

# M&G

Managing Maryland's Growth

## Writing the Municipal Growth Element to the Comprehensive Plan

*This document may not reflect current law  
and practice and may be inconsistent  
with current regulations.*

# 25



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## Writing the Municipal Growth Element to the Comprehensive Plan

# 25

MODELS AND GUIDELINES

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# Introduction

*Managing Maryland's Growth: Writing the Municipal Growth Element* is the 25<sup>th</sup> publication in the *Models and Guidelines* series developed by the Maryland Department of Planning (MDP) to provide technical assistance to local governments. This publication will assist those who are preparing the municipal growth element that House Bill (HB 1141) requires in all municipal comprehensive plans by October 1, 2009.

HB 1141, entitled "Land Use-Local Government Planning," was passed in the 2006 session of the Maryland General Assembly. This is extensive legislation that affects municipal annexation and coordination between municipalities and counties, as well as the makeup of comprehensive plans. It is the first legislation to have this large an impact on comprehensive plans since the Economic Growth, Resource Protection and Planning Act of 1992, hereinafter referred to as the 1992 Planning Act. The 1992 Planning Act required county and municipal comprehensive plans to incorporate the eight Visions that comprise the State Development Policy and also required local comprehensive plans and development-related ordinances to be consistent with those Visions.

HB 1141 amends Article 66B of the Annotated Code of Maryland, which updated annexation law that had not changed in over 30 years. The new law strengthens land use requirements by necessitating better planning for annexations. This bill requires additional elements to be adopted into comprehensive plans and requires some present elements to cover additional material by October 1, 2009. This new law requires all municipal comprehensive plans to include a municipal growth element and a water resources element by that date. This publication deals specifically with the municipal growth element. Municipalities that do not meet the October 1, 2009 requirement cannot re-zone land. However, MDP may grant a maximum of two six-month extensions.

## What Is The Municipal Growth Element?

HB 1141 amends Section 3.05 (a)(4) of Article 66B. It adds the requirements for the municipal growth element defined in new Section 3.05(a)(4)(x). This element requires a far more detailed and quantitative analysis of the municipality's anticipated growth than has been required in the past. HB 1141 also contains provisions requiring face-to-face meetings and coordination between municipal and county representatives before the municipality can adopt the growth element.

The municipal growth element must examine past growth trends and patterns. It shall include a projection of future growth in population and resulting land needs based on a capacity analysis of areas selected for future municipal annexation and growth. It also requires an examination of the effects of growth on infrastructure and natural features both within and adjacent to the present municipality and on future growth areas that may be annexed.

The new municipal growth element requirement holds municipal comprehensive plans to a greater level of detail than previously. However, this presents an opportunity for cities and towns to delve more deeply into the dynamics of their growth and development. Requiring this detailed analysis of population growth, land development and infrastructure impacts gives local elected officials and planners the advance knowledge needed to adequately prepare for future development and its effects.

## Organization of This Document

This publication includes a general description of the municipal growth element as it affects other mandatory elements of the comprehensive plan, most notably those for land use and community facilities.

**Part I** explains each requirement for the municipal growth element as contained in the new Section 3.05(a)(4)(x) of Article 66B, as well as presents samples from existing plans that help illustrate how these requirements might be treated.

**Part II** is a sample municipal growth element incorporating the requirements of HB 1141 for a hypothetical town called Piedmont, Maryland.

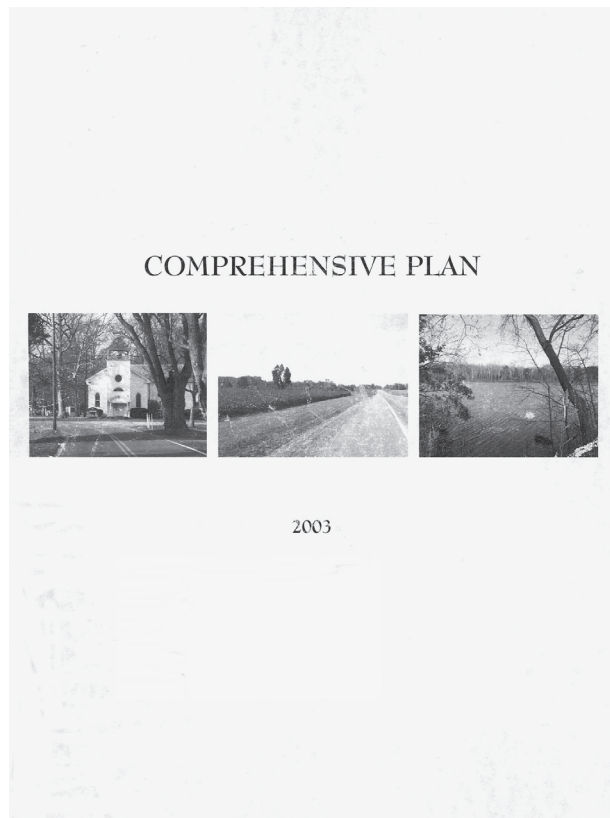
Four appendices follow with growth scenarios, methodology, a summary table for development capacity analysis and a listing of the required elements to comprehensive plans.

## Incorporating the Municipal Growth Element into the Comprehensive Plan

The passage of HB 1141 significantly affects the organization and the depth of the subject matter covered in municipal comprehensive plans. All elements in the plan must now consider municipal growth areas, even if these presently lie beyond municipal boundaries. For some comprehensive plan elements, such as transportation, this is simply a matter of identifying features or facilities that fall within those growth areas, now or in the future. The essential makeup will not change.

However, the plan's land use and community facilities elements, formerly two elements of the plan, now become three: municipal growth, community facilities and land use. Some material that formerly resided exclusively in the land use and community facilities elements may now shift to the municipal growth element. The links among these three elements are pronounced. (For a list of all elements required in a comprehensive plan, see Appendix D.)

It is important to clarify the respective roles of these three elements within the town or city comprehensive plan. Such clarification will reduce overlaps, gaps and conflicts among these three elements. The following sections outline the roles and organization of the three elements as they interrelate in the comprehensive plans.





## **Land Use Element**

The land use element is a key part of any comprehensive plan because it addresses the physical development of the entire jurisdiction. It traditionally presents a picture of the municipality's land use patterns and makeup, both prior to and after anticipated growth has occurred. It also is a policy document that contains goals, objectives and implementation recommendations that will guide the land use and intensity of development.

The land use element defines current land use and what it will look like when build-out occurs. Land use issues are presented through maps, graphics, tables, charts and text. The current land use map depicts all land falling within the municipal boundaries, while the proposed, or future, land use map illustrates land uses for both current town and any municipal growth areas that presently lie beyond existing boundaries.

Good planning dictates that the municipality and county agree on those land areas that will someday become part of the municipality. HB 1141 mandates that jurisdictions meet and confer on this subject before the municipal growth element can be adopted.

The land use element may contain an inventory of current land uses and may also chart acreage devoted to each land use at buildout. It should also define each of the municipal plan's land use categories, such as low-density residential or highway commercial, by type, use, intensity and density. This inventory provides background and legal support for any subsequent changes to the municipality's zoning and other development ordinances. The land use element may also break the municipality down by sectors or neighborhoods and present more detailed information of each in terms of past and future development.

## **Community Facilities Element**

The community facilities element details the types and general location of all public infrastructure and services needed to implement the municipality's comprehensive plan. As such, the element analyzes and summarizes facility needs in a manner that is consistent with the needs identified in other elements of the plan.

The community facilities element should also identify any obstacles to providing these services and facilities. As part of its recommendations, the element should include a general timeline of facilities for the whole municipality. This timeline provides a guide to capital programming decisions.

While the community facilities element presents the complete picture for the entire jurisdiction, the municipal growth element looks only at those facilities affected or necessitated by future growth.

## **Municipal Growth Element**

The municipal growth element will discuss and project the dynamics of the municipality's growth, including: where growth has occurred and will be encouraged; the amount of growth involved and land to be consumed; the rate of growth; and its past and future impacts on community facilities and natural features.

The municipal growth element is closely linked to the land use and community facilities elements because it encompasses the physical expansion and development of the town or city and examines various facilities and services affected by growth. However, there must be a clear delineation among the land use, community facilities and municipal growth elements because they cover different issues.

If the city or town is expected to expand rapidly, the municipal growth element, as a guiding document, will delineate large future growth areas and depict significant impacts on infrastructure. If the municipality is expected to expand slowly, or not at all, the municipal growth element will reflect a more conservative vision for the future, with minimal discussion of future growth areas and impacts.

## **The Municipal Growth Element's Treatment of Land Use**

The plan's municipal growth element depicts, qualitatively and quantitatively, how the municipality should and will evolve into the land use pattern addressed in the land use element and depicted on that element's future land use map.

The growth element assesses land demand based on existing and projected population requirements for different housing types and community facilities. This land needs assessment is calculated for the end of the planning period and, perhaps, for various points in time during the interim.

Demands for housing, shopping, work and recreational opportunities change as the population matures and additional households are created. These issues relate to quality of life, community character and design requirements for new construction, and lie at the core of the comprehensive plan. These factors must be analyzed, balanced and, finally, approved.

Recognition of various development constraints and fiscal realities shapes the recommendations and proposals of the element. A fully developed text, illustrated and documented, lets a citizen know that the jurisdiction has a clear direction and a well considered strategy for achieving its growth management goals and objectives.

The municipal growth element recognizes the municipality's historic rate and pattern of growth. It then projects into the future. Accordingly, it contains a development capacity analysis that inventories developable area by land use type within the town and in anticipated growth areas that may be subject to annexation. It must also assess the holding capacity of any land that could be redeveloped, plus parcels that could accommodate infill development.

## **Municipal Growth Element's Treatment of Infrastructure**

Based on the quantitative analysis of potential future development shown above, the element must examine nearby schools, parks, the municipal water/sewer infrastructure, stormwater and other facilities and determine the impacts this level of development will have on them.

Possible infrastructure capacity deficits should be clearly identified, including a discussion of when these could be expected to restrict development. The discussion should include estimates of when planning studies should be initiated and when actual infrastructure construction must commence in order to avoid later shortfalls. These lead times are frequently measured in years. Accordingly, facility upgrades or expansions should be programmed to meet the needs resulting from growth area annexations and subsequent development approvals.

The municipal growth element concerns itself with the anticipated increase in infrastructure demand, while the community facilities element addresses the overall infrastructure needed to service the town or city both now and after growth has occurred. These discussions must

be integrated with the comprehensive plan's vision statement and land use element goals and objectives. They should also be consistent with the municipality's growth management goals, objectives and priorities.

## Implementation Element

The implementation element addresses the land use and development regulations that are necessary to put the land use and other elements into practice. That discussion provides the backdrop for any changes or additions deemed necessary in the municipality's zoning, subdivision, stormwater, and other development regulations and ordinances.

### The Water Resources Element

Water resources adequacy and capability must be evaluated as part of the identification of needs for water and sewer infrastructure. There are critical links between the new water resources element and the municipal growth element as well as with other elements of the comprehensive plan, particularly the land use, sensitive areas, community facilities, and implementation elements. HB 1141 established that a water resources element be included in comprehensive plans and requires that the element be completed by October 1, 2009.

The water resources element must address the availability and adequacy of water supply sources and the capability of water bodies to assimilate wastewater and stormwater. The ability to support the growth discussed in the municipal growth element will depend on the adequacy of water resources. If water supply or assimilative capacity is not adequate, the municipality will either have to investigate alternative means of supply or discharge or will have to modify its plans in order to grow within the physical capability of the available water resources.

The relationship of the municipal growth element to water resources in the county and even adjacent counties must be considered when this element is prepared. The county water and sewerage plan should also be considered in preparation of these elements. The water and sewerage infrastructure that is needed to support the municipal growth element is dependent on adequate water resources as managed under the State's regulatory requirements and the county water and sewerage plan. Since the law requires that the county water and sewerage plan be consistent with the local comprehensive plan, it is important that all of the comprehensive plan elements be in harmony with respect to both water resources and service facilities. The comprehensive plan elements should therefore be prepared in a manner that provides adequate guidance for the county water and sewerage plan (See additional material on water and sewerage facilities in other sections of this guidance).

Guidance for the water resources element is available in MDP's forthcoming Models & Guidelines #26. That publication describes in detail what the element must cover. In addition to the normal review requirements under Article 66B, the water resources element is subject to review by the Maryland Department of the Environment for consistency with its water resources programs.

## What Goes Where?

The following table contains a list of items that are typically found in a municipal comprehensive plan. Prior to HB 1141, these items would have fallen within either the land use or community facilities elements. The addition of the municipal growth element creates an opportunity to further refine these materials and analyses within the plan. The following may be used as a guide for the placement of these items, taking into account local preferences and issues.

If an “x” appears under more than one element, that item could logically appear in either.

Subject	Municipal Growth	Land Use	Community Facilities
<b>Land Use Element</b>			
Present land use map		x	
Future land use map		x	
Future growth areas map	x		
Annexation limits map	x		
Urban/rural areas map	x	x	
Neighborhood/Planning Sector map		x	
Acreage inventory by land use/zoning	x		
Development capacity analysis/zoning	x		
Annexation policies/guidelines	x		
Existing/proposed development in neighborhood/planning areas		x	
Build-out acreage inventory by land use/zoning		x	
Acreage demand for future development	x		
Number and types of units projected	x		
General recommendations/guidelines for residential, commercial and industrial land use and development		x	
Design guidelines/growth patterns		x	
Definitions/description of individual land use categories and densities		x	
Historic growth patterns	x		
<b>Community Facilities Element</b>			
Existing community facilities inventory			x
Total facilities needed at build-out			x
Present shortages/problem areas	x		x
Projected additional facilities needs/locations	x		
Recommended timeline for facilities needed to implement plan	x		x
Growth/development impacts on facilities within municipal boundaries	x		
Growth/development impact on facilities beyond municipal boundaries	x		
Goals, objectives, policies		x	x

Table 1 Subjects that are typically found in a Municipal Comprehensive Plan

# The Requirements of the Municipal Growth Element

The goal of Part I of this *Models & Guidelines* publication is to clarify and explain the provisions of Section 3.05(a)(4)(x), the new language in Article 66B containing the requirements of the municipal growth element. Calculations and methods for preparing the municipal growth element are utilized throughout this section. The methodologies described have been developed by MDP and other entities.

Selected wording from each requirement of Section 3.05(a)(4)(x) is included in the text of this section. This wording is cited and followed by explanatory text for addressing the requirement in the comprehensive plan.

## Past Growth Patterns of the Municipal Corporation

This part of the municipal growth element presents a brief history and analysis of the municipality's growth characteristics. This can be done in terms of land use type; extent, rate and location of growth; and population change.

### Time Period Covered

Population changes and rates of change should cover several decades in order to present a full picture of the municipality's development in recent time. Any detailed discussion of growth patterns should, at a minimum, cover the timeframe of the currently adopted comprehensive plan.

### What to Cover

The term "growth patterns" refers to the direction, rate and types of growth, or stagnation, that the municipality has experienced. The growth patterns discussion could consider:

- Change in developed acreage over the period under discussion;
- Population change and rate of change;
- Location of land use changes; and
- Historical trends and issues that were the impetus behind current growth patterns.

## Population Growth Projections

Population growth projections should appear early in the municipal growth element since they form the basis and driving force behind all subsequent discussions of growth. Once the projected population is determined, it is then necessary to present a discussion of how much land and public infrastructure are needed to serve it.

## Future Land Needs

The following three provisions of the law require a calculation of the acreage needed, both within and adjacent to the town, to serve future population growth.

- *Land area needed to satisfy demand for development at densities consistent with the long-term development policy*
- *Anticipated future municipal growth area(s) outside the existing corporate limits of the municipal corporation*
- *The capacity of land areas available for development within the municipal corporation, including infill and redevelopment*

This can be done after determining the projected population growth, the number of residential dwelling units and the type and densities of residential development needed to serve it.

In this part of the growth element, the municipality looks at its anticipated population and determines future land need. It also identifies the land areas where the growth will occur. A number of methodologies can be used to calculate the size of growth areas. These involve using anticipated zoning to determine the holding capacity of available land with respect to the acreage needed to accommodate the projected population.

The municipal growth element should also provide an estimate of land needed to serve future commercial and industrial development. While commercial and industrial acreage is more difficult to project than dwelling units and residential acreage based on population projections, it is nevertheless an important factor in any calculation of future land need and resulting demand on water and sewerage infrastructure.

For the residential land supply portion of this requirement, this publication uses the methodology agreed to in the *Development Capacity Analysis Local Government Memorandum of Understanding* (MOU), which was signed by the Maryland Municipal League and Maryland Association of County Officials in August 2004, and the *Development Capacity Analysis Executive Order*, signed by Governor Robert L. Ehrlich, Jr. in August 2004. The MOU agreement and the executive order formalized a commitment to implement the recommendations made by the Development Capacity Task Force, which are outlined in their July 2004 report titled *Final Report of the Development Capacity Task Force* (the full report is available at MDP's website, [www.mdp.state.md.us/develop\\_cap.htm](http://www.mdp.state.md.us/develop_cap.htm)). The methodology is detailed in MDP's publication entitled *Estimating Residential Development Capacity: A Guidebook for Analysis and Implementation in Maryland*, also available at the website.

The following is a brief discussion of this methodology as it is used to determine land supply. (See the publications mentioned above for a full description of the methodology).

The development capacity analysis produces estimates of the number of dwelling units that would exist at ultimate buildout (not strictly in the timeframe of the comprehensive plan) based on zoning, land use, parcel data and sewer service information and information about un-buildable lands. The estimates are focused on the capacity of the land to accommodate future growth based on these data, along with various assumptions about the percentage of the allowable density that is achieved when the land is developed.

### **Calculating Land Capacity in Existing Town and Growth Area**

This section outlines the general steps for completing the calculations needed to meet the three provisions listed above. Part II of this publication presents a model in which samples of all the calculations are provided.

MDP has developed a development capacity analysis that uses parcel data to calculate the capacity for new households on vacant and underdeveloped lands within a municipality. MDP can assist municipalities in calculating the development capacity of their city or town. Ideally, the municipality would provide MDP a zoning map (GIS data preferred) and related information such as density yield information per zoning district as well as mix of land uses allowed under each zoning district. Redevelopment potential is something that can be established in conjunction with MDP, but it is not part of the current capacity analysis. Please refer to the documentation mentioned above for more specific information on development capacity analysis.

**Step 1** Project the population for the plan’s target year and for various interim years, if necessary. This is the total number of people the municipality expects to accommodate in these years. There are a number of ways to do this. MDP will provide technical assistance to towns by written request to calculate population projections.

**Step 2** Determine the density of development allowed by the zoning. Determine the number of units (density) that can be accommodated per acre for each zoning district. It is important to calculate a “zoning yield” factor. Based on real-world experience, realized density of development (i.e. the number of homes per acre actually built) is usually not built at 100% of allowable density, but rather at some lower density. MDP’s default, or “assumed”, yield factor is 75% of the allowable density of a residential zoning district. For example, if the zoning of a parcel allows four units per acre, the assumed yield is actually three. This number can vary across zoning districts and jurisdictions. It is important to note that assumptions about what zoning will be in the growth area will have to be created. These can be general assumptions, but need to specify “density yields” for the area(s). This basic calculation is shown in Example One below.

**Example One** Calculation of Density Yield (example zoning district allows single housing type)

Zoning District	Description of Allowable Uses and Minimum Lot Sizes	Allowable Density	Density Yield (Allowable Density x Density Yield)
R-1	minimum lot size: 10,000 sq. ft.	4.36 dwelling units/acre	3.27 dwelling units/acre (4.36 x .75* = 3.27)

Calculation

Allowable density = 43,560/minimum lot size, in this example 43,560/ 10,000 = 4.36 x .75

Density yield = allowable density times 0.75\*

\* 75% is MDP’s default, or assumed, yield factor. This varies by jurisdiction and zoning district.

If a particular zoning district allows a range of residential densities or allows mixed uses, it is necessary to derive an assumed or average residential density for this acreage. This is shown in Example Two on page 10.

**Example Two** Calculation of Density Yield (example zoning district allows multiple housing types)

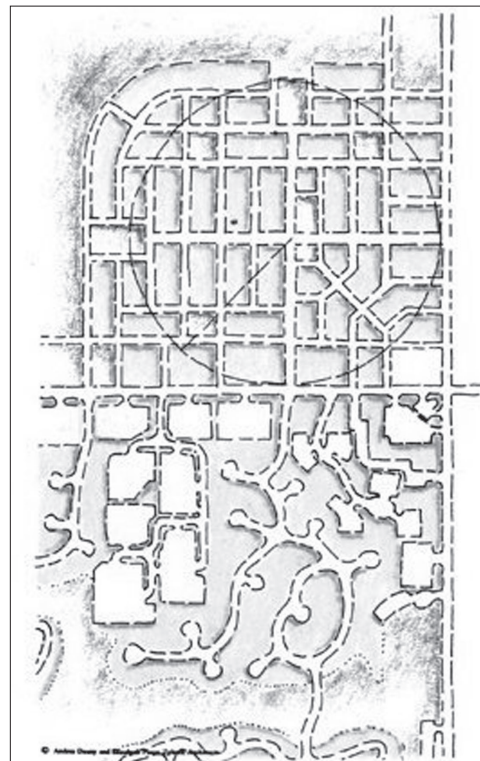
Zoning District	Description of Allowable Uses and Minimum Lot Sizes	Average Allowable Density	Density Yield (Allowable Density x Density Yield*)
R-3	Minimum lot size 1 = 10,000 sq. ft. for 1-family	7.26 dwelling units/acre	5.45 dwelling units/acre  (7.26 x .75 = 5.45)
	Minimum lot size 2 = 5,000 sq. ft. for 2-family		
	Minimum lot size 3 = 3,000 sq. ft. for 3+ family		

Calculation  
 Average allowed lot size = (minimum lot size 1 + minimum lot size 2 + minimum lot size 3) ÷ 3. In this example (10,000 + 5,000 + 3,000) ÷ 3 = 6,000 sq. ft.  
 Average allowable density = 43,560 / average allowed lot size. In this example 43,560 ÷ 6,000 = 7.26  
 Density yield = average allowable density times 0.75\*

Note: Other methods for figuring out the yield, such as a weighted average, can be used here if appropriate.  
 \* 75% is MDP's default yield factor. This may vary by jurisdiction and zoning district

**Step 3** Calculate the amount of developable land within the municipal boundaries and the growth area. Use the following steps:

- From the total acreage within the municipal boundary and growth area, subtract all land acreage zoned for nonresidential use (e.g., commercial, industrial).
- Subtract tax-exempt land acreage (e.g., government-owned, institutional, such as churches, schools, hospitals).
- Subtract acreage for protected lands and environmentally sensitive parcels (e.g., agricultural easements, wetlands, floodplains, homeowners' association land).
- Subtract other parcels without capacity (e.g., built out areas).
- Determine the amount of partially-developed/under-developed land. See Appendix C for an example of table summarizing this information.





**Step 4** Calculate the total households (and population) that can be accommodated on developable land (including vacant, infill, and potential redevelopment). See Appendix B for a detailed description of development capacity analysis.

Calculate the population that can be accommodated in the existing town and growth area. This calculation is: Persons Per Household times New Household Capacity (per acre of vacant or partially developed land).

**Step 5** Assumptions need to be made about the form that future residential development will take. Assumptions must be made concerning the following:

- Zoning and density of the residential land in the growth area that presently lies beyond the municipal boundary based on a visioning of what future residential development there would look like, and
- The proportion of residential land use in each zone (in mixed use zoning districts, the percentage of the land that is likely to be residential).


Once these assumptions are developed, the steps described above are used to determine the number of dwelling units that could be accommodated by zoning category. The result of these calculations is the amount of development capacity (number of houses and people that would fit in the area) within the municipality and the amount of development capacity in the town's growth area.

## Demand for Future Growth

Once development capacity of the town and growth area is calculated it is possible to determine if the supply of land in the municipality and growth area is sufficient to accommodate the projected population in accordance with its vision of future development. To do this, compare the total capacity of available acreage with the projected population.

The model municipal growth element appearing later in this publication is an example of how such a future land area could be determined given certain assumptions about the municipality's future growth. Following are some points to consider when preparing this part of the growth element.

- If there is already sufficient land to accommodate the anticipated population, it is essential only to determine if current zoning meets the needs of the new comprehensive plan in terms of the kind of residential development desired in the future. If present zoning isn't adequate to accommodate the anticipated population, then the zoning density of the present growth areas must be increased or new land must be made available.
- It must be remembered that a planned growth area should not be too large. A growth area that is too large allow too many development options and result in a spread-out, poorly organized development pattern.
- When determining its future growth area, a municipality should not limit that growth area to specifically identified properties. As of October 1, 2009, all annexations must be consistent with the municipal growth element. If that growth element identifies only certain properties beyond its boundaries as part of its future municipal growth area, any other annexations would automatically require repeated amendments to the comprehensive plan so that they too are "consistent".

*The remaining section of Part I contains headings and subheadings indicated by the following symbol, , which are word-for-word excerpts from House Bill 1141. Following each is a discussion of how each may be addressed in the comprehensive plan's municipal growth element with examples excerpted from currently adopted plans of Maryland jurisdictions.*

## **Public Services and Infrastructure Needed to Accommodate Growth within the Proposed Municipal Growth Areas, Including Those Necessary For:**

### **Public schools sufficient to accommodate student population consistent with State Rated Capacity standards established by the Interagency Committee on School Construction**

Using the plan's population and dwelling unit projections, this section gives local decision-makers a head start in determining which schools need to be expanded. The school impact analysis is done in several steps:

- Apply municipal population in the target year and determine the number and type of housing units that the population generates.
- Using per-household data from the county educational facilities master plan, calculate the number of students generated by type of projected housing units, including the number in the elementary, middle and high school levels.
- Assign students to schools depending on the district in which development would occur; add the number generated by municipal growth to the anticipated enrollment for that year as shown in the county master facilities plan.
- Compare the resulting enrollment to schools' State Rated Capacity (or corresponding county standard) to determine how much excess capacity is still available or if there is overtaxing.

#### **Example One** Student yields

##### *ST. MARY'S COUNTY EDUCATIONAL FACILITIES PLAN*

- *Elementary 0.215 students per DU*
- *Middle 0.107 students per DU*
- *High 0.154 students per DU*
- *Total students 0.476 per DU*

*Taking the above and applying them to a one thousand-unit increase, we get 476 students in local schools (1000 x 0.476).*

#### **Example Two** Additional Schools Needed by Type; Site Locations

##### *CLARKSBURG MASTER PLAN AND HYATTSTOWN SPECIAL STUDY AREA JUNE, 1994; (MONTGOMERY COUNTY) Pages 163-164.*

*This segment of the plan identifies schools required as the result of the development envisioned in the Clarksburg area of Montgomery County. It also identifies the sites where they should be located.*

*The Study Area is currently in the Damascus High School Cluster... This plan estimates that a total of eleven public schools may be needed to serve the projected public school age population of the Study Area*

### *High School*

*This plan recommends that a high school be located on a portion of the 62-acre site owned by the Board of Education at the intersection of Frederick Road (MD 355) and Shawnee Lane.*

### *Middle Schools*

*This plan recommends the need for two middle school sites...The site for Clarksburg Middle School #1 is located north of West Old Baltimore Road between MD 355 and the greenway in the Brink Road Transition Area. The site for Clarksburg Middle School #2 is on the northwest corner of MD 27 and Skylark Road. (PP. 162-163)*

## **Libraries**

There are few universal hard-and-fast standards for linking population to library services. Some local jurisdictions link population and requirements for additional library employees to meet population needs. However, a municipality might use one or more of the following examples as a guide to completing this portion of the growth element.

Baltimore County states that there should be one additional full-time library employee per additional 2014 persons, a standard based on its current population and library staffing levels. On the other hand, the American Library Association states that there should be 1000 square feet of library space for each 10,000 population.

Prince George's County and the Maryland-National Capital Park and Planning Commission have also developed library standards over the years. The following is a more recent standard for branch libraries. It might be difficult to anticipate the municipality's growth impact on a major branch library of the kind depicted in this Prince George's County example. However, it is possible to determine, in consultation with the affected county library system, if the projected growth would push a county library branch beyond the recommended service population or if this growth would lie beyond that branch's optimum service area.

### ***Example One*** Branch library standards

*APPROVED MASTER PLAN OCTOBER 1989: LANGLEY PARK, COLLEGE PARK GREENBELT PLANNING AREAS 65,66,67; Page 159.*

#### *Branch Library*

*Size: 25,000 square feet*

*Site: 3 to 3 ½ acres*

*Collection: 100,000 volumes*

*Services: Diversified information services, program and meeting space*

*Service Area: Three miles or more than 10 minutes driving time*

*Service Population: 40,000 to 80,000*

*Circulation per Square Foot: 30 to 35 materials*

*General Characteristics: Located in areas of daily public activity where heavy pedestrian traffic, high visibility, convenient parking across the proximity to public transportation exist.*

*Construction of and additions to libraries should be staged to address existing deficiencies and meet the needs generated by population growth.*

**Example Two** Evaluation of present branch library facility

NORTH EAST COMPREHENSIVE PLAN-2004; Page 45.

*The present size of the North East Branch is 2800 square feet. A 2800 square foot public library can provide only basic library services. Its collections are of necessity very small and its educational programs and services are very limited...The size of a library branch capable of providing full service is 15,000 to 25,000 square feet. The library will require five acres of land located near and visible from a well- traveled road. The present site will not support an adequate expansion...The...Board seeks to locate this facility in close proximity to the downtown area. The Board of Trustees has proposed to the county Commissioners that a new or expanded library be constructed in approximately 2008.*

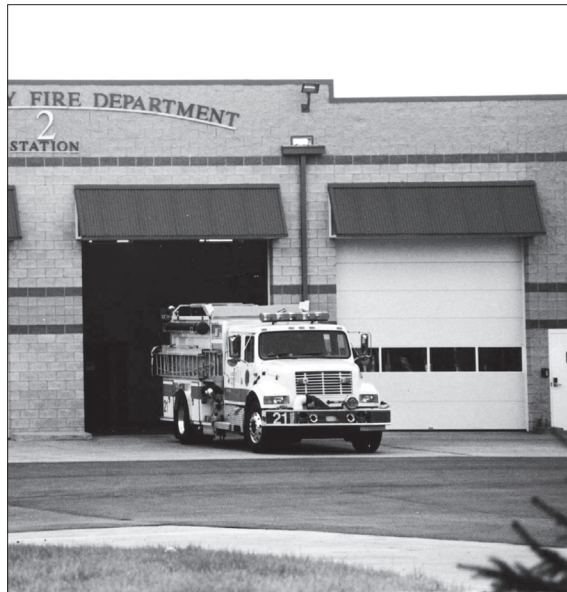
**Public safety, including emergency medical response** 

These impacts are calculated using data for population and area served, and matching these figures against industry standards for adequate coverage. Police officer requirements are calculated using a standard ratio of sworn police officers per a certain number of persons and then determining the demands created by the projected population of the municipality. Fire engine/ ambulance needs are a function of the population to be served and area to be covered.

**Example One** Examination of existing emergency resources

TANEYTOWN AND ENVIRONS  
COMPREHENSIVE PLAN 1997,  
Pages 45-47

*The Taneytown Fire Department has approximately 70 active volunteer firefighters, 40 of whom have advanced first-aid training. For medical emergencies, the Department has 25 Emergency Medical Technicians (EMTs) and 6 Cardiac Rescue Technicians (CRTs). To help ensure adequate daytime coverage for medical emergencies, the Department has hired two full-time employees, a paramedic and an EMT...*



*The number of fire and emergency medical responses that the Taneytown Fire Department has made has increased as the area's population growth has continued...*

*As indicated by the table, the Taneytown Fire Department has experienced a substantial increase in the demand for emergency services. This increase is attributed to building construction and the associated increase in population within the Taneytown planning area.*

**Example Two** General discussion of impacts of projected population growth on emergency services; impact analysis for Taneytown.

TANEYTOWN AND ENVIRONS COMPREHENSIVE PLAN 1997, Page 119.

*The provision of emergency services (fire, ambulance, and rescue) must keep pace with an expanding and growing community. Growth involves not only population increases, but also physical expansion in terms of buildings, water lines and fire hydrants, and roads and bridges. The provision of emergency services in the future will require cooperation between the Taneytown Fire Department, citizens, government, and businessmen. This cooperative network is directed towards fire prevention, emergency medical care, and maintenance of a modern and technically efficient fire department.*

*The Insurance Services Office developed a standard that projects the number of in-service fire engines that would be required to properly protect a given area. This standard is based on the area's population using the following formula:*

$$\text{Number of Engines} = 0.85 + [0.12 \times (\text{Population in 1000s})]$$

*Based on the projected population of the planning area at full build-out (13,063 people), a total of 2 fire engines would be needed. Since the Taneytown Fire Department has 4 in-service engines, the Taneytown area is well equipped to adequately serve its emergency needs. This appraisal is made even in recognition of the fact that the Taneytown fire district extends well beyond the planning area, for which no projections in population growth are attempted in this plan.*

**Example Three** Growth's effects as per a standard ratio of police officers per 1000 of population.

*POLICE PROTECTION: TANEYTOWN AND ENVIRONS COMPREHENSIVE PLAN 1997, Page 119.*

*There are various standards of police officers per population. A commonly used ratio in addition to the one shown below is 1.6 sworn officers per 1000 people.*

*The growth in population and business activity contemplated by the plan will require expanded police protection. Ultimate build-out of the community planning area assumes that future development will be within the corporate limits of the city at the time of development. The Taneytown Police Department uses a standard of one police officer per 750 people. Based on this ratio and the projected population of the community planning area (13,063), the city will need 17 police officers, or an additional 9 officers at full build-out.*

*The Department considers the current office space to be at capacity. As the city's population continues to grow, with a corresponding increase in the size of the Department, the city police will need a larger facility, possibly within the next 5 years. This plan does not attempt to detail specific sites for a future police station.*

## **Water and sewerage facilities**

The increase in a municipality's population is also affected and controlled by the availability of water and sewerage service. The capacity of water and sewerage facilities must be within the limits of the available water supply and/or assimilative capacity of the receiving waters in keeping with the findings of the water resources element or other relevant information available to the jurisdiction. Therefore, those preparing the municipal growth element must know how available treatment plant capacity will be affected by the projected population increase.

A municipality may have a consultant study prepared or it may estimate these impacts on its own. The Maryland Department of the Environment has standards for estimated individual and household water consumption and also for effluent generation per day. For individuals, the standard for both water consumption and water discharge is 100 gallons per person per day. The standard for households is 250 gallons per day.

These standard measures are multiplied by anticipated population or dwelling units (or dwelling unit equivalents for commercial and industrial development) and compared against the capacity available in the water filtration and sewage treatment plants serving the municipality. If a treatment plant serves multiple jurisdictions, it is necessary to coordinate with the other user(s) in order to obtain their latest estimates of population growth and anticipated system demand.

Estimates for the impact of commercial and industrial development on water and sewerage can be obtained from several sources. County health and environmental departments have measures for calculating water demand and sewage generation factors for various types of commercial industrial development. The Maryland Department of the Environment has published a standard reference work entitled *Guidance Document: Wastewater Capacity Management Plan (2006)*, which contains numerical measures of wastewater generation for many types of commercial enterprises.

Staff must review adopted capital improvement programs and capital budgets to determine what additions are already planned by the municipality and county during the life of the comprehensive plan. The job is then to determine if treatment plant capacity is sufficient or to identify how much additional capacity is needed given the municipality's anticipated population increase along with requirements created by future commercial and industrial development.

### **Stormwater management systems, sufficient to assure water quality both inside and outside the proposed municipal growth area**

This section of the municipal growth element discusses stormwater management strategies and systems necessitated by the municipality's growth. Jurisdictions address stormwater management through ordinances, programs and projects. The comprehensive plan's consideration of this issue is generally presented almost entirely in its water resources and sensitive areas elements.

In order to avoid duplication, the growth element should reference these other elements as often as possible when discussing stormwater management. The exception would be if anticipated growth creates issues that require specific stormwater facilities, projects and strategies. These would then need to be addressed in the municipal growth element.

If the findings and discussions in the stormwater section lead to specific goals, objectives or recommendations, these should be placed in the comprehensive plan's water resources element or sensitive areas element.

The following examples, from various Montgomery County area comprehensive plans, demonstrate specific principles governing the placement and management of stormwater facilities. The excerpt from the Shady Grove Sector Plan identifies specific project sites, a level of detail that might be appropriate in the municipal growth element when specific stormwater management activities within or adjacent to specific growth areas are being discussed.

### **Example One** Stormwater management recommendations

*ASPEN HILL MASTER PLAN 4/94 (Montgomery County) Page 125.*

- *New construction within the planning area should provide on-site sediment controls for any land disturbing activity exceeding 5000 square feet...*
- *Unless a development drains to an existing regional or joint use storm water management facility, the issuance of storm water management waivers should be limited.*
- *To control streambank erosion, all storm water quantity control facilities should provide two-year storm runoff control.*
- *Storm water management retrofit opportunities will be pursued in the Northwest Branch and Rock Creek, as well as necessary streambank stabilization projects.*

### **Example Two** Identification of stormwater management projects at specific locations

*SHADY GROVE SECTOR PLAN PLANNING BOARD DRAFT-7/2004 Page 94.*

*Redevelopment of the planning area also presents opportunities for stream restoration work in the Metro Station area...This Plan recommends:*

- *Reforestation of the buffers along the Use IV tributary of Upper Rock Creek on Casey Property 3*
- *Protecting the stream buffer and retain as much additional forest as possible where this stream resurfaces east of the Solid Waste Transfer Station*
- *Designing the passive recreation area at the storm water management ponds to preserve the ponds' and reforestation areas' environmental functions*

## **Recreation**

The municipal growth element must consider growth's effects on recreation facilities. One major consideration would be the amount of additional parkland needed to accommodate increased population. Some local jurisdictions have their own methodologies or formulas for calculating these impacts.

In addition, the State of Maryland uses a standard ratio of 30 acres of parkland per 1000 population, meaning that 1000 additional people generate the need for 30 additional acres of parkland. A minimum of 15 of these 30 acres must be recreation land that is owned by the local jurisdiction itself.

**Example** Discussion of park facilities needed in the Cloverly area of Montgomery County  
*1997 CLOVERLY MASTER PLAN (Montgomery County) Pages 66-67.*

*The primary role of much of the existing and proposed park and open space is to protect the quality of Cloverly's watersheds.*

*Northwest Branch Watershed*

*Acquire an additional 33 acres north of Norwood Road to permit trail construction outside the stream buffer.*

### *Paint Branch Watershed*

*Acquire an additional 121 acres of parkland for the protection of the Upper Paint Branch watershed.*

*Create a community gathering place at the eastern end of Cloverly Street in the northern portion of the proposed 2.77 acre park...*

*Coordinate with Montgomery County Public Schools to use the residual land on the Northeast High School site for ballfields.*

## **Anticipated Financing Mechanisms to Support Necessary Public Services and Infrastructure**

The previous section requires the municipality to identify the infrastructure needed to serve future growth. This section should discuss the means for paying for these improvements.

A municipality must take into account its capacity for additional bonded debt, which will determine much of its ability to service anticipated growth. At the same time, it should protect itself against large, unanticipated infrastructure expenses, particularly if its fiscal situation is tenuous. This portion of the growth element is an opportunity for developing a policy that maintains the proper balance.

This section should have policies that guide when and to what extent developers should absorb infrastructure expenses. If a growth area is to be created because of extensive new development, should the developer(s) donate land for a school site, pay for the upgrade of a treatment plant, or create a buffer for streams that could be affected? Under what conditions should the developers provide such assistance? What portions of the costs might developers absorb?

This section may provide recommendations for generating new revenue to pay for servicing new growth. In such cases, these revenue sources should be specified. There may be recommendations for excise taxes or impact fees, or perhaps a special taxing district to help pay for water/sewerage infrastructure. Or there may be recommendations for other local initiatives to finance growth and reduce its burdens on local taxpayers.

## **Rural Buffers and Transition Areas**

The law requires that the growth element “consider” rural and/ or transitional buffers. It does not require that these actually be made part of the municipality’s comprehensive plan.

Depending on the local situation, the comprehensive plan can address the buffer/ transition area issue in a number of ways. Buffer/ transition areas could extend for any distance along the municipal boundary. A transition area could be a useful “step-down” residential strip leading from a fairly urbanized core to low density county land beyond the municipal limits. A rural buffer might be a totally undeveloped greenway, stream valley, agricultural area or natural buffer, or some combination of the above.

However, the municipality could also determine that a rural buffer or transition area is inappropriate. Perhaps it is already surrounded by development and such a buffer is not feasible. Perhaps the municipality needs that land in order to expand. If a buffer or transition area is not part of its future, a simple explanation to that effect is sufficient.



When preparing its plan, the municipality should consider the pros and cons of a buffer. The following are some advantages to a rural buffer:

- Protects and defines the developed edge that marks the municipality's unique character (development along its boundary could blur or erase that edge);
- Gives the city or town some control of land along its periphery;
- Protects sensitive and agricultural areas within the buffer from development;
- Continues and supports an existing greenway or park system, or a network of protected habitats or trails;
- Reserves the area for future development;
- Provides aquifer recharge areas; and
- Provides sites for wastewater spray irrigation, especially if it appears that the Maryland Department of the Environment (MDE) may require such action from the municipality in the future.

Such a buffer/transition area could also be a drawback because it:

- Blocks further town expansion;
- Pre-empts prime development land, thus forcing development onto marginal land;
- Promotes or encourages low-density sprawl development; and
- Precludes the expansion of a rational development pattern that could be serviced by public water and sewer.

When creating a buffer boundary, consider the following:

- Leave sufficient additional space for municipal expansion;
- Protect natural features, sensitive areas and ecological values;
- Look to expand, connect or extend existing greenway systems, trails, stream valleys or linear parks;
- Map the buffer boundary clearly and make it part of the official town proposed land use map; and
- Coordinate this effort with the county since the buffer is probably county land that the municipality may or may not annex in the future.

### **Example**

*COMPREHENSIVE PLAN, TOWN OF FEDERALSBURG, MARYLAND 2006, Appendix E  
Rationale for establishing the greenbelt (rural buffer)*

*"Caroline County is very interested in creating greenbelts in the vicinity of municipalities. One mutual benefit of this policy will be early, frequent and ongoing coordination between County and municipal staff. Federalsburg recognizes that a greenbelt, if appropriately located and sized, will help preserve its unique municipal character in the south county's rural landscape..."*

*Components of the buffer*

*"The Federalsburg greenbelt will consist of farms protected by agricultural easements, farms that have joined agricultural districts, rural legacy areas that are identified as priorities for future acquisition, and other parcels that Dorchester and Caroline counties have identified as potential parcels for preservation as part of an expanded future greenbelt. State and county-owned lands are also an integral part of the greenbelt..."*

*Allowing a buffer while preserving the town's growth potential*

*"...there is sufficient land between the proposed greenbelt areas and the current municipal boundary to accommodate the reasonable growth needs of Federalsburg for the foreseeable future."*

### **Any Burden on Services and Infrastructure for Which the Municipal Corporation Would Be Responsible For Development in Areas Proximate To and Outside the Proposed Municipal Growth Area**

This section considers the impact of growth on any infrastructure or service the municipality creates or administers in an area or on a site outside of its existing boundaries and proposed growth areas. Such infrastructure could be treatment plants, water and sewer lines, stormwater management areas or other facilities or services. To merit consideration under this section of the plan, a facility or service would need to be close enough to the municipal growth area to affect or be affected by the development already in place or occurring there in the future.

The plan should consider the requirements that population growth would place on such a facility or service. For example, This portion of the growth element might have to examine the increased runoff that would affect a stormwater pond or stream bank restoration project for which the municipality has responsibility.

It is possible that this issue has already been covered elsewhere in the comprehensive plan. If so, the other discussions can simply be referenced.

### **Protection of Sensitive Areas, As Defined In Article 66B, Section 1(J) Of the Code, That Could Be Impacted By Development Planned Within the Proposed Municipal Growth Area**

This provision of the law requires the municipality to look outward some reasonable but "proximate" distance beyond its planned growth area(s) to determine what sensitive areas could be affected.

The Definitions section of Article 66B, Annotated Code of Maryland as amended by HB 1141, lists the following as sensitive areas that the comprehensive plan must address in its Sensitive Areas Element:

- Streams, wetlands and their buffers (wetlands must be covered by October 1, 2009);
- 100-year floodplains;
- Habitats of threatened and endangered species;
- Steep slopes;
- Agricultural and forest lands intended for resource protection or conservation (new addition that must be added by October 1, 2009); and
- Other areas in need of protection as determined in the plan.

The first major question to consider is: which sensitive areas must be considered in the municipal growth element? Sensitive areas are already considered in the sensitive areas element itself and perhaps in the comprehensive plan's water resources and implementation elements. The municipal growth element should address the subject in a targeted fashion and yet not create redundancies. Therefore, it should address only those sensitive areas affected by the "proposed municipal growth area" stated in the law. Those include the following:

- Sensitive areas lying within the present municipal boundaries but not yet affected by its

development, and those lying in future growth areas and therefore subject to potential annexation; and

- Sensitive areas that could be impacted by growth but that will not become part of the municipality.

Determining the latter requires interpretation. Sensitive areas lying close enough to the municipality (present and future) to be directly affected by runoff or other impacts would be included. A downstream area governed by Total Maximum Daily Load standards (TMDLs) that might be violated if runoff is not properly mitigated is an example.

The next work item is to decide how to address the actual sensitive areas identified in this section without duplicating the coverage in other elements of the comprehensive plan. This can be done as follows:

- List and/or map those individual natural features only in this section;
- Reference and/or summarize other portions of the plan that could pertain to these specific natural features; and
- Discuss any protection mechanisms, best management practices or implementation that pertain specifically to these natural features and that are not covered elsewhere.

**Example** Identification of specific sensitive areas needing protection and the means by which they should be protected

*APPROVED AND ADOPTED UPPER ROCK CREEK AREA MASTER PLAN-2004*

*The following identifies specific sensitive areas that must be protected as a result of growth in the watershed.*

*Forest-P. 42*

- *Preserve priority forest areas on the Freeman property through parkland acquisition or dedication.*
- *Maximize protection of priority forest area on the Dungan property and in the adjacent biodiversity area through park acquisition, dedication, and conservation easements as part of development on the Dungan property.*

*Wetlands-P. 44*

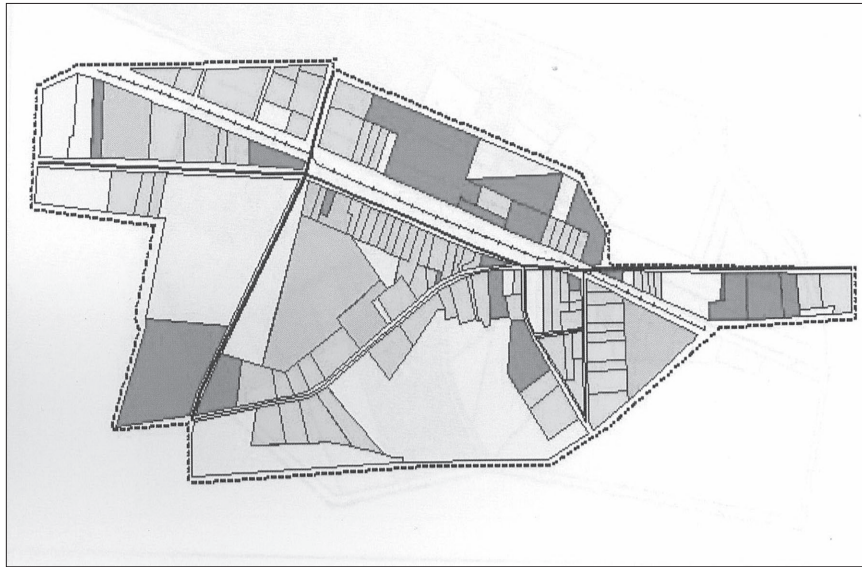
- *Protect wetland resources on the Freeman property and on the Hendry and Casey properties through parkland dedication.*
- *Protect wetland resources on smaller undeveloped properties through conservation easements.*
- *Restore wetlands on key park properties including Muncaster and Laytonia Recreation Parks and the Agricultural Farm Park.*

*Watersheds-P. 53*

- *Remove Cherry Valley Drive extended from the master plan to reduce impact on the North Branch Biodiversity Area and the North Branch stream.*
- *Acquire the Dungan property as parkland or retain low-density zoning without sewer service, maximize protection of the forest buffer, small tributaries, springs, and wetlands, especially those adjacent to the North Branch Biodiversity Area through the development process.*
- *Cluster development on the Freeman property to protect the existing forested areas on the east and west side, as well as the unforested stream buffer and wetlands on the north side of the property. Dedicate the protected area as parkland. Reduce the potential density to limit imperviousness on the site.*

## The Relationship of the Long-Term Development Policy to a Vision of the Municipal Corporation's Future Character

This is fittingly the last section of the municipal growth element and may be used to provide a segue into a more detailed discussion in the comprehensive plan concerning the municipality's history, existing character, future "feel" and the design considerations needed to help achieve the overall vision of the municipality's future growth and makeup.



The municipal growth element should describe the vision of future development. If the municipality's vision is that of a rapidly expanding jurisdiction, then this section should affirm that vision by noting projections of significant population increase and a heavy demand for land to accommodate it. Alternately, a preservation and protection-oriented plan would describe a minimal growth area located within a much larger planning area that includes development buffers and open space recommendations.

# Model Municipal Growth Element for the Town of Piedmont

The following sample municipal growth element takes the requirements of House Bill 1141 and applies them to a fictional municipality. Map I on the following page shows the major natural and manmade features present in and around the fictional town of Piedmont which lies in the fictional Piedmont County, Maryland. These features are discussed frequently in the text, so it is a good idea to review this map in order to better understand the discussion.

Piedmont lies west of Baltimore City and Washington. In recent decades, it has experienced the heavy growth pressures typical of Central Maryland and will continue to do so. Not surprisingly, most of its future residential development will be of the single-family, suburban style typical of that area of the State. However, this scenario also discusses a redevelopment project adjacent to Piedmont's downtown central business district.

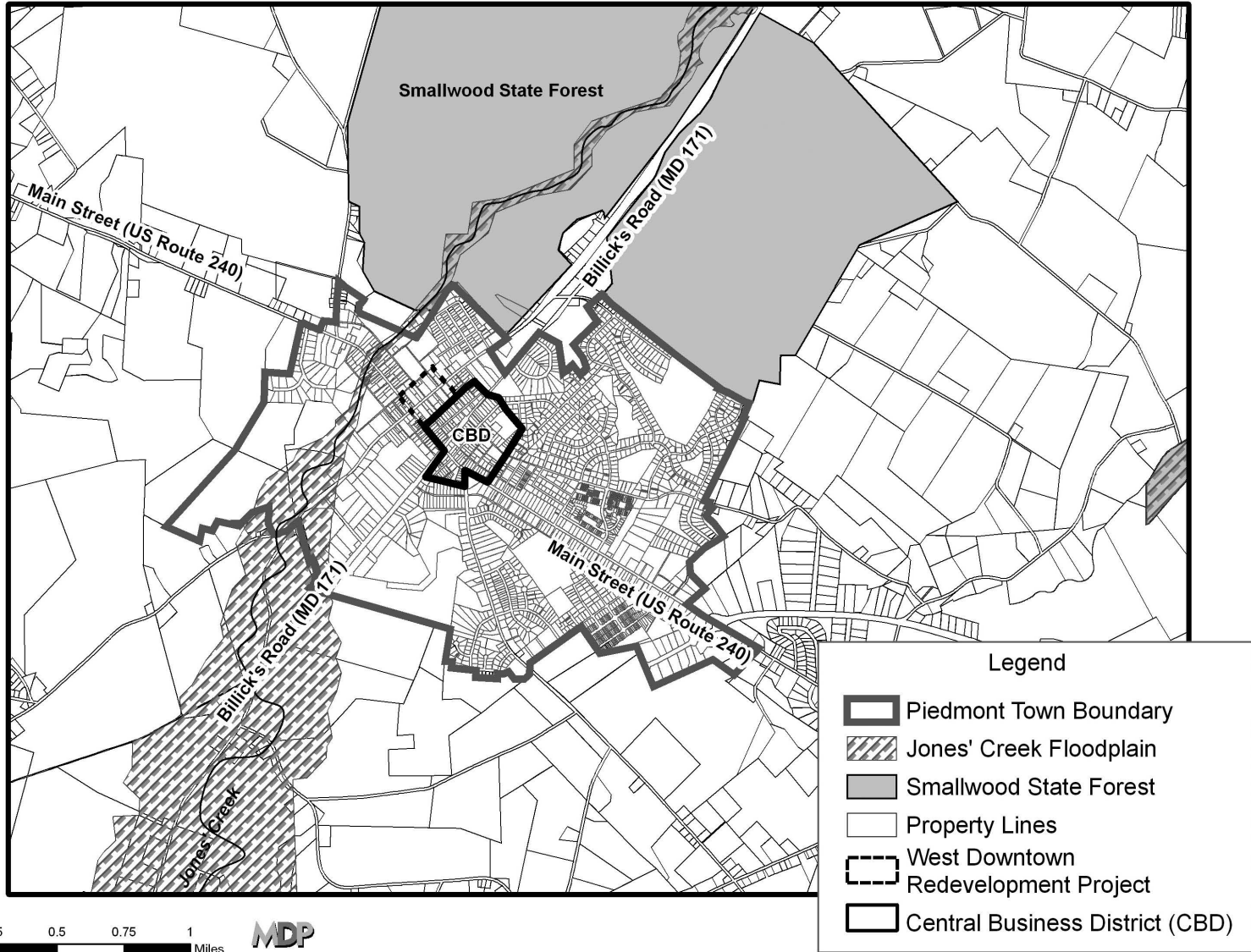
This model municipal growth element addresses a fairly complex development situation. Many comprehensive plans will be simpler and will not have to include this level of detail. However, the complexity here is intentional. Its purpose is to illustrate how a comprehensive plan might address a wide range of provisions in HB 1141 that are general and open to interpretation.

As stated earlier, the methodology used to calculate land supply is based on the Maryland Department of Planning's Development Capacity Analysis. MDP's analysis was sufficiently accurate to be accepted and endorsed by former Governor Ehrlich's Development Capacity Task Force (see Development Capacity Task Force – Final Report). MDP will



provide assistance to towns, by written request, to calculate population and household projections. Dwelling unit demand will most likely be dictated by the land use element of the comprehensive plan.

# Map I - Town of Piedmont and Surrounding Area



This model is not offered as the official or the only way to write a municipal growth element. The law allows a great deal of flexibility. Local situations and conditions may dictate a different approach, organization and methodology than presented here.

## Introduction

This is the municipal growth element for the town of Piedmont’s comprehensive plan. It presents analyses of land consumption and facilities impacts that can be expected as a result of the projected growth of the town’s population from 5637 in 2006 to 8032 in the year 2026.

This population growth will have substantial impacts on development patterns in and around the town and could affect some significant environmental features such as Jones Creek and Smallwood State Park. The growing population will require the expansion of one nearby school, a substantial upgrade to the town’s sewage treatment plant and the identification and development of additional water sources.

## The Growth of Piedmont

### Population: Past Growth Trends and Patterns

Piedmont dates back to the mid-1700’s when it began as a trading station at the intersection of Western Road, now US Route 240 (Main Street), which runs in an east-west direction through town, and Billick’s Road, now MD 171, which runs north-south. For many years, its population numbered in the hundreds, and Piedmont gradually reached a population of about 1,000 in 1960. But suburbanization and the outward spread of population from Baltimore and Washington have accelerated the growth of the town’s population since then. Table 2 below shows population growth over recent decades.

YEAR	POPULATION	INCREASE	RATE (%)
1970	1563	-	-
1980	2816	1253	80.2
1990	3945	1129	40.1
2000	5123	1178	29.9
2006	5637	514	10.0

Table 2 Population growth of Piedmont, 1970 through 2006

### *Land Use Change*

Since the adoption of the most recent town comprehensive plan in 2000, strong outward suburbanization from Baltimore and Washington has continued to affect Piedmont. Given the ongoing growth pressures plus the availability of ample vacant land to the south, significant population increase is expected. Piedmont’s annexations have all been along its southern boundary and additional expansions to the south are expected to occur.

Since the adoption of the Year 2000 Comprehensive Plan, development has been concentrated in two places. Extensive single-family development has taken place in the northern portions of the town adjacent to Smallwood State Forest and adjacent to MD 171. There is also some growth in several neighborhoods adjacent to downtown. Scattered single-family development has occurred elsewhere.

However, the town's supply of vacant land has been greatly reduced over the years due to residential development. Presently, there are only about 45 acres of vacant or underutilized, residentially zoned land remaining within the municipal boundaries. Most of it is in the northern and southern ends of town. Some of this land cannot be developed because of steep slopes in the north and the Jones Creek floodplain in the south. Vacant parcels of residential and commercial land are scattered at various other locations around Piedmont.

An older, deteriorating area of mixed residential and commercial buildings, centered along Main Street just west of the central business district (CBD), is being redeveloped as part of the West Downtown Redevelopment project. This roughly 10 acre area is to be re-developed with new commercial construction adjacent to the present CBD, along with apartments and attached single-family homes.



### *Issues*

- The area has grown rapidly and will continue to do so.
- The town must decide if it wants to continue growing.
- If the town wants to continue growing, it must soon provide for more development capacity by: 1) expanding its land area, 2) conducting significant redevelopment and upzoning, or 3) some combination of the above, given the rapidly dwindling available infill development capacity.
- Development must be at a density sufficient to ensure efficient use of remaining developable acreage.

## **Determining Piedmont's Land Needs**

### **Future Population Growth**

As discussed at the beginning of the Plan, Piedmont's population is expected to grow by about 2400 over the next 20 years, somewhat more than the 1900 projected in the Year 2000 Comprehensive Plan. This updated plan projects a population of 8032 in the year 2026. Continuing rapid employment growth in the region and a consequently strong job market has continued to attract families wishing to migrate from the older suburban neighborhoods near Baltimore and Washington, DC. The town will need substantial acreage to accommodate the additional population that is expected there over the next 20 years.



## Residential Zoning in Piedmont

Table 3 below shows the development capacity of each zoning district within the town of Piedmont by zoning classification.

Zoning Ordinance	Description	Maximum Density DU/ac*	Actual Density Yield**
R-1	Single-Family Residential	4.4	3.3
R-2	Single-Family Residential	6.7	5.0
MR	Mixed Residential	13.6	10.2
TC	Town Center	17.3***	13.0

**Table 3 Development capacity in the town of Piedmont by zoning classification**

\* Derived by calculation which appears as appendix to this Growth Element

\*\* Assumed to be 75% of maximum density allowed per acre

\*\*\* Residential component only. Half of all TC acreage to be developed in commercial or other non-residential use.

### Assumptions

The Piedmont Planning Commission studied several growth scenarios related to development capacity within and beyond the current boundary of the town. In the end, the scenario discussed in this section was found to be the most logical development option for Piedmont and the surrounding growth area. In calculating the land area required by the future growth of Piedmont, this growth element of the comprehensive plan is based on the following assumptions:

- Ninety percent of the developable residential land within the present municipal boundaries will be consumed, with the remaining growth to occur on annexed land.
- Low-density sprawl will be avoided with all residential development occurring at roughly Priority Funding Area density (3.5 DU/acre) or higher.
- Roughly half of future development within the present boundaries of Piedmont will be in single-family detached homes with the rest distributed evenly between townhouses and apartments.
- Development beyond the current town will be of a more suburban nature, consisting of single-family detached homes. About three-quarters of the homes will be zoned in the town's R-1 residential category with density of 3.3 units per acre. (It is assumed that the average density of annexed land, if open space and environmentally-sensitive lands are dropped from consideration or higher-density land is included, will rest at or above the 3.5 unit per acre PFA threshold once annexed.)
- The rest of the annexed land will be zoned R-2 with a density of 5.0 units per acre.
- Average persons per household is 2.5.

In accordance with these assumptions, the Piedmont Comprehensive Plan's growth element establishes two components of future residential growth, along with the land demand and population that can be expected for each. One component is the land within the current town of Piedmont and the other is a more suburban model for that land which will one day be annexed.

These two patterns represent the current thinking by the town planning commission as well as others in the Piedmont area development community regarding the types and densities of residential development expected in coming years. They also represent a development pattern that most efficiently uses the land and lends the most protection to natural features.

The next two sections elaborate on this two-part development scenario and its impacts on the growth of Piedmont.

### Development Within the Existing Town

The following table shows the development capacity of each zoning district within the town of Piedmont. Acreage figures in Table 4 below represent an approximation of the developable acreage in each zoning category within the present town limits.

Zoning Classification	DU/acre	Acreage	Dwelling Units	Population (DU x 2.5)
R-1	3.3	24	80	200
R-2	5.0	10	50	125
MR	10.2	10	102	255
TC	13.0	10	130	325
<b>TOTALS</b>		54	362	905

**Table 4 Developable Acreage by Zoning Category**

Based on these calculations, the town of Piedmont can accommodate an additional 362 residential units (905 residents). Recent years have seen a significant drawdown in the supply of vacant developable land within Piedmont. The rapid development of this land is expected to continue over the time period of this plan. Some units will be built on vacant land, some on land planned for clearing and redevelopment and others on residential land that is presently underdeveloped.

Any significant development that occurs in the future will come on land that presently lies in the county, meaning that roughly 1500 persons will live on land that must be annexed.

### Development Beyond Present Town Limits

#### *Land Needs*

Since less than half of the projected 2026 population increase of 2395 can be accommodated within the present corporate limits of Piedmont, the majority will settle on land that must be annexed. As stated previously, the zoning and development scenario for these lands presently beyond the Piedmont corporate limits assumes that  $\frac{3}{4}$  of the development will be in the town's R-1 zoning category and  $\frac{1}{4}$  in R-2. Table 5 calculates the number of dwelling units that can be accommodated in the growth area at buildout, given that zoning mix.

Zoning Classification	Density/DU	Acreage	Dwelling Units	Population (DU x 2.5)
R-1	3.3*	120	396	990
R-2	5.0	40	200	500
<b>TOTAL</b>		160	596	1490

**Table 5 Number of Dwelling Units Accommodated at Build-out by Zoning**

\* To reach PFA density of 3.5 DU/acre when annexed, this land may have to be combined with other acreage in a higher classification.

In addition to the 160 acres needed for new homes, there will also be commercial development, parkland and possibly other services that must be accommodated.

### ***Recommended Direction of Growth***

Piedmont's most advantageous direction for future growth is to the south and west. There is ample vacant land in both directions, although land to the west of town is often hilly and impacted by steep slopes and rock outcroppings. Much of the acreage north of Route 240 west of town is prime agricultural land. There are two farms under Maryland Agricultural Land Preservation Foundation (MALPF) easements within a mile of Piedmont. Smallwood State Forest borders Piedmont to the north and limits its growth in that direction. A number of built-out residential subdivisions and strip commercial development along Route 240 act as a boundary to limit the town's growth to the east.



The south is therefore the most appropriate direction for expansion, and this plan recommends that the town's growth limit be established there. The owners of the 97-acre Hawkins Farm along Rte. 171 will probably petition for annexation soon, and there are several other large parcels along Piedmont's southern boundary that are likely development sites.

### **Recommended Future Growth Areas to Be Annexed**

Map II on the following page shows the recommended growth areas lying south of town. It totals roughly 550 acres, of which about 390 are developable. This area is easily accessible to major highways that are sufficient to accommodate the anticipated growth.

The following are the major parcels that are most likely to be annexed by Piedmont:

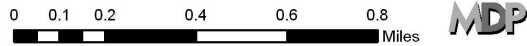
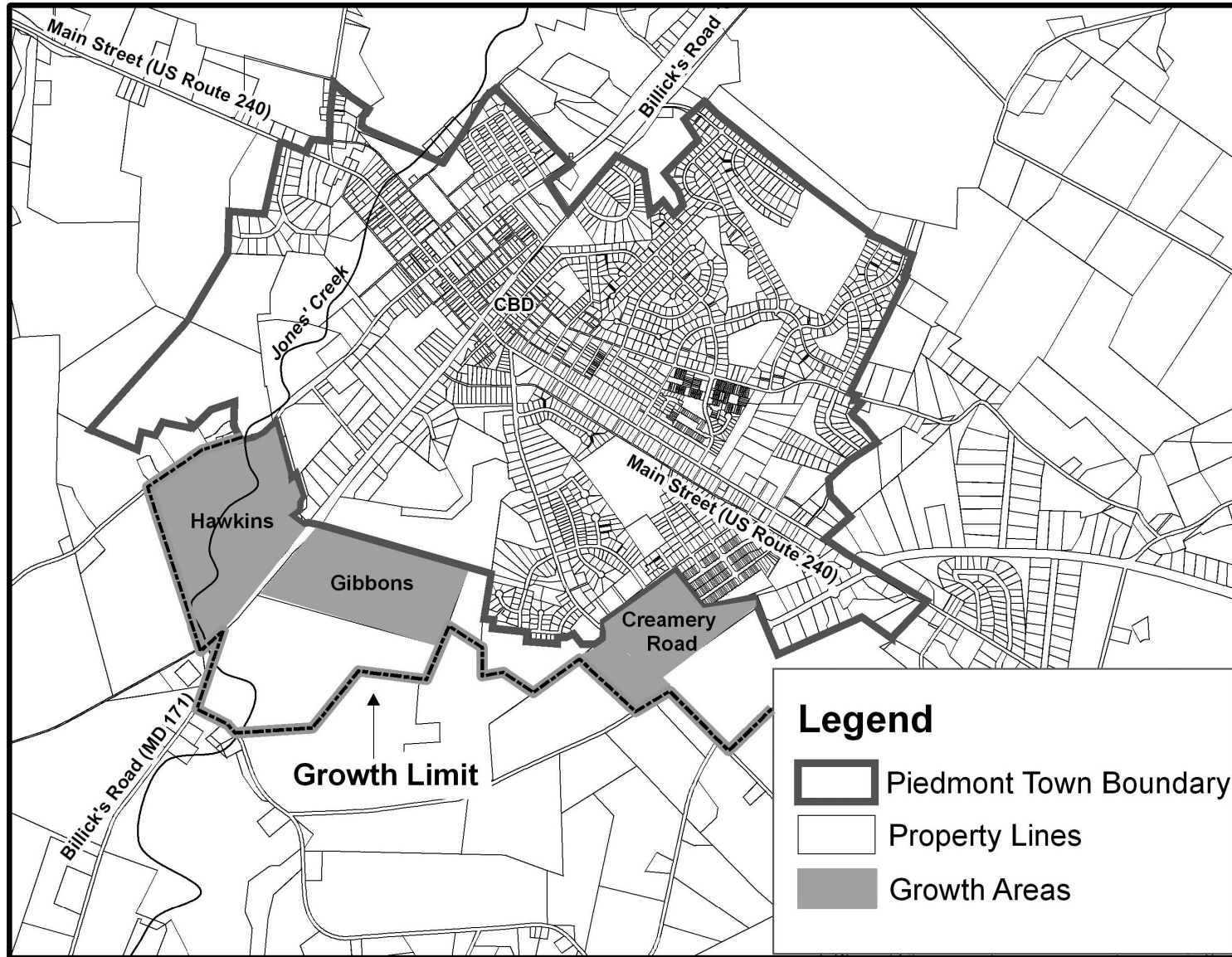
- Hawkins Farm: 97 acres
- Gibbons Tract: 105 acres
- Creamery Road Tracts (3): 84 acres total

### **Total Land Area Needed**

#### ***Impact of Town Growth and Development Policies on Future Land Development***

The long-term development policy for the town of Piedmont strongly embraces the eight Visions that comprise the State's Economic Growth, Resource Protection, and Planning Policy. Future development will be in accordance with the principles of Smart Growth. Consequently, the substantial residential development expected in the future should be consistent with the density requirements of the State's Priority Funding Areas and the principles of Smart Growth in general. This development will be planned in a manner that makes efficient use of the land. Runoff and other negative impacts will be minimized.

# Map II - Town of Piedmont and Growth Areas



### ***Total Additional Land Needs***

The population increase of 2395 expected within the timeframe of this comprehensive plan will require 958 additional dwelling units. A total additional land area of 214 acres is needed to accommodate this future residential growth. Of that, 54 acres, or almost 25 percent of the required land, will lie within the present town boundaries, and 160 acres, or 75 percent, is land to be annexed.

### **Growth's Impact on Public Services and Facilities**

This section projects the impacts that the roughly 2400-person increase will have on public services and facilities in and around the town of Piedmont. It should be noted that important related material also appears in other elements of this comprehensive plan, and that the entire document must be reviewed in order to obtain a clear and complete picture.

#### **Public Schools**

The growth of Piedmont over coming years will have major impacts on two schools near the town. These are Carlisle Elementary and the Mason Middle School. Calculating the student load the new construction will generate and comparing it to the State Rated Capacity of each school will determine these impacts. The student yield calculations below come from the Piedmont County Board of Education and appear in the county's Educational Facilities Master Plan for 2005:

- Elementary: 0.215 students per DU (dwelling unit)
- Middle: 0.107 students per DU
- High: 0.154 students per DU
- Total: 0.476 students per DU

The total student yield from the 958 units projected to be approved and built over the next 20 years is thus 456 ( $958 \times 0.476$ ). The next step is to calculate the number of students from each level (elementary, middle and high) that can be expected during the life of this plan. This is done under the assumption that build out will occur in its entirety over the next ten years with the same number of units and students added each year.

Annual additional student load by school

#### ***Carlisle Elementary***

$958 \text{ units} \times 0.215 \text{ elementary school factor} = 206 \text{ students, or } 21 \text{ per year}$

#### ***Mason Middle School***

$958 \times 0.107 = 102 \text{ students, or } 10 \text{ per year}$

Carlisle Elementary (State Rated Capacity: 475)

The school is roughly at capacity, with 481 students enrolled. Enrollment from elsewhere in its catchment area will keep it at that level for the foreseeable future. In addition, a steady annual increase of 21 students from Piedmont will increase Carlisle Elementary School's enrollment to 586 within five years, placing it 23.5% over capacity at that point. Adjusting school district lines would be of limited use since nearby elementary schools are over capacity and will remain so into the future. The alternative is adding portable classrooms or renovation and expansion of the building, which was constructed in 1923. The campus must also be expanded to bring it up to current state standards.

Mason Middle School (State Rated Capacity: 975)

Mason Middle School is presently utilized below capacity, and its annual enrollment over the next ten years will be about 80 percent of its State Rated Capacity of 975. The roughly 100 students that could be added over the next ten years from development in Piedmont will not overtax the school.

### **Libraries**

Piedmont presently has no town library branch, and patrons must use the North Piedmont County Library. However, the roughly 2,400-person increase in population will boost the town's population to about 8000 and could generate more local interest in establishing a branch library within the town itself. An American Library Association standard suggests 1,000 square feet of library space for each 10,000 increase in population. By that standard, Piedmont may be nearing the point where a small local library outlet, probably as part of a larger building, should be considered.

Based on a staffing standard used in Baltimore County, there should be one library employee per roughly 2,000 persons. Under this standard, the town's present population and projected growth of 2,400 would generate a need for four full-time county library employees to staff a library facility in Piedmont.

### **Public Safety**

The roughly 2,400 additional people projected in Piedmont over the next 20 years will place additional demands on local public safety and police resources. A national standard used by the International Association of Chiefs of Police and other agencies when calculating needs for police is 2.6 police officers for every 1,000 persons of population. Based on that standard, six additional police officers would be needed to provide full time protection in the town.

### **Water and Sewerage Facilities**

#### ***Current Inventory***

A detailed inventory of the existing water and sewerage facilities and available drinking water supply sources, plus various other descriptive materials and information pertaining to each, is contained in the Piedmont County Water and Sewerage Plan and this comprehensive plan's community facilities and water resources elements. However, the county water and sewerage plan has not been updated for three years and does not fully reflect the amount or location of growth anticipated in the municipal growth element. The existing sewage treatment plant capacity of 0.6 mgd will be funded by the State for an upgrade to enhanced nutrient removal (ENR) in the next two years. The town-owned Jones Creek Sewage Treatment Plant currently serves roughly 5500 people with an average daily demand of 550,000 gpd. Additional demand from commercial development creates a total average daily demand of about 575,000 gpd. Since the plant is nearly at capacity, any significant new growth will require additional treatment capacity.

Water filtration plant capacity, storage and distribution facility capacities and plans, and source water availability information and plans are also contained in the Piedmont County Water and Sewerage Plan and this comprehensive plan's community facilities and water resources elements. Piedmont's water supply is treated at the town-owned Harkins Waterworks. The plant is supplied by four municipal wells, which are adequate to accommodate about one-half of the additional 260,000 gpd demand that can be expected when the projected dwelling units and commercial developments are built out.

### ***Demands created by projected growth***

The projected growth of the town will have significant effects on the capacity of both water and sewage treatment and distribution/collection facilities. It is assumed that both the sewage generation and water needs of each household are 250 gpd, as per standards used by the Maryland Department of the Environment.

Given that 250 gpd measure, total demand for both water and sewage treatment generated over the next ten years by the town will require at least another 260,000 gpd (.260 mgd). This includes roughly 240,000 gpd for the additional households and another 20,000 gpd for the additional commercial activity expected to occur as the result of this residential growth.

Upgrading the existing sewage treatment plant capacity to enhanced nutrient removal (ENR) is required by the plant's State discharge permit. This upgrade will be funded by the State in the next two years. However, the State will not fund any expansion in treatment capacity.

This plant expansion will require a new State discharge permit entailing an evaluation of the assimilative capacity of the water body where the plant discharges and specifying what discharge limitations may be imposed by the regulatory Total Maximum Daily Load (TMDL). If the plant cannot be expanded, the town will either have to explore alternative means for discharging its wastewater (e.g., spray irrigation), or find ways to offset (reduce) existing nutrient loading in the water body from other sources such as urban and agricultural stormwater runoff or septic system upgrades. If such measures cannot be or are not implemented, the planned growth in the town may be halted.

In addition, service to the new areas will require that new collection systems be constructed and older conveyance facilities be evaluated to determine if they need to be upgraded to handle the increased flows.

Any changes in plans for these facilities as contained in the current county water and sewerage plan will require an update or amendment of that plan. This step will require coordination and cooperation with the county, which is responsible for adopting that plan and the State, which must approve the plan.

### ***Water Demands Created by Projected Growth***

Because finding new water sources of acceptable quality is difficult and time-consuming in the Piedmont area, the town must immediately begin seeking new sources of water to avoid jeopardizing the latter half of the buildout. The town may have to hire consultants to evaluate means of increasing its reliable water supply, including conservation, leak reduction, additional sources of supply, and regionalization. It could require private developers to provide water supply as a condition of development. Regulations may require that recharge areas for new groundwater sources be protected from development; such protected areas would have to be identified in the municipal growth element.

In addition, service to new areas will require that new collection systems be constructed and that older conveyance facilities be evaluated to determine if they can handle the increased flows.

Any changes in plans for these facilities as contained in the current water and sewerage plan will require the update or amendment of that plan. This step will require coordination and cooperation with the county.

## **Stormwater Management**

Most of the new development will occur on vacant land presently lying south of the town. Because Jones Creek runs north to south through this part of the county, and several smaller streams also cross the area, there are potentially significant adverse impacts on water quality from development at the scale envisioned. Because adverse impacts to streams start to appear with as little as five percent impervious cover, the conversion of the expanded development area from agriculture and forest to residential subdivision will likely affect the quality and flow characteristics of the streams in the watershed.

To mitigate this impact, meeting minimum stormwater management requirements may not be sufficient. In addition, if offsets are needed to permit sewage treatment plant expansion, extraordinary stormwater management measures, including the creation of a stormwater management utility, should be considered.

Additionally, the significant redevelopment that is planned adjacent to the central business district must comply with the 20 percent impervious surface reduction requirements of State stormwater management regulations. This may require the consideration of off-site mitigation given the limited square footage available on site in this redevelopment area. New residential development is also anticipated in the northern part of the town bordering the Smallwood State Forest. Stormwater runoff from this area of the town presents a threat to the forest, its wildlife habitats, and also to the tributaries that feed into Jones Creek flowing south.

Finding the best way to adequately address all of these water quality issues may indicate the need to evaluate the entire watershed or sub-watershed in which the town lies. This would require the cooperation of the county and perhaps other jurisdictions as well.

Each major development presents challenges to the protection of water quality in and around Piedmont. The sensitive areas and water resources elements address overall policies and recommendations pertaining to water quality and stormwater management. However, anticipated growth necessitates specific efforts along Jones Creek south of the town:

- Stabilization of the stream bank along the west side of Jones Creek in areas where residential subdivision is anticipated; and
- Reforestation and replanting of the buffers along the eastern side of the creek, roughly half mile south of the town, to meet off-site stormwater mitigation requirements created by redevelopment of the West Downtown Redevelopment Project.

## **Recreation**

A State standard recommends 30 acres of parkland per 1,000 persons. The town of Piedmont must own half of it, in this case. The 2,400 additional persons expected to settle in the town will generate a need for roughly 60 acres of parkland, of which the town must own 30.

## **Financing of Infrastructure Expansions Needed**

### **Background**

The future growth of Piedmont will require significant infrastructure enhancements that would be financed in a number of ways. The major improvements required are:

- Modernized and expanded Carlisle Elementary School;
- Expanded Piedmont sewage treatment plant;
- New water sources and water treatment capacity;



- Thirty acres of municipally-owned parkland; and
- North Street Extension to accommodate additional development anticipated in that area.

### **Financing responsibilities**

It is recommended that the town adopt a policy stating that owners/builders of new developments are required to contribute toward the costs of serving the infrastructure needs of the extra population their projects will produce. For lands presently lying in the county, such commitments should be made part of the annexation agreements.

Developers could provide assistance in the following manner:

- By donating acreage adjacent to the existing Carlisle Elementary School campus as well as expanding the playground and athletic field;
- By donating either land or fee-in-lieu for parks necessitated by new growth; and
- Funding local staff and/ or consultants (if it can be assured that they are objective and independent).

Piedmont will need road and sewage treatment plant improvements. State and federal financial assistance should be investigated to help pay for the necessary improvements. The town should request State monies to help pay for the sewage treatment plant. Presently, the municipality's bond rating is AAA and it has sufficient borrowing authority to accommodate the North Street Extension as well as other thoroughfare improvements and a portion of the sewage treatment plant expansion.

## **Piedmont's Rural Buffer**

### **Location**

The town of Piedmont has a number of features that could combine to form a rural buffer extending most of the way around its municipal boundary. Some or all of this possible buffer area may be used to protect groundwater recharge area. We recommend a buffer that extends westward from Route 171 in the north, continues through the Smallwood State Forest, south across Route 240 and south/southeasterly to Route 171 south. A narrower strip of land should border the town to the east, preserving its developed edge and protecting it from heavy development pressures in that area.

### **Implementation**

The lands surrounding the present town limits are often environmentally sensitive. These include the Smallwood State Forest to the north and the Jones Creek floodplain lying to the south. Measures for protecting areas such as these are addressed elsewhere in this plan, particularly in the sensitive areas element.

The town, using Program Open Space (POS) or other funding programs, should aggressively pursue the reservation and creation of its buffer, turning at least some of this area into parkland after purchase. This is particularly important for the eastern neighborhoods because it will preserve the eastern developed edge of town, protect its residential neighborhoods from the impacts of development in the area, and also add needed recreational area.

Once annexed, the Jones Creek floodplain should be zoned in the town's Open Space (OS) zoning classification. Since much of the land to the northwest is agricultural, the town and county should work to encourage expansion of agricultural preservation areas that both

buffer the town and protect agricultural resources. The town and county should work jointly on procedures whereby each notifies the other of developments that border each. This may require amendments to the respective jurisdictions' subdivision or other development regulations.

## **Burdens on Municipally Provided Services and Infrastructure Lying Beyond Proposed Municipal Growth Area**

The town of Piedmont has no major infrastructure lying in the county. However, there are several joint town/County efforts in the management of stormwater runoff. These will be affected by the over 950 additional residential units expected during the time period covered by this plan. The joint projects include stream bank restoration and planting efforts resulting from town-initiated off-site mitigation efforts done in connection with earlier revitalization projects. These efforts will be expanded in the coming downtown redevelopment.

The town and county should work jointly to implement the best management practices discussed elsewhere in this plan in order to protect the water quality and environmental features of Jones Creek and its watershed area.

## **Protection of Sensitive Areas In and Near the Town**

### **Sensitivity Area Inventory**

There are a number of sensitive area sites in and around Piedmont. Jones Creek runs north to south through the town, intersecting with the Potomac River to the south. There are several smaller streams also running roughly north to south through the present incorporated town and the future growth areas along its southern boundary. There are about 100 acres of floodplain located along Jones Creek to the south of town and undeveloped stream valley along both sides of the creek. Much of Smallwood State Forest borders Piedmont to the north along Route 171. Much of the forest lies at the bottom of hilly terrain leading downward from the higher ground in the northern half of Piedmont, and it has experienced increasing runoff from residential subdivision along North Street. There are steeply sloped areas lying at various locations throughout the town. A great deal of prime agricultural land lies immediately west of town.

### **Addressing Protection**

The protection of these areas is primarily addressed in this comprehensive plan's sensitive areas, water resources and implementation elements. In order to protect these resources, the town and county should both adhere to the recommendations as discussed in those parts of this plan as well as to other applicable planning and development-related ordinances.

However, the floodplain along Jones Creek merits separate consideration given special conditions that apply there. Most of that portion of the floodplain lying in the county will be brought into the town as part of the impending annexation of the Hawkins Farm.

Accordingly, the town must ensure that the owner/developer agrees to take the necessary precautions to protect the floodplain in the time period before the town's ordinances take effect.

The annexation agreement for this property should contain, at a minimum, the following protective stipulations:

- There shall be no construction or alteration in the Jones Creek flood plain area that results in a raising of floodwaters downstream beyond the level stipulated in the Flood Control Ordinance of the town of Piedmont; and
- Until appropriate municipal ordinances take full effect, all existing flood-related provisions and restrictions on the subject land shall remain in force. There shall be no attempt by the owner/developer to either alter them or gain permission to do so.

## **The Relationship of Long-Term Development Policy to a Vision of the Municipal Corporation's Future Character**

The overall vision of Piedmont's growth and development in coming decades is that of a relatively rapidly growing, primarily residential community that will continue to be heavily influenced by development pressures extending outward from the Baltimore-Washington Metropolitan Area. The long-term development policy envisions an orderly expansion of the town to the south. It also recommends that future development in the southern reaches be consistent with density criteria for Priority Funding Areas in order to reduce sprawl development, maintain eligibility for state funding where necessary and ensure the efficient use of this land.

The primary concerns for the future are having sufficient infrastructure available to accommodate this growth, protecting the environment and providing a desirable quality of life for residents of the town.

This comprehensive plan outlines the types and scale of infrastructure and other impacts that can be expected from the 2400 persons projected to move to Piedmont over the next 20 years. This municipal growth element provides the background against which recommendations for the future development of the town are generated.



# Appendix A

## Scenarios

As discussed at the beginning of the plan, Piedmont’s population is expected to grow by about 2,400 over the next 20 years, somewhat more than the 1,900 projected in the comprehensive plan adopted in 2000. This plan projects a population of 8,032 in the year 2026. Continuing rapid employment growth in the region and a consequently strong job market have continued to exert an attraction to families wishing to migrate from the older suburban neighborhoods near Baltimore and Washington, DC.

Several growth scenarios were studied by the Piedmont Planning Commission related to development capacity within the town and its current growth boundary.

1. Capacity inside the current town boundary based on current zoning and capacity in the growth area based on existing county zoning.
2. Capacity inside the current town boundary based on current zoning and capacity in the growth area if the entire area was annexed into Piedmont and zoned R1, a low density residential zoning district that achieves approximately 3.3 DU/acre.
3. Capacity inside the current town boundary based on current zoning and capacity in the growth area if  $\frac{3}{4}$  of the area was annexed into Piedmont and zoned R1, a low/medium density residential zoning district that achieves approximately 3.3 DU/acre, and  $\frac{1}{4}$  was zoned R-2, a medium density district that allows 5.0 units per acre.
4. Capacity inside the current town boundary based on current zoning and capacity in the growth area if the entire area was annexed into Piedmont and zoned R3, a high density residential zoning district that achieves approximately 8.5 DU/acre.

The following chart summarizes the four scenarios. For the purposes of the Comprehensive Plan, Scenario 3 (Medium Density) was chosen because it best fit with the town’s guiding principles for future growth and development in the town and its growth area.

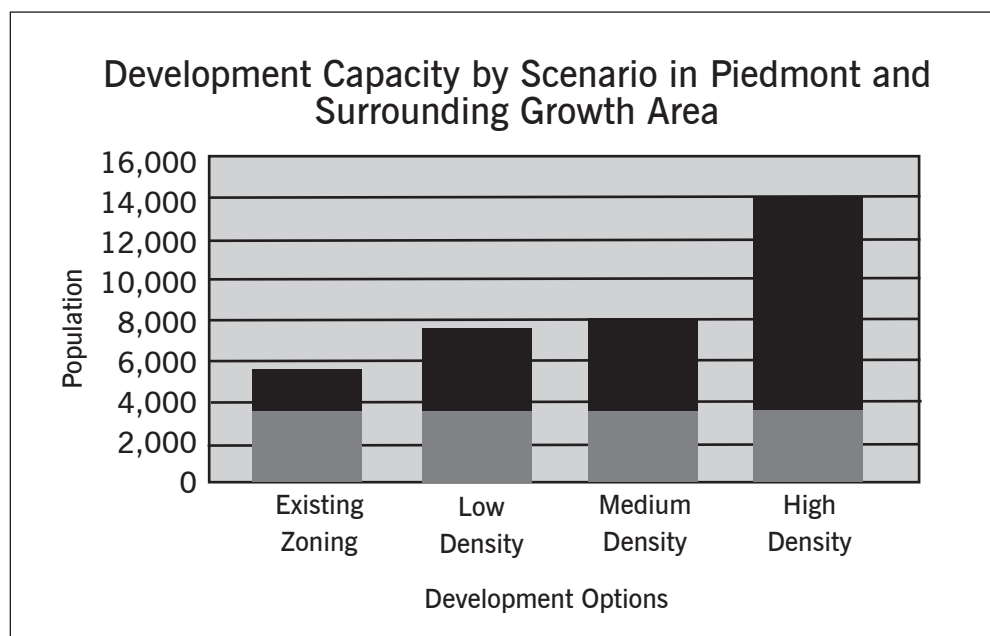


Chart A-1 Development Capacity by Scenario in Piedmont and Surrounding Growth Area



# Appendix B

## Methodology (excerpt of the Final Report of the Development Capacity Task Force, 2004)

Land supply (i.e., capacity) is calculated using the parcel-specific information listed in the *Final Report of the Development Capacity Task Force*. In this analysis, a number of assumptions and formulas are used to determine the number of housing units that could fit on each parcel. Figure B-1 from the final report illustrates the types of land supply that generally exist in the analysis.

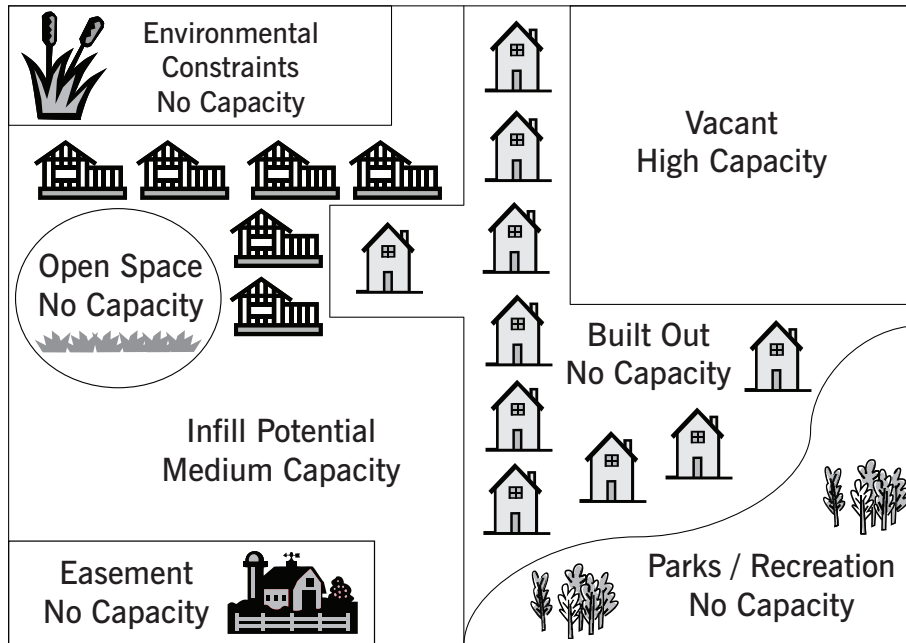


Figure B-1 – Types of Land Supply

First, undevelopable parcels are removed from consideration for additional development capacity. Several sources of information are used to flag parcels as undevelopable including:

- **Protected Lands:** agricultural easements, parks, Federal lands, homeowners’ associations’ lands and other open spaces, and, in some cases, agricultural remainder parcels.
- **Environmental Features:** wetlands.
- **Tax-exempt Parcels:** These include schools, churches, cemeteries, etc. Although these parcels do occasionally get new development, we assume that more often than not these areas will be ruled out for new development. Figure B-1 illustrates examples of unbuildable parcels.

Second, it is assumed that parcels that are built-out do not have any additional development capacity. These are parcels that are improved, and are too small to receive any additional residential units.

For vacant land (unimproved parcels), the acreage of the parcel times the density yield will result in the development capacity of the parcel. The density yields should build in site-level constraints such as open space and road requirements. Figure B-2 illustrates this portion of the model.

## Development Capacity

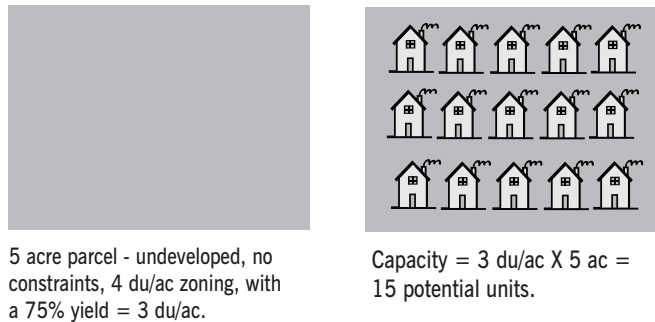


Figure B-2 – Capacity on Undeveloped Land

MDP also has a methodology to estimate development capacity on underdeveloped parcels. These are parcels that are developed (improvement value greater than \$10,000) and are five acres or smaller. Basically, if a parcel is improved and less than five acres, the Growth Simulation Model does a query that asks if the yield of the zoning district would allow additional units to be placed on the parcel. It assumes the current improvement will count as one lot in this calculation. It also assumes that only half of the development that could possibly fit on the parcel will actually get built. For example, if there is a five acre improved parcel in a zoning district that has a yield of one dwelling unit per acre, intuitively there would be room for four additional units on this parcel. In order to be more realistic, the MDP model reduces the capacity on this parcel to two additional units. When the number divided in half does not yield whole number, the model will round the quotient down to the next whole number. This methodology is illustrated in Figure B-3 below.

### Underutilized Parcels



5 acre parcel - 1 house, no constraints, 4 du/ac zoning, with a 75% yield = 3 du/ac.



Capacity = ((3 du/ac X (5 ac - .33 ac for the existing house)) X .5 infill factor = 7.005 infill du, rounded down = 7 potential new units.

### Lot Size Floor for Underutilized Parcels



1 house, no constraints, 4 du/ac zoning, with a 75% yield = 3 du/ac, or .33 acres lot min.



Minimum lot size needed to add an additional house = .825 ac.

(.33 ac min. lot size X 1.5 infill rule) + .33 existing house = .825.

Figure B-3 – Capacity on Underutilized Parcels



# Appendix C

Summary Table for Development Capacity Analysis Town of Piedmont

Result	Process	Acres	Number of Parcels	Capacity
Total Acres in Par- cels and Lots		acres		
	Subtract land zoned for nonresidential use (commercial, industrial)	acres		
Residentially Zoned Acres		acres		
	Subtract tax exempt land (tax exempt code)	acres		
	Subtract protected lands and environ- mentally sensitive parcels (ag easements, wetlands, HOA land, etc.)	acres		
	Subtract other parcels without capacity (built out areas, etc.)	acres		
Acres and Parcels with Capacity	Total capacity	acres		
Capacity Inside PFA		acres		
Capacity Outside PFA				
<b>Subsets of the Analysis of Interest (these are not additive)</b>				
Acres and Parcels with Capacity a Associated with Un- derdeveloped Land.	Improved Parcels (>\$10,000), less than 5 acres.	Acres		
Acres and Parcels Associated with Small Parcels.	Parcels <2 acres in size (improved or unimproved)	acres		
Acres and Parcels Associated with Larger, Undeveloped Parcels.	Includes unimproved parcels, greater than 2 acres with capacity and improved parcels greater than 5 acres with capacity.	Acres		



# Appendix D

## Basic Requirements for Comprehensive Plans under Article 66B of the Annotated Code of Maryland

Article 66B of the Annotated Code of Maryland, also known as the *Planning and Zoning Enabling Act*, is Maryland's preeminent planning law, providing local jurisdictions authority over local land use and growth decisions. This law includes eight Visions for economic growth and resource protection. Local jurisdictions are required by Article 66B to implement the Visions, and to address them in their comprehensive plans. These Visions are:

1. Development is concentrated in suitable areas;
2. Sensitive areas are protected;
3. In rural areas, growth is directed to existing population centers and resource areas are protected;
4. Stewardship of the Chesapeake Bay and the land is a universal ethic;
5. Conservation of resources, including a reduction in resource consumption, is practiced;
6. To assure the achievement of items (1) through (5) of this section, economic growth is encouraged and regulatory mechanisms are streamlined;
7. Adequate public facilities and infrastructure under the control of the county or municipal corporation are available or planned in areas where growth is to occur; and
8. Funding mechanisms are addressed to achieve these Visions.

The Visions should be addressed within the plan elements that are required to be included in a jurisdiction's comprehensive plan. Below is a list of the elements required under the law.

- Land use element
- Transportation element
- Community facilities element
- Mineral resources plan element
- Implementation element
- Sensitive areas element
- Municipal growth element (*HB 1141, 2006*)
- Water resources element (*HB 1141, 2006*)
- Priority preservation area element (*HB 2, 2006*)
- Workforce housing element (*HB 1160, 2006*)

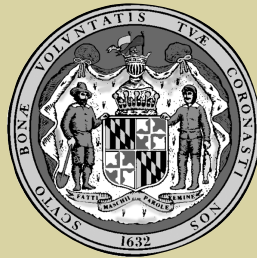


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