

May 6, 2009
Planning Commission Memo to Annapolis City Council

Attachment
(38 pages)

Revisions to page 26 of the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission. Includes revisions to Fig.3-6 ‘West Annapolis Opportunity Area’.

West Annapolis Opportunity Area

- ▶ The West Annapolis Opportunity Area encompasses the intersection of Rowe Boulevard and Taylor Avenue and the commercial sections of West Annapolis along Ridgely and Melvin. It is a major gateway into Annapolis with good highway and transit accessibility to U.S. Route 50, MD Route 450, and downtown. ~~The Plan recommends that the area shown in Figure 3-6 be redeveloped in an Urban Center Low character. Over time, this plan envisions the consolidation of parcels and the intensification of land use primarily for professional office space and neighborhood retail. Residential development would be allowed in mid-rise buildings (not exceeding four stories). Parking should be located in structures to allow the most efficient use of space for commercial activity.~~
- ▶ ~~Two portions of this Opportunity Area are designated “Special Use.” These are public uses sites and there is one principal guideline for their development and/or redevelopment: the future use should bring substantial recognition and prestige to the City of Annapolis while conferring direct benefits to the City’s residents.~~
- ▶ ~~The Plan recommends that the aesthetic value of the area as a gateway into Annapolis be protected. In particular the protection of scenic viewsheds into downtown is desirable.~~
- ▶ ~~The Transportation chapter of this Plan recommends an engineering feasibility study to address the goals of alleviating peak period traffic congestion, handling Route 50 overflow traffic, improving transit efficiency, and enhancing access to and circulation within West Annapolis.~~
- ▶ The purpose of designating the West Annapolis Opportunity Area is to:
 - Acknowledge the development potential of this area, anticipate likely development pressure, and articulate the desired future character of the West Annapolis “Village”.
 - Set the stage for detailed area planning that allows more stakeholder and community input and more thorough consideration of the issues important to the area’s future character and economic viability.
 - Acknowledge that Rowe Boulevard is a primary gateway and entry point into Annapolis that defines visitors’ first impression of the city. Rowe Boulevard has more of a ceremonial character than other gateways, and future development along Rowe should reflect and enhance the character of this corridor.
 - Acknowledge that careful planning is needed to ensure the sensitive transition between the quiet neighborhoods of Wardour and West Annapolis, the neighborhood-scale commercial areas abutting the residential neighborhoods, and the more massive office buildings on the blocks closest to Rowe Boulevard.
 - Acknowledge that the widening of Rowe Boulevard created an awkward intersection at Forbes and Melvin and created very narrow lots between Forbes and Rowe. A reconfiguration of the intersection and parcels could benefit the function of the area as a whole.
 - Acknowledge that the current zoning of the area may not enact the desired character for West Annapolis and should be reviewed for its appropriateness. Review of, and change to zoning could be done as part of an area planning effort.

- Facilitate the comprehensive treatment of features important to the area’s future character and identity, circulation and economic viability: pedestrian facilities, in particular those that enhance pedestrian safety; a parking strategy; signage; streetscape improvements; road alignment; access management; transit service; and connections to the bicycle network.
- Acknowledge the regionally significant role of Rowe Blvd. and Taylor Avenue/MD450 as an overflow route to US 50. A balance must be found between regional transportation needs and local circulation and mobility.

Recommendations for the West Annapolis Opportunity Area are:

- ▶ The area shown in figure 3-6 should transition over time to the Urban Center Low character to enhance the “Village” quality and function of West Annapolis. In West Annapolis, the Urban Center Low designation directs redevelopment to achieve a mix of retail, offices, restaurants, and housing, and preserve essential neighborhood services.
- ▶ As part of the redevelopment of the opportunity area, a park should be created to serve as a community gathering place that creates a recognizable focal point for the West Annapolis Village. Such a park could encompass both “green” and hardscape features.
- ▶ The form of development - articulated by building massing and height, site coverage, relationship of buildings to streets, building setbacks, architectural detailing - should enhance the urban “village” character. New development along Rowe should be designed within the context of Rowe Boulevard being the ceremonial gateway into Annapolis, along which other prominent buildings are located– the District Court building, DNR building, and State Archives building. As such, higher buildings along Rowe may be appropriate.
- ▶ Views and sight lines should be taken into consideration in the redevelopment of this area, in particular the protection of scenic viewsheds into downtown. Environmental features in the area should be preserved, with special attention to preserving mature trees.
- ▶ Two portions of the West Annapolis Opportunity Area are designated “Special Use.” These are public use sites and there is one principal guideline for their development and/or redevelopment: the future use should bring substantial recognition and prestige to the City of Annapolis while conferring direct benefits to the City’s residents.
- ▶ Urban design amenities (pedestrian facilities, planting, signage, streetscape treatments, public spaces) should be implemented throughout the opportunity area and serve to create cohesion and enhance the West Annapolis Village as a recognizable “place”. Measures to enhance pedestrian safety should be implemented.
- ▶ Parking should be located in structures or underground to allow the most efficient use of space for commercial activity.
- ▶ The Transportation chapter of this Plan recommends an engineering feasibility study to address the goals of alleviating peak period traffic congestion, handling Route 50 overflow traffic, improving transit efficiency, and enhancing access to and circulation within West Annapolis.

Revisions to page 27 of the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission. Includes revisions to Fig. 3-7 ‘Bay Ridge Opportunity Area’.

Bay Ridge Opportunity Area

~~The Plan recommends the redevelopment of the properties south of Bay Ridge Road roughly between Forest Drive and Edgewood Road into a mix of commercial and residential buildings and permanent open spaces. As shown on Figure 3-7, this Plan recommends the extension of Edgewood Road and Georgetown Road and the transformation of Bay Ridge Road into an attractive urban activity center and transit/pedestrian friendly environment. The focus will be on retail and office uses, although some residential development should be included. A green space buffer is recommended between the development and the residential area to the south.~~

The Bay Ridge Opportunity Area encompasses the south side of Bay Ridge Road between Hillsmere Drive and the city’s eastern boundary. The purpose of designating the Bay Ridge Opportunity Area is to:

- Acknowledge the development potential of this area and articulate the desired future character;
- Acknowledge that the opportunity area is part of an already existent commercial center utilized by the communities on this portion of the Annapolis Neck peninsula that could provide for more of the community’s commercial needs;
- Acknowledge that this stretch of Bay Ridge Road is a busy, 4-lane street that effectively divides the south side of the street from the north and presents challenges for implementing bicycle and pedestrian features;
- Set the stage for more detailed area planning that allows more stakeholder input and more thorough consideration of issues important to the area’s circulation and character.

Recommendations for the Bay Ridge Opportunity Area are:

- The area shown in Figure 3-7 should transition over time to the Urban Center Low character. The focus will be on retail and office uses, although some residential development should be included.
- Permanent open space should be preserved as part of new development. In particular, a green space buffer is recommended between ~~the~~ new development and the residential area to the south and this should be implemented through the site design review process.
- Extend Edgewood Road and Georgetown Road south across Bay Ridge Road, and connect them within the opportunity area. These road connections should allow circulation and access within the opportunity area and onto adjacent streets. A pedestrian and bicycle connection to Old Annapolis Neck Road is recommended, possibly utilizing an existing right of way corridor.
- Features to create an attractive urban activity center ~~that is~~ and transit-, bike-, and pedestrian- friendly environment should be implemented, including consistent streetscape treatments and comfortable sidewalks.

Revisions to page 28 of the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission. Includes revisions to Fig. 3-8 ‘Forest Drive Opportunity Area’.

Forest Drive Opportunity Area

The proposal for the Forest Drive Opportunity Area should involve an integrated and coordinated mixed use development that prioritizes maximum land conservation. Much of the Opportunity Area is proposed to maintain its natural and forested character. Approximately ~~80~~ 75 acres of the 180-acre Katherine Property, which is in this Opportunity Area, ~~is already~~ will be preserved by a conservation easement required as part of the annexation of this property. Development of the Katherine Property is also subject to a Master Plan to be reviewed and approved by the City, also a requirement of its annexation approval.

There are three goals for development within the Forest Drive Opportunity area as a whole. These goals should be incorporated into the Master Plan for the Katherine Property. The three goals are:

- The more intense development should be closest to Forest Drive. ~~The portion area~~ closest to Forest Drive is recommended for an Urban Center Low land use character ~~and development of office space.~~ To preserve the natural character of the remainder of the area, clustered residential development with extensive open space requirements is recommended. Residential clusters could be sufficiently intense to allow for housing that could be served efficiently with public transit and other City services, while maintaining the natural areas.
- A mix of uses is recommended for new development. Incorporating employment uses is an important part of this recommendation.
- Connections to adjacent areas should be incorporated. ~~The area plan for this Opportunity Area provides that important~~ Road connections should be made so as to contribute to relief from traffic congestion on Forest Drive and increase connectivity to adjacent areas. Gemini Road, for example, should be extended across Forest Drive and should then run parallel to Forest Drive and provide inter-parcel connections and redundancy in the street network. The conceptual alignment of the Forest Drive Relief Road (see Ch. 4 - *Transportation*) could also connect to Forest Drive within the Forest Drive Opportunity Area.

The Forest Drive Opportunity Area has two particularly unique characteristics – substantial acreage and unified ownership. These factors combine to provide an excellent opportunity to fulfill many of the objectives of the Comprehensive Plan. The development approved in this Opportunity Area should be aimed at creating a mixed-use neighborhood with retail and offices uses; providing a variety of housing opportunities; helping to address the traffic concerns in the area; and setting forth a model for sustainable development.

Revisions to the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission. Includes revisions to Fig. 3-9 ‘Outer West Street Opportunity Area’.

Outer West Street Opportunity Area

The ~~main~~ areas that comprise the Outer West Opportunity Area are shown in color on Figure 3-9. This Plan recommends a transformation of the area, from an automobile oriented suburban commercial pattern to an urban character focused on residential development and commercial uses. It is important to note that the Plan also recommends the land presently in industrial use remain intact and economically viable. These areas are shown as “industrial” on Figure 3-9. Several other elements of this Opportunity Area plan are noted below:

- ▶ Urban mixed use redevelopment is targeted to strategic points along the West Street Corridor and near the Annapolis Towne Centre at Parole. New structures may include residential and/or office space on upper floors. Alternatively, redevelopment might integrate fully-residential structures with nearby non-residential structures.
- ▶ Buildings should front directly onto West Street with little or no front yard setbacks and little interruption of facades. At the same time, use of extensive buffer yards and design requirements (including transparency, differentiation and sky exposure angle) are recommended to assist in creating strong urban form while also remaining sensitive to the impact on surrounding neighborhoods.
- ▶ Buildings along the east side of Old Solomon’s Road are anticipated to serve as a transitional region between the Parole Neighborhood and the more intense development to the west. That character is largely in existence currently.
- ▶ A new park should be created to provide a recognizable focal point for this corridor and provide open space and a gathering place to support new residences and the adjacent neighborhoods. A park is critical to the idea of “place-making” and transforming the area into an urban corridor over time. Integrating transit with the park encourages its use as an active urban space. The exact size and location of the park should be determined as part of more detailed area redevelopment planning, however it should front on West Street. An urban park concept incorporated into a multi-level building could be considered.
- ▶ The Plan recommends transition of existing adjacent industrial areas into “clean industry parks” specifically with a focus on environmentally responsible practices aimed at reducing the carbon footprint and impact on water quality.
- ▶ The Plan calls for the realignment of Admiral Drive and Chinquapin Round Road to form a full intersection and important local street connections to improve traffic flow and safety. (See Policy 4, Ch. 4 - Transportation).
- ▶ Construction of a Multi-Modal Transportation Center is desirable, perhaps in the vicinity of the intersection of Old Solomons Island Road and West Street. (See Policy 3, Ch. 4 - Transportation).
- ▶ Noting that West Street was the historic entrance to the city, demarcate this “Gateway” into the city with streetscape improvements ~~(such as street trees and street lights)~~ and other design features to convey arrival and welcome. It is recommended that the street transition to an urban boulevard in character with widened sidewalks, enhanced pedestrian crossings, street trees, transit features, and street lights.
- ▶ The Plan recommends pedestrian, bicycle and transit-friendly design in general, and a major pedestrian-bicycle connection over MD Route 2 between Annapolis Towne Centre at Parole and the Opportunity Area, perhaps using Old Forest Drive.

- ▶ In light of the changing character of this area, a sector study is recommended. ~~for the area bounded by Chinguapin Round Road, Old Forest Drive, Old Solomon's, and West Street, and encompassing the Parole Neighborhood.~~ A sector study should complement the detailed area planning called for in this chapter's Policy 1 and should include the entire Outer West Opportunity Area and the Parole Neighborhood. A sector study allows greater participation by affected residents and businesses in planning for the future of this sector of Annapolis and more thoroughly responds to current conditions and forces of change. In addition to the recommendations noted above and shown in Figure 3-9, a sector study should address:
 - > Maintaining conditions that allow numerous small businesses to provide significant employment opportunities and economic activity;
 - > The influx of newer residents in recent years, with resulting language and cultural issues;
 - > Awkward traffic flow at the intersection of Old Forest, Chinguapin Round, and Forest Drive/MD 665;
 - > The need for better connectivity throughout this area.
 - > The sector study should address the merits of expanding the urban character to properties adjacent to the identified opportunity area, in particular:
 - * extending south along the east side of Old Solomon's Road, and
 - * along the north side of West Street in the vicinity of the proposed northward extension of Old Solomon's Road.
 - > The sector study should also undertake an examination of the zoning along West Street directly to the east of Legion Avenue. This Plan recommends the retention of the existing character in that stretch of West Street (the R3-NC zone), however, a look at uses permitted in that zone is merited. This examination acknowledges that while the character of that stretch of West Street should remain, the commercial function of the buildings has become as important as their residential use and should be supported.

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Policy 6. Enhance the Public Realm of City Dock and its Environs.

City Dock and its environs are fundamental to the city’s character and identity as a small seaport town with a rich history. Main Street has been designated one of Ten Great Streets in America by the American Planning Association, for its role as a living museum, a place that makes significant contributions to Annapolis’ downtown economy at the same time that the entire downtown remains physically and visually connected to its history, maritime culture, and architectural character.

Given the importance of the City Dock area to Annapolis, ~~it is important that~~ a plan for its future must be developed with broad participation by the entire community, as well as downtown residents and businesses. A plan for the public realm of City Dock and its environs should begin with forming a Vision, from which specific implementation steps be developed. Such a plan should update the 1993 *Ward One Sector Study*, which has been the guiding planning document for the downtown area.

The plan for the public realm around City Dock should achieve:

- ▶ Maximize public access to the waterfront;
- ▶ Maximize pedestrian friendly features;
- ▶ Minimize car parking during the day from the Market House to the end of City Dock at water’s edge;
- ▶ Incorporate a variety of open places, both large and small, for people to congregate for various purposes;
- ▶ Manage parking supply, ~~and~~ parking demand, and public transportation;
- ▶ Improve links between parking areas and transit, especially for employees;
- ▶ Accommodate boats of all types, as well as docking for cruise boats, commercial vessels, and water taxis;
- ▶ When hosting public events, balance the needs and interests of residents, businesses, and the event.

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Principle 3. Transportation systems both lead and follow important changes in our city’s land uses.

Investments in transportation can be targeted to support development patterns that are environmentally and economically sustainable.

Objectives:

- ▶ Transportation system capabilities provide a high level of mobility to and within downtown and all other activities centers in the city and in nearby Parole.
- ▶ Acknowledging that our development patterns are shifting toward higher density, the City must emphasize high capacity modes of transport ~~must be emphasized~~ over single occupant vehicles.
- ▶ The A development plan review and approval process must ~~that~~ reflect the objectives and policies of this Plan, in addition to a project’s auto traffic impacts.

Principle 4. Transportation investment and operating priorities in Annapolis must shift to transit, pedestrians and bicycles first, automobile second.

This Plan recognizes that our City has changed significantly in the past ten years and foresees continued change in the decade ahead. The Plan must guide the City towards meeting these challenges. It is imperative that the transportation system shift away from reliance on single-occupant vehicle use towards transit and other alternative modes of transportation. This shift will allow the City to capitalize on its character as a compact and walkable community and focus on restoring and improving the safety and convenience of sidewalks, trails, and bicycle facilities.

Objectives:

- ▶ Convenient access to local and regional public transportation for every citizen.
- ▶ Bicycles and walkways recognized as an important part of the transportation mix.
- ▶ A transportation system that allows the users of the system to factor the external costs of transportation into travel decisions and promotes travel decisions that limit congestion and environmental impacts and improves quality of life.

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Principle 5. Parking is key to transport system operation and funding.

The storage of vacant unused automobiles has been a problem for cities for as long as people have used cars for urban travel. The need for parking is a key lever for influencing when, where, and how people choose to use autos. By using parking as an incentive and disincentive, the City can move toward achieving its overall transportation goals.

Objectives:

- ▶ Reduced environmental and land costs associated with auto use and storage within the city.
- ▶ Parking pricing and availability is managed by the City in a manner that maximizes the potential for people to choose non-auto alternatives. ~~Parking pricing and availability influences mode choice decisions of those making work trips by auto.~~
- ▶ Parking revenues contribute to ~~that fund~~ improvements in transit services and infrastructure.

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Policy 3. Pursue the creation of a regional transit system serving the needs of Annapolis commuters, residents, and visitors.

- 3.1 Conduct a Feasibility Study of improved express transit service between Annapolis and Washington DC, Baltimore, BWI Airport, and the Eastern Shore. The study should determine what level of transit services are needed. The Feasibility Study should be done in partnership with the County and State.
- 3.2 It is the expressed policy of the City of Annapolis that the City be connected via rail transport to the broader region. The feasibility study called for in 3.1 above should determine the conditions under which rail transport between Annapolis and Washington, DC and Annapolis and Baltimore would be feasible. It should lay out a strategic plan for the development of a rail service and how that service can be seamlessly connected to and integrated with existing rail services in the Washington and Baltimore Metropolitan Areas.
- 3.3 A Multi-Modal Transportation Hub should be constructed to serve as the primary terminal for regional and local transit, taxis, and airport shuttles. Promote a partnership of public agencies and the private sector for the purpose of constructing the Hub. The Hub is envisioned to be located in the general vicinity of West Street and Route 2, however the ~~Such a~~ public-private partnership should reach agreement on the specific location of the Hub as well as its scope and program ~~for the Hub~~. In addition to serving as the Hub for public transit, it should provide intercept parking for vehicles, a bicycle rental facility, and be connected to the developing bicycle network.
- 3.4 Advocate for reforms in transportation funding arrangements at the County, State, and Federal levels to achieve regional decision-making and modal choice and eliminate bias against pedestrian, bicycle, public transit, and rail projects. Pursue the reinstatement of dedicated federal transit funding recently withdrawn by federal agencies.
- 3.5 Pursue the establishment of an organizational structure and funding mechanism in support of cooperative transportation planning and funding in the Annapolis area, if not through mutual agreement of Annapolis and Anne Arundel County, then by the private and/or non-profit sectors.

Policy 4. Specific and targeted improvements to the local street system should be made with priority to those that improve cross-town circulation, route continuity for public transit, and intersection capacities.

Figure 4.7 shows the location of these projects. The system improvements should be made as described below:

- 4.1 Chinquapin Round Road / West Street / Admiral Drive Intersection Realignment: The Chinquapin Round Road and Admiral Drive intersections with West Street (MD 450) are offset, which inhibits continuous cross town movements and contributes to local and system-wide traffic congestion. Figure 4-6 shows four conceptualized improvement scenarios. What is not shown in Figure 4-6 but has merit as both a transportation and urban design solution is a roundabout at the intersection of Chinquapin Round Road and West Street. A roundabout at this location should be evaluated as a component of each of the four alternatives shown in Figure 4-6 during the preparation of the Outer West Street Opportunity Area Master Plan.

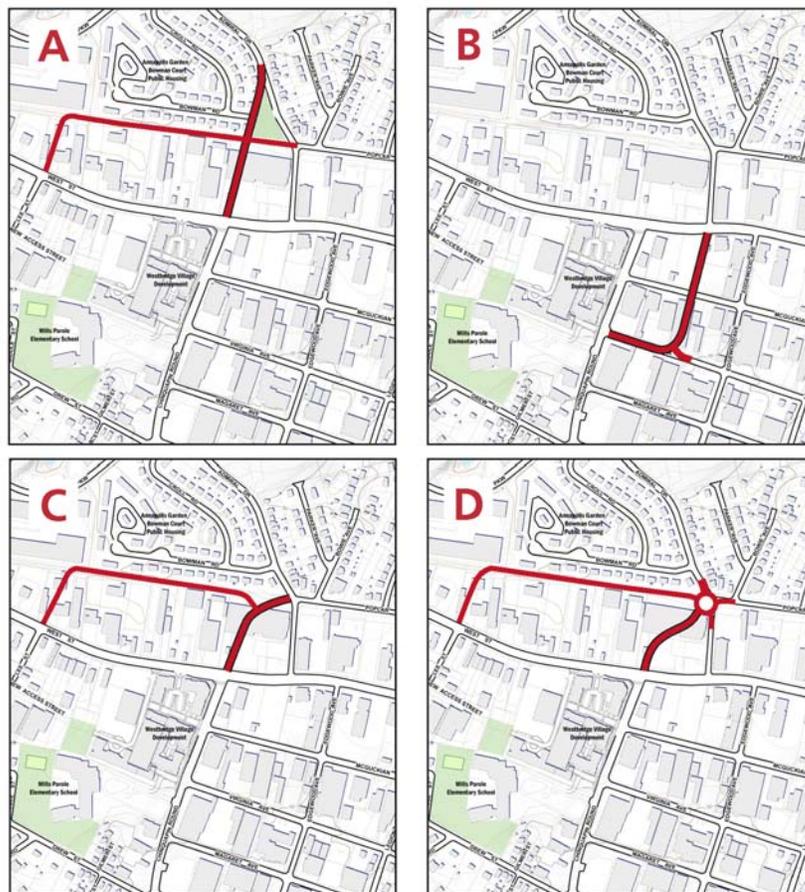


Figure 4-6 West St.– Chinquapin Round Rd. Intersection: four conceptual scenarios for improvement

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Policy 5. In light of the continuing growth of congestion in the Forest Drive corridor, preserve and enhance the array of solutions currently at the City’s disposal.

The 1998 Comprehensive Plan and other studies recommended a parallel service road running on the south side of Forest Drive – the Forest Drive Relief/Service Route. To that end, as land has been annexed into the city, a future road right of way has been reserved. The proposed route, however, has some important environmental concerns and potential capacity limitations that may reduce its desirability and usefulness. The City must keep a broad set of options available for dealing with this congestion in the future. If problems grow as forecasted, these options will become increasingly important in engineering an overall solution. For now, Anne Arundel County is widening Forest Drive from Aris T. Allen to Hilltop Lane, adding a lane in each direction. These are first steps in a phased improvement to the corridor.

To adequately address ~~the remaining problems,~~ congestion in the Forest Drive corridor, however, it will be necessary to update the prior studies in order to recommend a comprehensive set of improvements which will document and weigh the potential impacts of a parallel service road and provide a set of improvements to access and circulation within the Forest Drive corridor and the Forest Drive Opportunity Area (see Ch. 3 - *Land Use & Economic Development*). The goals of the improvements in the Forest Drive Corridor are ~~would be~~ to:

- ▶ reduce peak-period congestion,
- ▶ provide some measure of redundancy in the arrangement of streets by expanding connectivity in the existing road system and between neighboring grids, thus enabling short trips to be made without accessing Forest Drive,
- ~~▶ provide an enduring framework for effective public transit in the corridor, and~~
- ▶ advance the City’s commitment to alternative forms of transportation and reduced dependence on the automobile. In determining the future use of the Forest Drive parallel service route, priority should be given to alternative forms of transportation – transit, bicycles, pedestrians.

Figure 4.7 shows the location of the study area.

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Policy 8. The City will invest in system-wide improvement to convert main streets and avenues into “complete streets”—that is, streets which serve the full needs of the community.

Depending on the location, this could mean retrofitting existing streets to add sidewalks or tree planting strips, striping roadways to reinforce the shared use of streets for bicyclists, installing traffic calming improvements, and approving a unified set of standards. Part of this policy is a goal of making Annapolis a premier community for safe and reliable bicycle transportation and walking and promoting safe pedestrian and bicycle access to all schools in the community. ~~The State of Maryland has awarded Annapolis a Safe Routes to School grant and this and similar programs will be key tools for implementing this policy.~~

8.1 The design of Complete Streets elements will be done in coordination with the Maryland State Highway Administration’s Community Design Division. The State of Maryland has awarded Annapolis a Safe Routes to School grant and this and similar programs, such as the Sidewalk Retrofit Program, will be key tools for implementing this policy.

8.2 Build on the ongoing work of committed residents to create a world-class network of bicycling facilities and routes, and undertake the following key bicycle transportation improvements:

- ▶ Connect the Poplar and Spa Creek Trails.
- ▶ Extend the Poplar Trail to the downtown area in part by improving the service roads running parallel to West Street. Extend the Poplar Trail to Parole, the Annapolis Mall, and to the Anne Arundel County South Shore Trail.
- ▶ Work with the State Highway Administration to install bicycle lanes on ~~MD Route 450 from the Naval Academy Bridge to the Gate 8 traffic light~~ all State roads within the city.
- ▶ Develop a bicycle parking strategy that includes improved bicycle parking facilities at automobile parking facilities and other locations in commercial districts.
- ▶ Improve bicycle route signage and develop an action funding plan to implement the feasible bicycle facility improvements and policy changes recommended in the Annapolis Bicycle Transportation Committee’s November 2008 Report.

8.3 Building on the TeamPed Initiative and supporting the City sidewalk program, complete a Pedestrian Master Plan that formulates: an action plan for initial projects and programs; pedestrian improvements integrated with the transit system; funding recommendations; a prioritized program for repair, maintenance, and enhancement; and remediation of critical deficiencies that present safety issues.

8.4 The City of Annapolis is committed to upholding the intent and spirit of the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973. This commitment extends to all programs, services and activities, such that no individual with a disability shall be discriminated against on the basis of his or her disability.

- ▶ Where applicable ensure compliance with ADA Standards.
- ▶ Where possible comply with ADA Best Practices.

8.5 The primary function of major streets should be indicated through the use of ~~landscaping and design treatments~~ landscape architectural treatments that are designed in harmony with the community character. West Street, for example, is a major gateway from Parole into the center of Annapolis. It should project a unified appearance as a gateway with street trees, plantings materials, signage, street lights, bike lanes, ~~and~~ sidewalks and improved crosswalks.

2030 Forecast of Households and Population

Purpose of Forecasting Growth

A forecast is an essential step in preparing a comprehensive plan. A forecast allows the City to properly anticipate and prepare for the likely impacts and needs that may arise from change. Understanding the impacts of future growth in particular on community facilities and services helps ensure that adequate facilities are in place to meet future needs.

This Plan recognizes that accurate forecasting for a city like Annapolis located in a growing metropolitan region can be difficult; therefore the Plan evaluates alternative forecasts including the forecast prepared by the Baltimore Metropolitan Council. It arrives at a selected forecast in light of the physical constraints of municipal expansion, the City’s land use plan, and reasonable estimates of the capacity of the City to absorb added development. This Plan does not accept an unrealistic forecast of growth and then “force” a design on the City to accommodate that growth.

Appendix B provides information on the sources and methodologies for preparing the forecast for this 2030 Plan. Forecasting growth involves a study of fertility and mortality rates and of in- and out-migration of population. It also necessarily includes projections of regional economic activity with particular attention to employment growth. The population and household forecasts set forth in this chapter were reviewed by the Maryland Department of Planning (MDP) and were found by MDP to represent “a reasonable expectation of growth and development for the planning period (that is, through the year 2030) especially given the geographic constraints the City of Annapolis faces”. MDP’s comment reflects what each of the alternative forecasts studied suggests: Annapolis will continue to grow slower than Anne Arundel County and represent a declining share of total County population, but City population will grow. To put the Plan’s growth forecast in context, this section of the chapter discusses recent residential development approvals and the “development pipeline”.

Recent & “Development Pipeline” Growth

Between 1990 and 2000, Annapolis added 2,651 people, growing from 33,187 to 35,838 or by 0.8 percent per year, on average. Thus, by 2000, there were 15,300 households in the City. Over the next seven years, Annapolis issued building permits for approximately 900 new housing units (see Figure 5.1). The additional 900 housing units added to the base level in 2000 means that by the end of 2007, the City had an estimated 16,200 households. This estimate is confirmed by the Maryland Department of Planning’s 2007 estimate of the City population: 36,603, which equates to an average household size just under 2.3 persons.

Figure 5-1 Building Permits
2000 - 2007

Residential Building Permits: 2000-2007	
Year Applied	Number of Permits
2000*	50
2001*	50
2002	107
2003	101
2004	365
2005	79
2006	112
2007	35
Total	899
*Estimated	

In forecasting future growth, it is important to note that development and redevelopment plans are reviewed and approved on a continual basis. Figure 5.2 shows residential development projects in the “pipeline” at the end of 2007, ie. housing units in the process of obtaining approvals, but for which building permits had not been issued. The completion of these pipeline units would add about 470 households.

Figure 5-2 Residential Development Projects in the Pipeline, 2007

Residential Development Projects in the Pipeline			
Project Name	Dwelling Units		
	Total	Occupied	Remaining
<i>Clay Street Revit.*</i>	216	164	50
<i>Old Annapolis Neck</i>	160	-	160
<i>Village Greens</i>	90	-	90
<i>Rocky Gorge</i>	48	-	48
<i>smaller projects</i>	123	-	123
Total	637	164	471

* 164 units to be replaced with 214, providing a net increase of 50.

2030 Forecast

This Comprehensive Plan adopts the forecast levels of population and households shown in Figure 5.3. As previously noted, alternative forecast methods and assumptions were evaluated in arriving at a 2030 forecast for Annapolis. These are discussed in Appendix B.¹³ It is relevant to note that the alternative forecasts deviate from each other very little through the year 2030 and taken as a whole, they indicate that by 2030, the City’s population may approximate 42,600 and the number of households may approximate 18,520¹⁴.

Figure 5-3 Population and Household Growth 2000-2030

Population and Household Growth 2000-2030					
	2000	2030	Change: 2000-2030		Ave. Annual Growth Rate
			#	%	
<i>Population</i>	35,840	42,600	6,760	18.9%	0.5
<i>Households</i>	15,300	18,520	3,220	21.0%	0.6

¹³ The projections described and illustrated in the Appendix project population through the year 2025. This Plan adopts the year 2030 as the planning horizon and thus extends the described projections five years to 2030, focusing on households.

¹⁴ An annual average population growth rate of 0.5 percent per year was selected after considering the results of multiple forecasts. The average of the four projected annual growth rates studied (between 2000 and 2025) was about 0.52 percent. The “geometric projection technique” discussed in the Appendix projects the highest of the growth rates at about 0.59 percent per year. The Linear Regression projection technique, by contrast, projected the lowest of the growth rates at about 0.46 percent per year. These two results may be used to “bracket” the Plan’s adopted projection and if carried forward through 2030, the 2030 forecast population would range from a high of about 42,800 persons (and 18,610 households) and a low of about 41,200 persons (and 17,910 households).

Therefore, between 2000 and 2030, about 3,220 new households may be expected to be added to Annapolis. This reflects an annual growth rate that is comparable to the growth experienced between 1990 and 2007: about 0.6 percent. Annapolis is expected to continue in a slow growth mode during the period covered by this Plan.

Of the 3,220 new households expected between 2000 and 2030, about 42 percent of them have already been constructed or are in the previously mentioned “development pipeline”. As indicated above, the City issued building permits for an estimated 900 units between 2000 and 2007, and approximately 470 additional housing units are now in the pipeline. Therefore, in keeping with the forecast, in the years between 2008 and 2030, the City may anticipate an additional 1,850 households. As described in the following section, this development could be accommodated through gradual mixed-use development and re-development in four planned Opportunity Areas that are almost entirely within the city.

Distribution of Growth

This section addresses the location and distribution of forecast household and commercial growth. Large open areas or vacant lands are not readily available for development within Annapolis or adjacent to the City. This means that City will need to take care over the next two decades to direct growth into proper arrangements that sustain and support the goals of this Plan. The Land Use Element of the Comprehensive Plan proposes development concepts and recommendations intended to guide growth through both development and re-development to mixed-use centers located primarily within the City, rather than through annexation. This section signals that:

- ▶ This Comprehensive Plan seeks to direct future growth into planned arrangements and in areas presently within the corporate limits of Annapolis.
- ▶ Almost all growth potential could be accommodated within designated Opportunity Areas, much of it within the Outer West Street corridor.
- ▶ Vacant lands within the City will accommodate a very small share of future growth.

Development Capacity of Vacant Land

In planning where future growth should occur, this Plan considers the development potential of vacant land. There are 179 acres in 348 separate parcels within the City limits that are now vacant. About 93 percent of these, or 324 parcels, are less than one acre in size. It is estimated that 33 percent are adequately sized or otherwise unaffected by environmental or other constraints allowing the potential for their development over the next 20 years. This means that an estimated 107 parcels are “developable”. Based on past experience in building permit issuance, the Plan assumes that half of these developable parcels will actually develop through 2030 and each parcel will accommodate one dwelling unit. This means that up to 50 new housing units may be expected on the current vacant parcels under one acre in size in the City.

Only seven percent of vacant land is in parcels greater than one-acre in size. These larger parcels account for 72 acres of land. Of these, about 39 acres are already in the “development pipeline” (see Figure 5-2) and 21 acres cannot be developed because they have environmental or other site constraints. This leaves 12 acres that are vacant in the City which may be developed at some point. Assuming that all the land

is developed and about 33 percent of the area is taken up in streets and other rights-of-way or set aside because of environmental constraints, these 12 acres could accommodate about 44 houses, at a density of 5.5 units per acre. In total then, vacant land in the City might be able to accommodate an estimated 94 housing units through 2030.

Development Capacity and Planned Opportunity Areas

Four Opportunity Areas are proposed, and recommendations for land use and density are provided in Ch. 3 – *Land Use & Economic Development*. Chapter 3 also recommends that detailed master plans be prepared for each Opportunity Area with the participation and input of nearby residents and property owners, and that planning and development in each Opportunity Area be guided by the Character Types documented in that chapter. Combined, the four Opportunity Areas could accommodate up to 1,770 new residential units and 604,000 square feet of net new commercial space. This projection should not be construed as a recommended development maximum or minimum, but rather as an attempt to anticipate a build-out scenario. Chapter 9 – *Water Resources* shows that sufficient public water and sewer resources are available to support this growth projection.

Figure 5.4 provides guidance on the distribution of forecast households among the Opportunity Areas. The land use-based projection assumes a maximum build-out scenario, ie. making the assumption that the opportunity areas redevelop to the full extent and at the maximum density. This chapter must be read in conjunction with chapter 3, which states a policy that all growth in opportunity areas must blend with adjacent communities. In many ways this Plan requires growth in opportunity areas to be modulated and moderated in ways consistent with the goal of preserving, protecting, and enhancing communities, eg. via attention to site design, aesthetics, bulk and mass of buildings, views, sunlight, and traffic management. Figure 5.4 also shows the number of units that may be constructed on currently available vacant parcels.

Figure 5.4 Distribution of 2030 Household Forecast

Location	Potential New Housing Units	Share of 2030 Growth
Opportunity Area		
West Annapolis	109	6%
Bay Ridge	69	4%
Forest Drive	139	8%
Outer West Street	1439	78%
Subtotal	1756	95%
Vacant Parcels	94	5%
Total	1850	100%

Each of the existing Opportunity Areas has a commercial base and the Plan proposes that each remain mainly commercial while transitioning to a mix of uses, with residential development allowed. In this regard, the Plan proposes that each Opportunity Area meet only a share of the City’s residential needs through 2030 but that each area in fact contribute to, and through mixed use development (or redevelopment) help achieve the essential land use, transportation, and environmental goals of this Comprehensive Plan. For example, the Forest Drive Opportunity Area is planned for about 140 housing units, which comprise eight percent of the City’s 20-year population growth forecast. The estimates of future housing units and commercial space shown below should guide the City as it conducts master planning for the Opportunity Areas with the participation of local residents and property owners.

- ▶ Outer West Street Opportunity Area: This expansive area is mostly developed in auto-oriented commercial and light industrial uses. It contains about 2,500,000 square feet of non-residential space and nearly 400 housing units. As direction to future master planning, this Plan anticipates that new mixed-use development could yield 1.1 million square feet of commercial space, of which 350,000 square feet would be a net increase, and about 1,440 housing units.
- ▶ West Annapolis Opportunity Area: This area is mainly commercial with little residential use. It now contains nearly 500,000 square feet of non-residential space. As direction to future master planning, this Plan anticipates that new mixed use development could yield 135,000 square feet of commercial space, of which 10,000 square feet would be a net increase, and about 110 housing units.
- ▶ Bay Ridge Opportunity Area: This area is mainly commercial with up to 80,000 square feet of non-residential space currently and little residential use. As direction to future master planning, this Plan anticipates that new mixed use development could yield 90,000 square feet of commercial space, of which 80,000 square feet would be a net increase, and about 70 housing units.
- ▶ Forest Drive: This area is largely undeveloped now but does contain about 82,000 square feet of commercial space with frontage on Forest Drive and little residential use. As direction to future master planning, this Plan anticipates that new mixed use development could yield 167,000 square feet of commercial space, of which 162,000 square feet would be a net increase, and about 140 housing units.

Revisions to the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission. Includes revisions to Figure 6-2 ‘Trail Network Map’.

Page 76 2nd Bullet:

- ▶ The Colonial Annapolis Maritime Trail (CAMT) is part of the Maryland Millennium Legacy Trail, which also encompasses the BWI and Baltimore Annapolis Trail facilities in Anne Arundel County. Annapolis is the only place in the United States where two national trails connect: the East Coast Greenway Trail, running from Maine to the Florida Keys, and the transcontinental Great American Discovery Trail, stretching from Delaware to California. Both the East Coast Greenway Trail and the Great American Discovery Trail enter the City at the Naval Academy Bridge and follow City roads before connecting to the Poplar Trail, then leave the City via Admiral Drive.

Page 78:

Policy 2. Complete the network of pedestrian and bicycle pathways.

- 2.1 Expand and consolidate Annapolis' proposed Colonial Annapolis Maritime Trail into one comprehensive, safe and user-friendly network for both cyclists and pedestrians. Complete the Colonial Annapolis Maritime Trail, a bike and pedestrian network designed to connect Annapolis' green spaces and recreation areas through a mix of trails, sidewalks and bicycle lanes. Close coordination between the Departments of Recreation & Parks, Planning and Zoning, Transportation, and Public Works will be necessary for the successful completion of such a network.



Poplar Trail

- Coordinate with the County, State (Maryland Millennium Legacy Trail, of which the Baltimore-Annapolis Trail is a component) and national trail systems (East Coast Greenway, Great American Discovery Trail) for the purpose of publicity, education, and implementation.
- 2.2 Coordinate implementation of the Colonial Annapolis Maritime Trail with bike and pedestrian improvements described in Ch. 4 – *Transportation*.
- 2.3 Expand the “Navigate Annapolis” wayfinding and identification system to sites owned or maintained by Annapolis Recreation and Parks.

Revisions to the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission.

Policy 2. Protect and restore environmentally sensitive areas and other natural resources within the City

2.1 Steep slopes that are located near water bodies should be protected by conservation easements when possible. When conservation easements are not possible, the City should enforce the preservation of all vegetation and trees along these slopes in order to prevent damage to the shoreline.



Kayakers on Spa Creek

2.2 Every effort should be made to protect open space contiguous to existing natural areas to establish and protect wildlife corridors.

2.3 Naturalized yards are encouraged over traditional landscaping. Naturalized yards favor plantings that include trees, shrubs, and groundcover plants that tolerate the natural rainfall patterns of the city and urban soils.

2.4 Through the Annapolis Conservancy Board, the City should obtain conservation easements to meet the objective of protecting the city’s natural resources generally and environmentally sensitive areas specifically. Conservation easements should connect open space where possible. The City should consider limiting rear-lot easements, establishing incentives for developers to remove invasive species during the initial grading process, and acquiring fee simple dedications for small areas in minor subdivisions.

2.5 To help achieve the City’s environmental goals and ensure high quality development, the City will create a Site Design Manual that will replace the 1986 *Parking and Landscaping Manual*. The Site Design Manual will provide guidance on design of the landscape on public and private development sites. This will include planting with a preference for water conserving plants and plants tolerant of urban soils, rainwater management, tree preservation, and soil management. Best management practices for handling the impacts of development, use of pervious and impervious paving materials, design of parking areas, lighting, internal circulation, and other matters related to site development should also be addressed in the Manual.

The Site Design Manual will aim to make the site design process more predictable. The Manual will be coordinated with the City’s Green Building standards and other sections of the City Code governing trees and other planting, grading, critical areas, and rainwater.

Revisions to the Dec. 2008 “Public Review Draft” Comprehensive Plan adopted by Annapolis Planning Commission.

1.3 The City should work with neighborhoods to consider allowing “mother-in-law apartments” or “granny flats” in owner-occupied houses in residential districts where the community finds them acceptable. These above-garage apartments, in-home apartments, or small cottages that serve as a second residence on a property can provide added income to the homeowner and provide a small affordable housing unit. Regulation of such “accessory dwelling units” would be necessary, and would need to address size of the accessory unit, provision of parking, and a permitting process and enforcement.

Policy 2. Reinvent Public Housing

2.1 Support the Housing Authority’s efforts to “reinvent” public housing, with the goal of ensuring quality housing for low income residents. “Reinventing” includes rebuilding and rehabilitating public housing complexes with a mix of ownership and rental units, new arrangements for property ownership (shared public-private ownership), and transitioning to private professional property management.



Bloomsbury Square

2.2 As part of the Housing Authority’s current and future redevelopment planning, the City should work with HACA to evaluate income diversity of public housing residents.

2.3 In the redevelopment of public housing sites, encourage Context Sensitive Design and apply the principles of Crime Prevention through Environmental Design (CPTED). Context Sensitive Design ensures that the architectural elements, site layout, and scale of development complements the surrounding neighborhood. CPTED principles enhance natural surveillance, natural access control, and natural territorial reinforcement to reduce crime and improve quality of life of residents.

2.4 While “bricks and mortar” are an important aspect of public housing, just as important is the social context of poverty and disparities in income and educational attainment experienced by public housing residents compared to the larger Annapolis community. The Housing Authority offers a range of supportive programs to public housing residents and the City recognizes that programs that address social disparities must be included in public housing’s “reinvention”. This should include: ~~Coordinate with HACA in providing services to public housing communities related to~~

- ▶ For children: early childhood education programs, professional tutoring, counseling, and mentoring.
- ▶ While the public housing communities have recreation centers, recreation services are not always available. Offering recreation services on-site would enable young and stressed families to access these programs.
- ▶ For adults: computer training, employment skills, parenting, self-sufficiency, homeownership, and financial counseling. ~~recreation, and volunteer opportunities.~~

2.5 Strive for efficient communication ~~and coordination~~ between the Housing Authority (HACA) and City government and identify common goals for the improvement of quality of life in public housing communities. Consider designating a City staff liaison, to facilitate establishing regular meetings between HACA and City leaders and involving

~~public housing Resident Councils in City Boards and Commissions civic life. Regular meetings between City staff and HACA are recommended to help facilitate coordination and work toward achieving common goals.~~

- 2.6** An Advisory Committee should be established to review and comment on all plans for reconstruction or rehabilitation of public housing communities. No reconstruction or rehabilitation plans should be approved by the City unless ten percent of units are reserved for mixed income.

Water System Supply and Demand

Water Supply

Groundwater drawn from seven deep wells located near the water treatment plant supply the City's water system. Water is pumped from three Coastal Plain aquifers – the Magothy, Upper Patapsco and Lower Patapsco aquifers. These aquifers slope downward from northwest to southeast and, where situated below Annapolis, are protected by confining layers of relatively impermeable, clayey soil.

The principal source of water for Annapolis is the Magothy formation. The aquifer is recharged where it crops out, an area of approximately 70 square miles in Anne Arundel County and another eight square miles in Prince Georges County. Possible exposures to the Magothy aquifer in the form of rock outcroppings have been reported in Bowie, which is approximately 10 miles west of Annapolis. Possible surface exposures to the deeper Patapsco aquifers would be more likely found further west and northwest, in the Columbia/BWI area. A study conducted jointly by the City and Anne Arundel County in 2003, concluded that there are no immediate threats to the raw water quality and little chance of any future changes to this condition.

The 2008 Water Supply Capacity Management Plan (WSCMP) for the City of Annapolis, has provided the following observations:

- ▶ In the past five years, Annapolis' highest annual average daily water demand was 4.77 million gallons per day (mgd) – see Figure 9.1. This translates to household water use of 300 gallons per day (gpd). When this figure is adjusted for commercial and institutional water consumption, leakage, and unaccounted for water uses, household water demand is consistent with MDE's rule of thumb of 250 gpd per household.
- ▶ The City has been allocated an average daily use of 5.70 million gallons by the Maryland Department of Environment (MDE) with an average daily supply of 10.0 million gallons during the month of maximum use. State permitting conditions require that water be drawn from the Upper and Lower Patapsco aquifers to the "greatest extent possible," instead of the shallower and more threatened Magothy aquifer.
- ▶ Annapolis is currently drilling a new well in the Lower Patapsco aquifer that will replace a similar, recently retired well. When this well becomes operational, the City's total capacity with all wells running at the same time will be 11.80 mgd. Well field capacity with the highest producing well off-line ("firm capacity") will be 9.26 mgd.
- ▶ Actual water uses recorded during the single driest annual summer month between 2003 and 2007 ranged from 4.7 mgd to 5.9 mgd. While 5.9 mgd exceeds the average daily allocation, it is well below the permitted allocation during the month of maximum use and the City's firm capacity.
- ▶ The City's MDE water allocation permit allows for an annual average daily withdrawal of 5.70 mgd. Actual use recorded between 2003 and 2007 has ranged between 74.1 and 83.6 percent of the allocation, as shown in Figure 9.1.
- ▶ The 2008 WSCMP states that the long-term safe yield of the water supply wells will be 8.2 mgd when the new well begins production. The safe yield takes into account water level trends in the water supply aquifers as well as individual well capacities.

Figure 9-1 City of Annapolis Daily Water Use and Allocation

City of Annapolis Daily Use & Allocation					
Year	Average Daily Water Use (mgd)	Allocation (mgd)	Percent of Allocation	Surplus Allocation	
				Daily Use (mgd)	Population Equivalent*
2007	4.53	5.70	79.4	1.17	4,690
2006	4.77		83.6	0.93	3,739
2005	4.65		81.6	1.05	4,198
2004	4.57		80.2	1.13	4,515
2003	4.22		74.1	1.48	5,912

* Population equivalent assumes per capita consumption of 100 gallons per day.
Source: Mark Schultz Associates and Kendig Keast Collaborative.

- ▶ Assuming that Annapolis grows by an additional 2,320 households and accommodates new commercial development (representing pipeline development and projected growth), by 2030 it is possible that average daily water use could grow from 4.77 mgd to 5.46 mgd. Figure 9-2 shows the impact of the residential and commercial growth discussed in Ch. 5- Municipal Growth and Community Facilities on the demand for water. The water demand figures in Figure 9-2 show the net increase in demand as a result of added development. If average daily water use exceeds the permitted allocation of 5.70 mgd, then the City will need to submit an application for an increase to the MDE.

Figure 9-2 Impact of Growth on Water Demand

Impact of Growth on Water Demand			
	Residential Units	Commercial Space (sf)	Estimated New Water Demand (gpd)*
Projected Net Increase: Pipeline Development	470	200,000	144,500
Projected Net Increase: Projected Development 2009-2030**	1,850	604,750	544,141
Total	2,320	804,750	688,641

*The Estimated New Water Demand is the sum of the demand created by new residential units (assuming 250 gallons per day/unit) and the demand created by new commercial space. For commercial space a demand factor of 0.18 gallons per day (gpd) per square foot (sf) is applied to one-half of the projected commercial space and a demand factor of 0.09 gpd/sf is applied to the other half. These flow calculation rates apply to general shopping centers and office buildings, respectively (Source: MDE).

**The projection of net new commercial development was arrived at through a build-out analysis of the planned Opportunity Areas (see Chapter 3). Actual commercial development through 2030 may exceed that shown in this table; only the net increase expected in the City through 2030 is shown, reflecting the fact that much commercial development occurs through the redevelopment of existing space which is presently provided with public water and sewer service and counted as part of the "existing use".

Wastewater Collection and Treatment

Collection

Annapolis maintains a sanitary sewer system that serves all areas of the city and the Naval Academy. Based on the topography, the city is split into multiple pump station sub-systems to convey wastes to the treatment plant on Edgewood Road. A map indicating the existing sewer system and pump stations and siphon is shown in Figure 9.5. The City's sewer system serves all areas within the city boundary, although in some areas, service is subject to private connections to the system being made.

The City is completing a Water and Sewer Systems Study. This Study will update the City's wastewater model and establish a foundation for identifying system deficiencies and developing a prioritized list of improvements.

Inflow and Infiltration

Inflow and infiltration (I & I) can be a problem especially for older municipal sewer systems. Inflow is stormwater that enters the wastewater collection system as a result of insufficient stormwater management on lots (e.g., downspouts that direct water into sewer collection pipes). Infiltration is flow from groundwater that enters the system through cracks in pipes, for example. I & I add to the amount of wastewater that needs to be treated and discharged, which reduces available capacity for households and businesses. The Annapolis Water Reclamation Facility is operating under capacity and I&I has not be identified as a problem, but the City should undertake I&I studies of possible problems on a regular schedule.

Treatment

The Annapolis Water Reclamation Facility (WRF) is a plant that is jointly owned and supported by the City and Anne Arundel County, but is operated by the County. As a joint facility, it treats sanitary sewage collected from the City, County, and USNA. The plant is located off of Edgewood Road within the City's limits. The plant's capacity is 13 mgd, of which the City (with the USNA) has been allotted 6.7 mgd. The effluent from the WRF is discharged to the Severn River.

The City currently generates a little under 5 mgd of wastewater flow. Assuming that Annapolis grows by an additional 2,320 households and accommodates new commercial development (representing pipeline development and projected growth), by 2030 it is possible that wastewater flows could grow from 5 million gallons per day (mgd) to approximately 5.72 mgd. Figure 9-4 shows the impact of the residential and commercial growth discussed in Ch. 5- Municipal Growth and Community Facilities on the demand for sewer. The demand figures show the net increase in demand as a result of added development. While this remains within the City's allocation, it differs from an estimate calculated by the County in 2006.²⁰ The projection of 5.72 mgd should be factored into the City's Agreement with the County governing the WRF, which will be renewed in 2010.

²⁰ The 2007-2010 Master Plan for Water Supply and Sewerage Systems by Anne Arundel County calculated that the City would generate only 5.48 of wastewater flow by 2030. However, the City's calculation is based on updated conditions and projections.

Figure 9-4 Impact of Growth on Sewer Demand

Impact of Growth on Sewer Demand			
	<i>Residential Units</i>	<i>Commercial Space (sf)</i>	<i>Estimated New Sewer Demand* (gpd)</i>
Projected Net Increase: Pipeline Development	470	200,000	151,725
Projected net Increase: Projected Development 2009-2030**	1,850	604,750	571,348
Total	2,320	804,750	723,073

* Estimated New Water Demand is the sum of the demand created by new residential units (assuming 250 gallons per day/unit) and the demand created by new commercial space. For commercial space a demand factor of 0.18 gallons per day (gpd) per square foot (sf) is applied to one-half of the projected commercial space and a demand factor of 0.09 gpd/sf is applied to the other half. These flow calculation rates apply to general shopping centers and office buildings, respectively (Source: MDE).

**The projection of net new commercial development was arrived at through a build-out analysis of the planned Opportunity Areas (see Chapter 3). Actual commercial development through 2030 may exceed that shown in this table; only the net increase expected in the City through 2030 is shown, reflecting the fact that much commercial development occurs through the redevelopment of existing space which is presently provided with public water and sewer service and counted as part of the “existing use”.

The County/City is in the process of completing a design of an Enhanced Nutrient Removal upgrade to reduce nitrogen to 3 mg/l and phosphorous below 0.3 mg/l. Construction on the project is scheduled to begin in 2009. The ENR upgrade would allow the plant’s permitted capacity to reach 17.2 million gallons per day. There is sufficient space on the site of the WRF to expand to this capacity if needed. The Annapolis WRF currently uses Biological Nutrient Removal (BNR) technology and meets its permit requirements for total nitrogen and phosphorus concentrations in the effluent.

Wastewater Pretreatment

The Department of Neighborhood & Environmental Programs manages the City’s Wastewater Pretreatment Program. This state regulated program, regulates the discharge of difficult to treat sanitary waste, having the potential to cause harm to the collection system, treatment plant, utility workers or the environment.

Septic Tank/On Site Waste Treatment Standards

The City’s sewer system serves the full incorporated area. Septic tanks and onsite waste treatment are not a factor in Annapolis since there are no independent systems in the city.

Marine and Industrial Waste Management

Maritime and industrial waste discharges are subject to Maryland and U.S. Coast Guard regulation, as are recreational boating waste handling. Collection and conveyance to the City sewer system are the responsibility of boaters and individual marina operators. There are no commercial port or ship maintenance facilities in the City that require commercial disposal provisions.

Drainage and Stormwater Management

Facilities

Generally, the City is served by a combination of storm sewers in the downtown urban areas and surface drainage into streams and creeks in the outlying areas. The storm sewers were separated from the sanitary sewer system during the 1960s and 70s. While there are no large retention/detention facilities integrated with the City's drainage system, such facilities are routinely required for all developments with large buildings or extensive paved areas.

Stormwater Management Sections of the City Code²¹

Chapter 17.10 is the stormwater management section of the City Code. It provides that all development and redevelopment activity in the City address and water quality. In particular, it establishes that all site development plans with disturbances of more than 5,000 square feet (and 2,000 square feet for waterfront sites) shall reduce existing impervious area by at least 50 percent. If site conditions prevent this from being accomplished then the development plan must provide for enhanced control of the quality of runoff from the site. This improvement is most often accomplished through structural Best Management Practices, (BMPs) (such as rain gardens and infiltration trenches) but can also be done through such techniques as conservation easements, buffers, and greenroofs.

Beyond regulation of development, the volunteer and individual efforts of property owners and business can meaningfully help improve stormwater quality in the City and help reduce the loads on stormwater facilities.

Erosion and Sedimentation

The Maryland Department of Environment (MDE) has established erosion and sediment control standards, implementation and maintenance techniques, and specifications associated with various best management practices during construction. The permitting requirements and monitoring are administered by the City of Annapolis. Techniques deal with appropriate means of soil stockpiling, surface grading, and the application sedimentation skirting and fencing. Grading, soil erosion, and sedimentation control permitting requirements are administered by the City as part of the building and grading permitting process. Sediments entering storm sewers and surface waterways are also managed through a regular street sweeping program.

Chemical and Fertilizer Usage

Introduction of organic chemicals and fertilizers into storm sewers and waterways can be destructive to the biological balance of receiving streams, waterways, and rivers. The excess nutrients cause algae blooms in the waterways. Algae blooms can block sunlight and also deplete oxygen, causing harm to both aquatic plants and wildlife. Best management practices are normally associated with public education on appropriate ways to dispose of household substances and the proper application of lawn chemicals.

²¹ Updates to State of Maryland stormwater design regulations automatically update the City's regulations in this area. The State Stormwater Design Manual is expected to become more stringent as it is updated in 2010 and with it, the principles of Low Impact Development may be expected to become increasingly relevant and applied in Annapolis.

The use of fertilizers in City Parks is extremely limited. Fertilizers containing phosphates were banned in Annapolis in 2008.

Water Resource Management Areas

Wellhead Protection

Because Annapolis' raw water supply is drawn from wells ranging from 300' to over 1,000' in depth, special measures for protection from seepages into the aquifer at and around the locations of its wellheads is not a planning consideration. Additionally, the plant and all wells are located in Waterworks Park, shown in Figure 9.6. Approximately 30 acres of the 650-acre Waterworks Park are maintained as a secure water supply zone.

Aquifer Protection

The primary recharge areas of the aquifers supplying Annapolis are subject to significant urban and suburban development pressures in the Baltimore-Washington corridor. Quantity of aquifer recharge and the adequacy of aquifers to serve Annapolis over the long-term future is a regional issue that must be studied further and addressed.

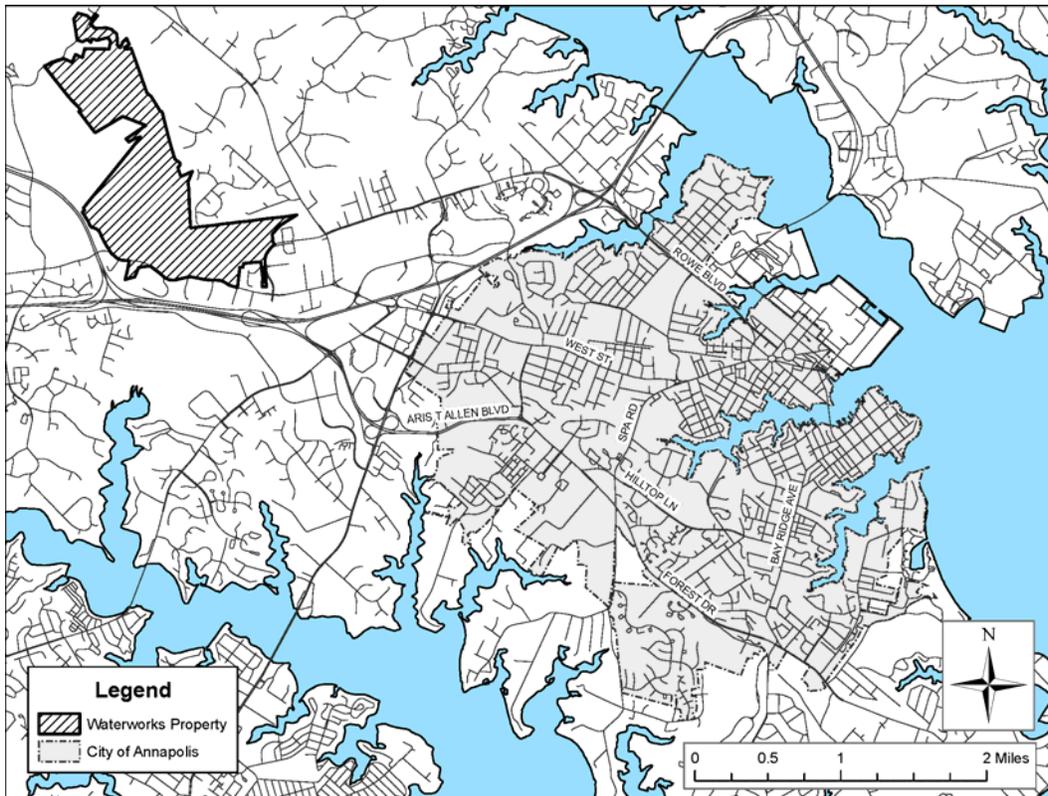


Figure 9-6 Waterworks Property in relation to the City corporate boundary

Surface Watershed Areas

Annapolis is situated in the “Lower Western Shore” tributary to the Chesapeake Bay watershed. The Annapolis Neck, in general, is drained by the Severn and South Rivers. More specifically, the City is drained by Weems Creek, College Creek, Spa Creek, and Back Creek, which are tributary to the Severn River and by Crab, Harness and Aberdeen creeks, which drain to the South River. Sub-watersheds are shown in Figure 9.7.

The City has completed an Action Plan for Annapolis Watersheds. The Action Plan measures impervious coverage for four sub-watersheds in the city (the Weems, College, Spa, and Back Creek sub-watersheds), and other indicators of ecological health. The analysis and recommendations from the Action Plan will inform the City’s future actions in regards to watershed management. However, the comprehensive water resource planning that the City will conduct in coordination with Anne Arundel County, in compliance with Article 66B, is focused at the Severn and South River water levels and not to any individual stream, creek, or other “receiving water”.

Annapolis’ surface waterways also create challenges to the City in the form of infrastructure costs: bridges, culverts, water line and sewer crossings and the need for sewage lift stations for 14 sanitary sewer drainage basins for areas at the northern and western peripheries of the city.

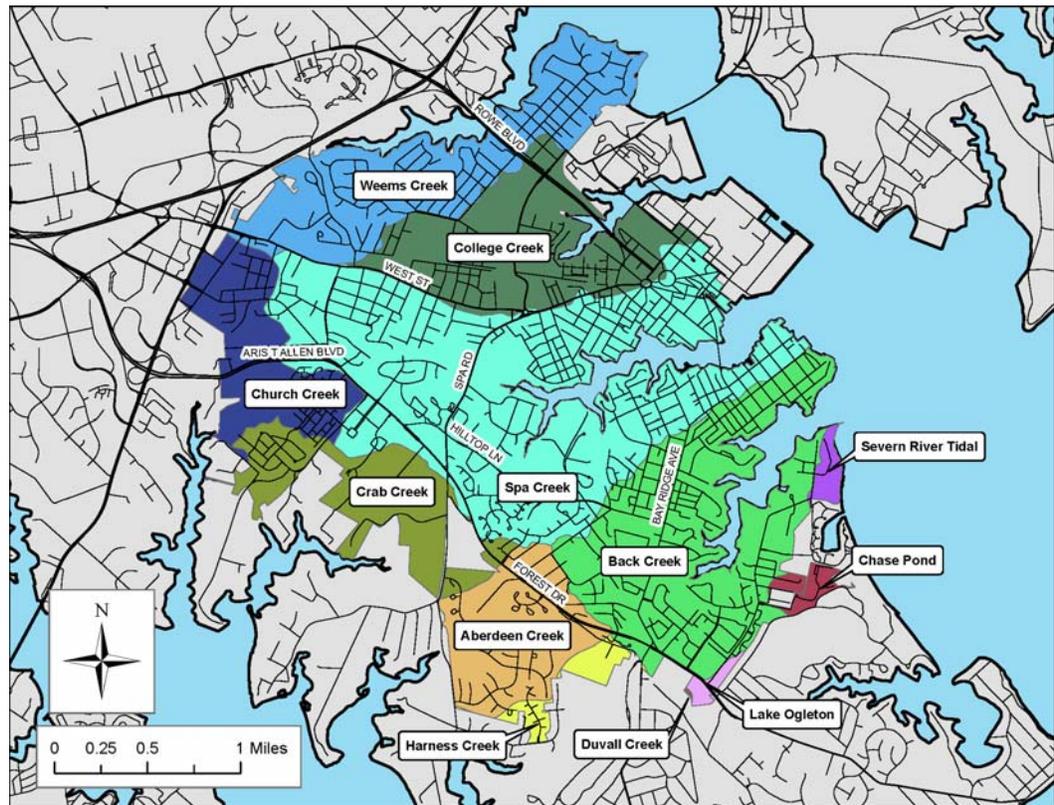


Figure 9-7 Sub-Watersheds Map

developed areas, little of the tree canopy is expected to be impacted by growth. Refer to Chapter 7, for policy recommendations related to reducing pollutant loading to Annapolis waterways, increasing the tree canopy, and green building practices.

Adjustments to the Land Use Plan

No adjustments are needed to Future Land Use proposed in Ch. 3 - *Land Use & Economic Development*. This Plan's focus on environmental goals, in particular the reduction of polluting effects of stormwater runoff, Low Impact Development, the retrofit of stormwater management facilities and environmental site design in general, will contribute to water quality improvements as development and redevelopment occur. (See Chapter 7 – *Environment*, and Policy 3.4 of this chapter.) For the reasons mentioned below changes to the Annapolis comprehensive land use plan cannot be looked to for meaningful improvements in area water quality. Instead future growth will continue to be subject to strict stormwater management best management practices. When correctly implemented, development should have no significant impact on area water quality. In the case of redevelopment, pollutant impacts should be reduced especially in areas where existing development has substandard retention.

Annapolis is located within the Severn and South River watershed. The Maryland Department of Environment (MDE) has determined that both watersheds are impaired with respect to nutrients (nitrogen and phosphorous) metals, and bacteria. However, MDE has not yet established nutrient TMDLs for the watersheds as it is empowered to do under the federal Clean Water Act²². TMDLs stand for Total Maximum Daily Loads and reflect the total daily pollution that water bodies can absorb and still meet federal water quality standards. In the future MDE may promulgate TMDL's for nitrogen and phosphorous. When and if it is does, the City will endeavor to coordinate with Anne Arundel County to meet these established pollutant caps within the Severn and South River watersheds.

As part of its Water Resources planning, Anne Arundel County has completed watershed analyses for both the Severn and South watersheds and in the absence of TMDL's, calculated nutrient loading assimilative capacities for nitrogen and phosphorous²³. Like TMDL's, the assimilative capacities establish a maximum value for acceptable nutrient loading. Where pollutant loadings are found to exceed assimilative capacities, the land use condition is determined to be unable the support biological health of the watershed's receiving waters.

²² MDE has established bacteria TMDLs for the watersheds. The Annapolis contribution in this regard is minimal because development in the City is served by the municipal sanitary sewer system, rather than by individual on-site septic systems.

²³ The County calculated the non-point source (stormwater) pollutant loadings using its Watershed Management Tool and data on existing land cover, stormwater management coverage, impervious coverage, soil infiltration rates, rainfall, pollutant event mean concentrations and other pertinent data. The assimilative capacities are based on data on bacteria and other stressors in the watershed and established quantitative relationships between certain land cover characteristics and concentration of nitrogen and phosphorous in stormwater runoff.

The County's calculated assimilative capacities for nitrogen and phosphorous (in both watersheds) is 2.7 lbs/acre/year and 0.38 lbs/acre/year, respectively. The County study shows that both values are well exceeded in the watersheds under current conditions and under the County's future land use plan conditions. Assimilative capacities are much like TMDL's except that they are planning targets without the regulatory authority associated with MDE required TMDLs. In the absence of MDE promulgated TMDL's, Annapolis will use the County's assimilative capacities and coordinate with the County to study the contributions it can make toward achieving assimilative capacities.

The County's analysis showed nutrient loading in the Severn and South River watershed will experience little change between the existing conditions and future County land use plan. The City's Comprehensive Plan also recognizes that it is not possible for Annapolis alone to attain the assimilative capacities. While Annapolis is a major part of the Severn River Watershed in particular, it is an established city and nearly completely developed and the City's land use cannot be looked to for meaningful contributions to water quality improvements. That being said, as part of a continuing and coordinated water resource planning effort, the City will coordinate with the County to compare the City's Land Use Plan (see Chapter 3) with existing conditions data used by the County and quantify any possible impacts to area water quality. No adjustments to the City land use plan are envisioned at this time.

This Plan's focus on ecologically sound re-development and environmental site design in particular will contribute to long term improvements in water quality, however. The City will coordinate with the County to study the potential reductions in nutrient loading that can be achieved using a variety of measures such as implementation of enhanced stormwater management BMPs. These are discussed in this Chapter and in Chapter 7, Environment.

Policy Recommendations

Policy 1. Protect and Conserve the Existing Water Supply and Distribution Systems

- 1.1 Utilize the findings of the Water and Sewer Systems Study (completion anticipated in 2009) to prioritize and implement improvements to the water supply and distribution systems. Provide reliable water service to all City residents.
- 1.2 Undertake measures to reduce water system losses and per capita consumption rates. Actions that support this policy include:
 - Implement a strong public information campaign to promote increased residential and commercial water conservation.
 - Improve record keeping and analysis of water use. Increase the frequency of public water use reports.

- Consider the adjustment of residential water rate structures to reward domestic water conservation.
- Review existing building codes to determine opportunities to require water conserving fixtures and appliances.
- Promote (or require) landscaping practices that minimize watering requirements, particularly during the drier seasons.

Policy 2. Enhance the Wastewater Collection and Treatment Systems

The city’s wastewater treatment system does not appear to be at risk in the near future, in part due to coordination between the City and Anne Arundel County. Improved nitrogen removal at the wastewater treatment facility (in continued coordination with the county) will continue. Emphasis on development and redevelopment opportunities within municipal limits reduces the need to expand the number of existing lift stations.

- 2.1 Utilize the findings of the Water and Sewer Systems Study (completion anticipated in 2009) to prioritize and implement improvements recommended for the wastewater collection and treatment systems. Using the sewer model being developed as part of the Study, evaluate system capacity frequently and consistently.
- 2.2 In the 2010 renewal of the City’s Agreement with the County for the Water Reclamation Facility (WRF), factor in changes detailed in this Plan to the City’s allocation of the WRF capacity.

Policy 3. Maintain Water Resource Management Areas

- 3.1 Maintain best management practices (BMP’s)—frequent street sweeping, planting of street trees, enhanced streetscapes, and catch basin cleaning—to reduce the introduction of pollutants into waterways and storm sewers. Identify opportunities for additional BMPs, such as pet waste cleanup requirements, limited fertilizer use, disconnection of downspouts and capturing of rainwater onsite, and publication of violations. (City policy regarding stormwater management is detailed in Chapter 7 – *Environment*, and complements this policy.)
- 3.2 Maintain the portions of Waterworks Park dedicated to a secure water supply service area. This area should be inaccessible to public recreational use.

- 3.3** Coordinate with Anne Arundel County to complete an analysis of nonpoint source nutrient loading to Annapolis waterways, as recommended in the State’s “Models & Guidelines, Vol. 26: The Water Resources Element.”
- 3.4** In order to meet higher standards for environmental quality, water quality in particular, the City should promote Low Impact Development (LID). LID is an approach to land use that works with natural processes and ecologically engineered systems to manage stormwater as close to its generating source as possible. Basic principles include preserving and recreating natural landscape features and functions to provide water quantity control and water quality improvements that benefit nature and society. Treating stormwater as a resource as opposed to a waste product, LID strives to minimize the effective impervious area of a site by creating or retrofitting drainage features on a small scale close to the source of runoff. LID can significantly reduce the adverse cumulative impacts of stormwater on the physical, chemical and biological quality of receiving waters.

This policy will be implemented in coordination with the policies in Ch. 7 – *Environment*. LID can be addressed through development of a Site Design Manual and by making changes to subdivision regulations, the zoning ordinance, and stormwater management regulations. These efforts should be coordinated with the City’s Green Building Standards. This level of attention will be needed as the City seeks to reduce pollutant loadings to area waterways to levels comparable to a 32-percent impervious coverage, see Ch. 7 – *Environment*, policy 1.

Methods and Responsibility for Implementation

The Annapolis Comprehensive Plan is a City policy document. The primary means of implementation include:

- ▶ **Incorporation of policy recommendations into daily decisions** guiding development, redevelopment, preservation, infrastructure, transportation, economic development, growth and a myriad of other issues. Many of the policies cited in the Comprehensive Plan are designed to assist in site design as well as approval of plats and permits. Consideration should be given to incorporating policies into checklists or other review materials to ensure that they are utilized when and where appropriate.
- ▶ **Amendment of current land development regulations** to ensure a quality character of development that reflects the community's vision. The current zoning ordinance has the tools in place to address a number of the policies recommended in the Comprehensive Plan. Changes to Zoning Code language and maps may be indicated to facilitate the land use and character changes envisioned for the four opportunity areas identified in Ch. 3 – Land Use & Economic Development. Changes to existing zoning controls in the opportunity areas will be undertaken as part of the more detailed area planning that will be done for each opportunity area. Alternative development regulation techniques (described below) may also be explored to better accommodate recommendations about community character and environmental sustainability, as well as the flexibility cited in Article 66B, Land Use.
- ▶ **Changes to legislation and state actions.** Various recommendations of the Comprehensive Plan are best met through legislative action. For example, transportation recommendations addressing rail links to Baltimore and Washington D.C. could be emboldened by changes in transportation funding.
- ▶ **The Capital Improvement Program (CIP)** is the financially constrained document used to implement recommendations from this and other adopted plans. Coordination with the CIP will allow for construction of improvements in an order that will accommodate the most pressing needs of the Comprehensive Plan. The multi-year plan identifying capital projects for street infrastructure; water, wastewater, and drainage improvements; park, trail and recreation facility provisions; and other public buildings and municipal services is not only a critical link to the timing and funding of projects, it is also a recognition of the need for expanded intergovernmental coordination. Capital improvements must be coordinated with the objectives of this plan if the community is to meet its planning goals and serve as a catalyst in obtaining the desired future community character.
- ▶ **Identification and implementation of special projects, programs, and initiatives** will support organizational, programmatic, and/or developmental objectives. These may include further studies, detailed area plans (individual neighborhoods or special districts), or initiating or expanding upon key City programs.

Plan Amendment

In accordance with Article 66B, Land Use, Section 3.05(b)(2), the Comprehensive Plan will be examined at least once every six years to ensure that it remains relevant. Shifts in political, economic, physical, and social conditions, and other unforeseen circumstances will influence the priorities of the community. As Annapolis continues to mature and evolve new issues will emerge while others may no longer be relevant. Some action statements may become less practical while other plausible solutions will arise.

Annual Progress Report

A progress report should be prepared annually by the Planning Commission, with the assistance of the Planning & Zoning Department, and presented to the Mayor and City Council. This ensures that the plan is regularly reviewed and modifications are identified. Ongoing monitoring of plan consistency with the City's ordinances must be part of this effort.

To inform the Annual Progress Report, data to illuminate the following Plan topics will be assembled and tracked annually:

- Population growth and dynamics of that growth
- Residential and commercial building trends
- Economic indicators
- Indicators of progress toward transportation goals, environmental goals, and housing goals
- Expansion of municipal boundaries and areas served by City sewer and/or water infrastructure

The Annual Progress Report should include:

- ▶ Significant actions and accomplishments during the past year including the status of implementation for each programmed task.
- ▶ Implementation constraints including those encountered in administering the plan and its policies.
- ▶ Proposed amendments that have come forward during the course of the year, which may include revisions to plan maps, or other recommendations, policies, or text changes.
- ▶ Recommendations for needed actions, programs, and procedures to be developed and implemented in the forthcoming year, including a recommendation of projects to be included in the CIP, programs and initiatives to be funded, and priority coordination needs with public and private implementation partners.
- ▶ Guiding questions to help evaluate annual progress should refer back to the three main ideas that shaped the development of the Plan.

Have actions and accomplishments furthered the goals of preserving and enhancing community character?

Are local business districts thriving and have City actions supported the maintenance of a vibrant economy?

What progress has been made towards promoting a "Green" Annapolis?

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- Based upon organizational, programmatic, and procedural factors, as well as the status of previously assigned tasks, the implementation task assignments must be reviewed and altered to ensure timely accomplishment.
- Changes in laws, procedures, and missions may impact the ability to achieve the goals. The plan review must assess these changes and their impacts on the success of implementation, leading to any suggested revisions in strategies or priorities.

The Action Agenda in Figure 10-1 lists the recommendations considered a priority within the first 3 years after Plan adoption. They are subject to budget, staffing, and other City management prerogatives and will be reviewed annually as part of the Annual Progress Report. Many of these must be implemented in concert with government or private sector partners.

Figure 10-1 Action Agenda 2009-2012

Action Item	Policy/Chapter Reference
Plans & Studies	
1 Outer West Street Sector Study	Chapter 3, Policy 1
2 West Annapolis Sector Study	Chapter 3, Policy 1
3 Bay Ridge Opportunity Area	Chapter 3, Policy 1
4 Forest Drive Opportunity Area	Chapter 3, Policy 1
5 City Dock Public Realm	Chapter 3, Policy 6
6 Regional Transit Initiatives	Chapter 4, Policy 3
7 Pedestrian Master Plan	Chapter 4, Policy 8
8 Climate Action Plan	Chapter 7, Policy 3
9 Sea Level Rise Strategy	Chapter 7, Policy 3
Programs	
10 Capital City Cultural Arts District	Chapter 3, Policy 9
11 Historic District Survey	Chapter 3, Policy 9
12 Transportation Demand Management Program	Chapter 4, Policy 1
13 "Complete Streets" and Local Street System Improvements	Chapter 4 Policy 6
14 Traffic Impact Study Regulations	Chapter 4, Policy 9
15 Bicycle Transportation and Trail Network Improvements	Chapter 6, Policy 2
16 Pollutant Loading Reduction	Chapter 7, Policy 1
17 Urban Tree Canopy Program	Chapter 7, Policy 1
18 Moderately Priced Dwelling Units Program: Density Bonuses	Chapter 8, Policy 1