffing should be provided to implement this plan's provisions. Implementation actions must:

pursue legitimate objectives, have reasonable and efficient relation to those objectives, be nonrepressive, not unnecessarily take property (without proper compensation), respect interests of other governments and residents in the region, apply equally and fairly to parties in similar circumstances, and avoid discriminating unfairly.⁷⁰

To achieve this goal, citizens should be informed and be involved in major program and policy development. It is important that the provisions of the implementation tools be provided in a clear and concise manner. Replacement of jargon, and "legal writing" with plain English and sufficient images will greatly aid in clarity.

Richard Wydick in *Plain English for Lawyers* sums up the "legal writing"

⁷⁰ Adapted from: Chapin, et al, *Urban Land Use Planning*, p. 410.

issue when he says, “We lawyers do not write plain English. We use eight words to say what could be said in two. We use arcane phrases to express commonplace ideas. Seeking to be precise, we become redundant. Seeking to be cautious, we become verbose. Our sentences twist on, phrase within clause within clause, glazing the eyes and numbing the minds of our readers. The result is a writing style that has, according to one critic, four outstanding characteristics. It is (1) wordy, (2) unclear, (3) pompous, and (4) dull.”

Regular communication and coordination should be continued with non-governmental and governmental organizations at all levels.



Objectives

1. Actively pursue state and federal grants to secure Worcester County’s fair share of these revenue sources and to supplement local revenue.
2. Adopt the appropriate means to ensure development provides adequate facilities and offsets public costs associated with the impact of development.
3. Continue to use the capital improvement plan to program major public investments and their funding.
4. Improve ongoing citizen participation and education to foster citizen understanding and input into county

- governance. Use the Internet extensively to facilitate outreach.
5. Continue to participate in the Tri-County Council (Worcester, Wicomico, and Somerset counties). The council provides an effective forum to undertake regional issues and take joint action.
 6. Encourage the formation of an interstate forum for communication among the Eastern Shore coastal counties.
 7. County codes, ordinances, and policies should be clear and concisely communicated.

Recommendations

The Planning Commission is tasked with the preliminary development of and subsequent monitoring of the plan’s implementation. The Commission should use the following tools to implement the Plan:

1. Develop public support through education and an understanding of the issues
2. Use existing regulatory and other tools currently in use to implement the plan’s goals and objectives
3. Improve energy performance of new development through site design and construction standards
4. Implement the use of conservation subdivision and site planning⁷¹ to improve developments’ sustainability and reduce environmental and aesthetic impacts

⁷¹ Conservation design designates primary conservation areas first and then locates building sites, roads and then lot lines. It provides for clustering and protection of valuable natural resources without sacrificing permitted density.

5. Implement impact fees to address new development costs for community facilities and services
6. Explore the use of form-based⁷² zoning to create development that is compatible with and an asset to the community in which it locates
7. Develop and implement an urban design standards and review program
8. Use other plans such as the comprehensive water and sewer plan, urban design plan, watershed plans, transportation plans, scenic corridor plans, landscaping and lighting plans and other special purpose plans to implement this plan
9. Continue inter-jurisdictional cooperation with municipalities, the state, and federal governments
10. Require all subdivision and site plans to be tied to state plane coordinates to allow direct insertion into the county's geographic information system (GIS)
11. Consider nutrient budgets and trading as part of the development review process to implement the TMDLs
12. Participate in and support the Tri-County Council and other regional planning organizations as appropriate
13. Work with an effective local land trust to secure donated and purchase conservation easements
14. Write implementation ordinances in plain English for clarity and ease of understanding
15. Seek outside funding and resources for implementing the plan
16. Work with non-governmental organizations to aid in the implementation of the plan's goals and objectives.
17. Continue the Wetlands Planning Group coordination among all wetland regulatory bodies
18. Establish engineering standards for "soft" shoreline stabilization techniques to guide review by the Shoreline Commission
19. Work with directly with adjacent counties on common issues and concerns
20. Review the plan's goals, objectives, and general progress periodically. An annual review and brief summary of progress would be useful for setting yearly goals. The state's six-year review period requirement should be used as a major assessment and determination if a new direction is warranted.

Below for each major implementation tool specific recommendations are provided.

Growth areas shall:

1. Be developed consistent with this plan's goals, objectives, and recommendations.
2. Be considered potential development locations and the growth area designation shall not in and of itself require the growth area be immediately rezoned for growth. Rather the growth area designation is a precondition for growth-oriented zoning akin to the rezoning requirements of unplanned changes to the

⁷² This approach to zoning regulates building form and site standards and encourages more of a mix of uses than traditional zoning.

neighborhood character or a zoning mistake.

<u>Growth Area</u>	<u>Acres</u>	<u>RUT</u>	Potential Additional <u>Population</u>
Berlin	1,326.1	2,910	6,781
Pocomoke	495.1	1,606	3,743
Showell	359.6	1,000	2,333
Snow Hill	<u>680.3</u>	<u>2,207</u>	<u>5,143</u>
Totals	2,861.1	7,723	18,000

3. Be initially zoned to encourage the use of planned unit development (PUD) techniques.
 4. Be limited to the residential unit target (RUT) for each growth area (see Table 8-1 for residential unit targets) for the planning period.
 5. Be zoned to require the use transferred development rights if such a program is implemented.
 6. Be zoned to implement a minimum density should one be developed.
 7. Be developed consistent with this plan’s goals, objectives, and recommendations.
 8. Use transferred development rights to achieve project densities above three dwelling units per acre.
 9. Achieve minimum project average densities of at least 3.5 dwellings per acre.
1. Be annexed into towns unless the town declines to annex the property under terms that are acceptable to the County Commissioners, then the growth area may be developed without annexation
 2. Be subject to interjurisdictional development and annexation agreements⁷⁴ to ensure that:
 - a. Water, sewer, and other appropriate public services are available and provided to the site
 - b. All impact fees, excise taxes, adequate public facilities fees and other financial obligations including those due to the county shall be the developers’ responsibility
 - c. Be integrated into the urban design and street network of the town
 - d. Be developed using conservation subdivision techniques and preserve the integrity of the green infrastructure system
 - e. Be subject to other conditions to achieve the goals, objectives and recommendations of this plan

In addition to the above conditions, Growth Areas near or adjacent⁷³ to towns shall:

Zoning should:

1. Amend the zoning ordinance to implement the goals, objectives and recommendations of this plan
2. Provide a variety of districts, which may include overlay districts, for planned future

⁷³ These provisions apply to the growth areas in the vicinity of Berlin, Snow Hill, and Pocomoke.

⁷⁴ The County shall be a party to the annexation agreements of designated growth areas annexed into municipalities.

- growth with sufficient land area to accommodate this development without constricting supply to the point of artificially increasing land values
3. Provide sufficient districts to accommodate existing development without creating undue nonconforming uses
 4. Ensure that new development is compatible with the surrounding neighborhoods' character so that it is a physical, financial, and aesthetic improvement to the community
 5. Provide for additional development density to reduce the amount of land consumed by development
 6. Use overlay zoning to generate fully planned communities able to meet the tenets of this plan
 7. Provide site and architectural development standards
 8. Provide more specific standards to improve new developments' landscaping
 9. Provide specific standards for neighborhood, community, and regional/highway commercial uses
 10. Review rezoning requests bi-annually and establish policies for appropriate rezonings
5. Proper design and construction of roads such that they are only as wide as required for safety and traffic volume
 6. Usable building sites/lots
 7. Land for schools and other appropriate public facilities
 8. Adequate recreation facilities
 9. Green infrastructure
 10. Pedestrian trails and bikeways
 11. Lot orientation to take advantage of passive solar heating
 12. Limiting the lifespan of subdivision and site plans when they are not implemented
 13. Underground utilities and easements should be provided.

General Recommendations:

1. Amend the county code to implement the goals, objectives, and recommendations of this plan.
2. Develop and maintain a development tracking system to record and map the location, type and intensity of development
3. Screen new residential development from roadways to maintain the county's rural character
4. Reduce through traffic on residential streets.
5. Provide for adequate residential local and collector roads by upgrading existing roads or providing new roads as appropriate
6. Track sewer and water system capacities for planning future capacity
7. Implement stormwater and sediment control systems to address both quantity and quality treatment

Subdivision controls/development standards should provide for:

1. Appropriate subdivision ordinance amendments to implement the land use goal, objectives, and recommendations of this plan including provisions for conservation subdivisions
2. Proper waste disposal and water supply provision
3. Proper stormwater management
4. Adequate roads

8. Provide for pedestrian and bike pathways to encourage non-vehicle transportation
9. Purchase preservation easements to obtain sufficient open space and to retain natural resources
10. Disrupt natural features (natural streams, mature trees, special habitats, etc.) only when no alternative exists
11. Foster commercial site and architectural standards to bring about higher quality development, limit roadside clutter and glare, and prevent intrusive and incompatible development styles and patterns
12. Provide suitable flexibility to permit “new urbanist/traditional neighborhood” plans
13. Provide private and public open space for recreation and institutional needs
14. Use native landscaping vegetation to the maximum extent feasible
15. Provide vehicle parking in sufficient numbers but site dominance should be avoided
16. Develop a countywide transportation plan
17. Create and adopt an official map locating future streets and access points along major roadways
18. Discourage strip commercial development
19. Adopt Sensitive Area Management Report recommendations and incorporate them into the Shoreline Commission’s standard review procedures
20. Adopt Maryland Department of the Environment’s (MDE) dock and pier construction standards

- into the Shoreline Commission’s standard review criteria
21. Consider adoption of the state dock and pier environmental study recommendations

It is the this plan’s policy that the cost of all site improvements including streets (both internal and external); improvements related to the development, landscaping, utilities, and their easements; and all other improvements/facilities required to meet local and other codes, regulations, and policies shall be the financial responsibility of the developer.

Site design standards should provide for:

- Open space
- Parking
- Paving
- Access drive design/location
- Landscaping
- Building design
- Signs
- Non-glare lighting
- Lot coverage for multifamily, commercial, and industrial uses
- Minimization of impacts on adjacent land uses
- Less reliance on wetlands to meet open space requirements
- Usefulness of open space and recreational areas