

Transportation

The Glen Burnie Planning Area is one of the oldest suburban communities in the County and is served by a fairly extensive transportation network due to its location near Baltimore, Annapolis, and the Baltimore Washington International Airport. The area is supported by several major highways as well as transit routes which provide connections to major urban areas such as Baltimore and Washington, D.C. and to the rest of the County. The transportation network serving the area is shown on Map 5.

Road Network

The road network serving the Glen Burnie Area consists of major freeways, arterial highways, and collector roads. Freeways serving the area include the Glen Burnie Bypass (I-97) and the Arundel Expressway (MD 10) which provide access to points north and south. The Baltimore Beltway (I-695) and MD 100 provide freeway service to points east and west.

Governor Ritchie Highway (MD 2) is the principal arterial highway connecting Glen Burnie to Baltimore, Annapolis and points south. Minor arterial highways in the Glen Burnie area include Crain Highway (MD 3), Baltimore-Annapolis Boulevard (MD 648), Quarterfield Road (MD 174), Mountain Road (MD 177), Ordnance Road (MD 710), Furnace Branch Road (MD 270), Dorsey Road (MD 176), and Veterans Highway (MD 178).

Table 11 lists transportation projects in the Glen Burnie Planning Area that are in the County's *Capital Budget and Program (FY2005)* and/or in the State's *Consolidated Transportation Program (FY 2004-09)* or that have been completed recently. In addition, the County's 1997 *General Development Plan* recommends some road improvements for long term implementation.

Public Transit Network

The Planning Area is served by Baltimore's Central Light Rail Line. The southernmost stop along this line is the Cromwell station at B&A Boulevard and Dorsey Road. The Maryland Transit Administration (MTA) operates the Light Rail Service over a 29-mile distance between Hunt Valley north of Baltimore and the Cromwell station in Glen Burnie. Current weekday ridership along this line is over 26,000 trips, and recent projections indicate that ridership may increase by 15 to 20% over the next ten to fifteen years. Seven Light Rail stations are located in Anne Arundel County along B&A Boulevard and Camp Meade Road, with a spur running to the BWI Airport terminal. The current number of average weekday boardings at each station is listed below:

Nursery Road station: 440	Cromwell station: 1,500
North Linthicum station: 500	BWI Business District: 360
Linthicum station: 380	BWI Airport: 1,100
Ferndale station: 130	

Map 5

MTA is currently in the process of constructing double tracks along portions of the Light Rail line in Baltimore City. The double track project includes a section in Anne Arundel County between the Linthicum and Ferndale stations. MTA is also currently conducting a parking needs assessment to determine which Light Rail stations may require additional parking over the next several years. With regard to long range plans for the Light Rail system, the Baltimore Region Rail System Plan (March 2002) projects an extension of the Light Rail Line from the BWI Airport to the BWI Amtrak Station, Arundel Mills Mall, the Dorsey MARC Station, and eventually to Columbia Town Center in Howard County.

The MTA also provides bus service in the Glen Burnie Area during weekdays connecting downtown Baltimore and Annapolis. Bus routes primarily serve the corridors along Crain Highway, Ritchie Highway, and East Ordnance Road and also serve the Cromwell Light Rail Station. The Corridor Transportation Corporation (CTC) also operates in northern and western Anne Arundel County with routes that include Quarterfield Road, Baltimore Annapolis Boulevard, the Cromwell Light Rail Station, and the Town Center in Glen Burnie. The BWI Business Partnership runs the LINK, a shuttle service in the BWI Airport area. The County completed a Transit Development Plan in 2003 which will guide the delivery and growth in bus transit service throughout the County.

Table 11. Current Transportation Improvement Projects in the Glen Burnie Area

Project	Description	Status
<i>County Projects</i>		
Glen Gardens Road Reconstruction	Reconstruct roads in the Glen Gardens community in need of repair beyond normal maintenance; roads include Carrol Road, Glen Road, and Delaware Avenue.	Construction underway.
Hospital Drive Extension	Design and construct an extension of Hospital Drive from the current terminus in Fox Chase to Elvaton Road.	Funds have been programmed for construction. Funding for continuation to Gov. Stone Parkway may be included in a future budget.
Chesapeake Center Drive	Provide a roadway connection from Ordnance Road to Dover Road.	Funds approved for engineering and land acquisition.
Wellham Avenue Road Reconstruction	Reconstruct Wellham Avenue from MD 648 to Furnace Branch Road.	Project is in pre-design phase.

Project	Description	Status
<i>State Projects</i>		
Md 2 Resurfacing	Resurface/rehabilitate road surface from Furnace Branch Road to MD 100	Construction underway on section north of 5 th Avenue; section south of 5 th Ave. to be completed by 2005.
MD 648 & MD 3 Business (Glen Burnie Gateways)	A Neighborhood Conservation project focusing on streetscape improvements from Dorsey Road to MD 10 and from 8 th Avenue to Aquahart Road.	Conceptual design is complete; not yet funded for construction.
MD 174	Replace existing 2-lane bridge over I-97 with a 6-lane structure compatible with the adjacent roadway sections. Interchange ramp improvements and sidewalks will be included where appropriate. MD 174 will include wide outside curb lanes that will accommodate bicycles.	Construction underway.
MD 10	Landscaping from MD 648 to I-695.	Completed.
MD 3 Business	A Safety and Spot improvement project at I-97 to extend through lane and add right turn lane.	Completed.
I-97	An Environmental Preservation project at MD 174/Quarterfield Road and MD 3/Crain Highway split to install landscaping.	Completed.
<i>General Development Plan Recommendations</i>		
I-695	Provide improvements to the interchange with MD 2.	Long term implementation.
Mountain Road	Upgrade Mountain Road from MD 100 to Pinehurst Road to improve safety conditions	Long term implementation.
Dover Road	Extend to Bay Meadow Drive to alleviate congestion in the Glen Burnie Mall area.	Long term implementation.

Hiker-Biker Network

Glen Burnie is served by two excellent recreational bike trails. The B&A Trail is a hiker-biker trail which extends approximately 13 miles from the intersection of B&A Boulevard and Dorsey Road to its terminus at Jonas Green State Park on the Severn River at the U.S. Naval Academy Bridge. At Dorsey Road, the B&A Trail connects with the BWI Trail, which circles the airport along Aviation Boulevard and extends up to the Linthicum Light Rail station.

Anne Arundel County recently adopted a *Pedestrian and Bicycle Master Plan* in 2003. The master plan proposes a regional network of bicycle and pedestrian routes in the County and identifies roads where improvements are needed to accommodate either bicycling or walking or both. Map 6 identifies the roads in the Glen Burnie Planning Area that are recommended for improvements. The master plan identifies portions of Ritchie Highway (north of Furnace Branch Road) and Mountain Road (east of B&A Boulevard) as Tier 1 recommended improvements, meaning that these are important road segments that need to be retrofitted in order to better accommodate bicycling and walking. The master plan also identifies several roads in Glen Burnie as Tier 2 recommended improvements, which indicate routes that are recommended for future improvements as opportunities may arise, but that are of a lower priority than the Tier 1 routes. The Tier 2 roads are Ritchie Highway south of Furnace Branch Road, East Ordnance Road, Furnace Branch Road west of Ritchie Highway, B&A Boulevard, Crain Highway, Quarterfield Road, Jumpers Hole Road, Marley Neck Boulevard, and Mountain Road between Ritchie Highway and B&A Boulevard. The master plan also identifies the intersection of Dorsey Road and B&A Boulevard and the adjacent Light Rail station as a Pedestrian Improvement Zone, which targets the area for pedestrian-oriented redesign to improve pedestrian safety.

Assets and Issues

Glen Burnie is well served by a network of freeways, arterial highways, and local streets. However, there are specific locations in the Planning Area where the highway level-of-service is poor during rush hour periods, such as sections of Ritchie Highway, Ordnance Road, Dorsey Road, and B&A Boulevard. The MTA's Light Rail System, with local access at the Cromwell Station, connects to points throughout the Baltimore Metropolitan Area and is considered a major asset in the Glen Burnie area. Likewise, the B&A Trail connecting Glen Burnie to Annapolis is a very popular asset that is widely used by area walkers and bicyclists.

Future needs and improvements that have been identified by local residents include taking measures to improve traffic safety at specific locations in the Planning Area; a need to improve pedestrian safety along Ritchie Highway; improved pedestrian access to the Cromwell Light Rail Station; a desire for increased public transit services; and the need to address deficiencies in road infrastructure in a timely manner. The following plan recommendations address many of these issues.

Map 6

Goals and Recommendations

Goal: Improve the local and regional system of roadways to allow for safe and efficient traffic flow.

Recommendations

1. Provide road improvements as necessary to improve access to and from the Glen Burnie High School site. Determine if installation of a traffic signal on B&A Boulevard at Kuethe Road would be feasible.
2. Determine whether traffic signals or other intersection improvements can be provided at the following intersections to improve traffic safety:
 - Freetown Road and Mountain Road
 - Margate Road and Furnace Branch Road
 - Central Ave. and Dorsey Road
 - Old Mill Road and Kenora Drive
 - Furnace Branch Road at Crain Highway
 - Ritchie Highway and Norfolk Road.
3. Provide full interchange access for all directions at the MD 100/MD 10 interchange.
4. Extend Dorsey Road from 8th Avenue to Ritchie Highway at Furnace Branch Road. This road extension was previously considered by the County and referred to as Phase 2 Dorsey Road.
5. Complete Cloverleaf Drive in the area near the Cloverleaf Business Park, where the road discontinues. This will provide additional access to the condominium and apartment complexes in this area and help to relieve traffic conditions on Crain Highway.
6. Extend Dover Road to Bay Meadow Drive to alleviate traffic congestion at the Ritchie Highway and Ordnance Road intersection and around the Glen Burnie Mall. This project was recommended in the *1997 General Development Plan*.
7. Upgrade Holsum Way adjacent to the Glen Burnie Mall, and improve connections to Ritchie Highway.
8. Study the need for a future extension of Oakwood Road from its current terminus at Old Mill Boulevard south to East-West Boulevard, and reserve right-of-way as needed.
9. Study alternatives to improve safety conditions at the I-97 interchange at Quarterfield

- Road. An acceleration-deceleration lane serves traffic entering I-97 northbound from Quarterfield Road and also traffic exiting I-97 northbound onto MD 100. Traffic merging is hazardous at this location under heavy traffic conditions.
10. Study alternatives to improve safety conditions at the I-97 interchange at Dorsey Road. Merging conditions for traffic exiting I-97 northbound at Dorsey Road and traffic entering I-97 northbound from MD 100 are hazardous under heavy traffic conditions.
 11. Conduct a survey of local roads in the area to identify and prioritize needed improvements in road infrastructure, including curb and gutter, street lighting, and pavement repairs, to improve traffic and safety conditions.
 12. Design and implement a road resurfacing program in North County that can keep pace with the aging infrastructure in this part of the County, and provide funding for the program through County, State or federal funding sources or a combination of sources.
 13. Improve coordination between the County's Public Works office, the State Highway Administration, Baltimore Gas and Electric, and other utility providers, in relation to road improvements and utility installation and repairs, so that road projects such as resurfacing can be scheduled in conjunction with utility projects.
 14. Introduce legislation to eliminate roadside fund raising activities.

Goal: Expand the existing public transit system to connect residents to employment, educational, cultural, and recreational activities, and increase ridership on the Light Rail system by improving convenience and access.

Recommendations

1. Establish the Cromwell Light Rail Station as transportation center for the area.
 - Provide shuttle service from the station to area shopping malls, the Town Center, and other activity centers.
 - Local and commuter bus routes should have connections at the Light Rail station.
 - Provide transit route maps, time schedules and fare schedules as needed to facilitate transit ridership.
 - Provide real time transit service monitors at the Cromwell Light Rail Station to facilitate increases in ridership.
2. Establish a local shuttle bus service to the Town Center from residential communities in the area.
3. Provide, improve or expand park and ride facilities as needed to support public transit.

4. Install signs advertising the County-owned parking lot on Central Avenue.

Goal: Provide adequate pedestrian amenities to create walkable communities that are safe and pedestrian-friendly.

Recommendations

1. Conduct a pedestrian safety study along Ritchie Highway throughout the Planning Area to determine where crosswalks and/or other pedestrian amenities are needed.
2. Improve pedestrian and bike access at the Cromwell Light Rail Station; provide a signalized crosswalk and traffic island.
3. Conduct a survey of the Planning Area to determine where sidewalks or other facilities are needed to improve pedestrian safety and access. Among the locations which should be given high consideration are the following:
 - Jumpers Hole Road at MD 10/100
 - B&A Boulevard between Ritchie Highway and the Glen Burnie High School
 - B&A Boulevard between the Cromwell Light Rail station and the Town Center
 - Crain Highway between 8th Avenue and Furnace Branch Road
 - Old Freetown Road
 - Warfield Road and Cherry Hill Lane in Morris Hill
 - Quarterfield Road
 - Ritchie Highway from the Baltimore Beltway to Jumpers Hole Road.
4. Seek funding sources to implement final engineering design and construction of the Glen Burnie Gateways Plan which proposes streetscape and sidewalk improvements to Crain Highway between Aquahart Road and 8th Avenue and to B&A Boulevard between Dorsey Road and MD 10.
5. Adopt legislation to allow for an ongoing sidewalk construction and replacement fund to be allocated in the County's capital budget in an annual cycle similar to the road resurfacing program.

Goal: Expand bicycle routes in the area to create a bicycle network that connects to regional networks as well as to activity centers, parks, and transportation centers.

Recommendations

1. Provide linkages to implement the planned County-wide pedestrian and bicycle network.
 - In conjunction with the State Highway Administration, provide adequate sidewalks, road shoulders or designated bike lanes to accommodate bicyclists and pedestrians along Ritchie Highway, East Ordnance Road, Furnace Branch Road, B&A Boulevard, Crain Highway, Quarterfield Road, Jumpers Hole Road, Marley Neck Boulevard, and Mountain Road, as recommended in the County-wide *Pedestrian and Bicycle Master Plan*.
2. Provide additional bicycle racks and lockers at public transit stations, parks, shopping centers and other major activity centers.

Natural and Historic Resources

Existing Conditions

The Glen Burnie Planning Area contains some significant environmental features, including several streams and creeks that feed into Curtis Bay and the Patapsco River. Some of these features are shown on Map 7. The following sections describe the area's natural resources as well as the processes by which they are managed and regulated.

Chesapeake Bay Critical Area

In 1984, the Maryland General Assembly passed the Critical Area Law in response to the environmental decline of the Chesapeake Bay. This law created a special planning area encompassing all wetlands, land, and water areas within 1000 feet of the landward boundaries of the mean high tide or the edge of tidal wetlands as designated on the State Tidal Wetland maps. The Critical Area Commission was also created to formulate protective criteria for the use and development of this area and to oversee the programs developed by local jurisdictions, which were required by the State law to develop their own Critical Area Programs based on the Commission's criteria.

Anne Arundel County's Critical Area program was developed in 1988 to manage land use in these sensitive coastal areas. Pursuant to the State's criteria, the County designated three development categories within the Critical Area. The delineation of the development categories was based on the existing development and available public services as of December 1, 1985. The three categories are listed below.

- Intense Development Areas (IDAs): areas of 20 or more contiguous acres where development predominates and where there is relatively little natural habitat. IDAs can be developed with high density housing, commercial or industrial uses, according to the underlying zoning designation.
- Limited Development Areas (LDAs): areas developed at low or moderate intensity. Additional development must not change the prevailing established land use, and must improve water quality and conserve areas of natural habitat. LDAs can be developed with medium density housing at a maximum of 4 units per acre, commercial and small industrial uses according to the underlying zoning designation.
- Resource Conservation Areas (RCAs): areas characterized by nature-dominated environments such as forests, wetlands, or agriculture. New residential development is limited to a density of one dwelling unit per 20 acres.

Within the Critical Area, there is a 100-foot wide minimum protected buffer from tidal waters, streams and tidal wetlands. Development in both the RCA and LDA designations also

Map 7

requires that impervious surfaces be limited to 15 to 25% of the site. Clearing of forested lands is limited and there are specific requirements for reforestation. Moreover, development of LDA or RCA lands that are not forested includes a requirement to establish 15% of the site in forest.

The State's criteria also required the County to designate Habitat Protection Areas (HPAs) within the Critical Area. These include historic waterfowl staging and concentration areas, colonial water bird nesting sites, threatened and endangered species and species in need of conservation, anadromous fish spawning areas, existing riparian buffers, forested areas used by forest interior dwelling birds, non-tidal wetlands, Natural Heritage Areas, and other areas of local significance.

The Critical Area within the Glen Burnie Planning Area follows the shorelines of Curtis Creek, Furnace Creek and Marley Creek. Map 8 depicts the Critical Area designations in the area. The majority of the Critical Area in Glen Burnie is classified as IDA, although there is a significant amount of LDA Critical Area along both sides of the Point Pleasant peninsula.

Streams and Watersheds

The Glen Burnie Planning Area lies primarily within the Patapsco tidal watershed, although a very small portion at the southern end of the planning area drains to the Magothy River. The major subwatersheds in the area are the Cabin Branch, Sawmill Creek, Furnace Creek, and Marley Creek subwatersheds. Several streams cross the planning area and drain into Furnace and Marley Creeks. Back Creek, Sawmill Creek and Muddy Bridge Branch Creek feed into Furnace Creek, and several unnamed streams feed into Marley Creek.

The estuarine portions of the Patapsco watershed, including the Patapsco River and Curtis Bay, are classified by the Maryland Department of the Environment (MDE) as Use I streams. Use I waters are typically defined as being suitable for water contact sports; fishing and propagation of fish [excluding trout], other aquatic life and wildlife; and agricultural and industrial water supply. However, a recreational advisory has been in place on both Furnace and Marley Creeks since the late 1970's due to bacteriological and chemical contamination. The recreational advisory discourages use of these waterways for swimming, jet skiing, and water skiing. In addition, MDE has posted a fish advisory against consumption of white catfish in Furnace and Curtis Creeks. The Patapsco watershed does not have any Use II waters which are suitable for shellfish harvesting. In the Magothy River, most of the river is open to shellfish harvesting, although the resources are greatly diminished from historic levels. Smaller tributaries and headwaters of the Magothy are closed to shellfishing, however, because of poor flushing action or bacteriological contamination.

As part of an effort to characterize the health of the State's streams, the Maryland Department of Natural Resource's Maryland Biological Stream Survey (MBSS) examines stream habitat, insect populations, and fish populations. By comparing measurements made in study streams to conditions measured in pristine reference streams, the overall level of stream

health

Map 8

can be determined. Measurements were made at stations in Marley Creek, Sawmill Creek, Furnace Creek, and Cabin Branch Creek in the Glen Burnie area. Overall, stream habitat ranged from fair to very poor. Stream dwelling insect populations were mostly very poor or poor while fish populations were mostly very poor. In general, biological communities, in the Patapsco watershed were depressed due to degraded habitat and water quality.

Sawmill Creek tributary has had a history of water quality and quantity-related problems. The stream flows easterly from Sawmill Creek Park into Furnace Branch. In the 1980's the watershed was chosen to be part of the Maryland Targeted Watershed Project, a multiagency demonstration project whose goal was to coordinate monitoring, pollution control, and restoration programs to accomplish improvements in water quality and habitat conditions in several key tributaries to the Chesapeake Bay. A baseline survey and stream monitoring were initiated in 1989, and a Restoration Strategies report was published in 1992. Since that time, several restoration activities have been initiated or completed, and positive results have been documented for base flow restoration, habitat and channel stability improvements, removal of fish blockages, and some reductions in chemical pollutants. Significant investments have been made in stormwater volume and quality control. Based on the success of the project, many consider it to be a model for other watersheds.

The Maryland Department of Natural Resources (DNR) is the lead agency for the Tributary Strategies Program, a comprehensive approach to reducing nutrient pollution in Maryland's ten tributary basins to the Chesapeake Bay. Glen Burnie falls within the sub-watershed Patapsco Back River Tributary Basin. This program has been ongoing for several years and is led by tributary teams comprised of State and local officials and citizens working to promote responsible stewardship of the watershed and to coordinate education and outreach programs.

Presently, watershed management master plans are being prepared for the County's 12 major watersheds. The first of these plans was specific to the South River watershed. These master plans will address the impacts of stormwater runoff, soil erosion and sedimentation, flooding, and pollutant transport. The plans will recommend management alternatives to address current and potential impacts to area waterways. A similar plan for the Severn River watershed was initiated in February 2001, and the remaining watershed plans will be drafted over the next several years.

The County has programmed several capital projects in the Glen Burnie area to improve area waterways. A floodplain management project near Norfolk Road will replace concrete channels with a natural stream channel in Marley Creek. The new Elvaton Towne stormwater management facility will control and treat runoff from over 400 acres in the Marley Creek watershed. A new stormwater management facility is also planned in the Harundale area to treat runoff to Marley Creek. Another capital project involves construction of wetlands at the outfall from Marley Station Mall to improve water quality in Marley Creek by treating runoff from 500

acres. Additionally, there are plans to provide a fish passage on a tributary to Sawmill Creek near Olen Drive. The County will continue to program capital projects as needed in the future to implement recommendations from the upcoming watershed management plans.

Wetlands and Flood plains

Wetlands

The majority of wetlands in the Glen Burnie Planning Area are tidal and non-tidal riparian wetlands, according to mapping from the U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps. Major tidal wetlands include those at the headwaters of both Furnace and Marley Creeks. Wetlands are found scattered along the floodplains of Back Creek, Sawmill Creek, Cabin Branch Creek, and Marley Creek. The NWI maps are a general guide to the presence of wetlands but are not definitive, and wetland delineations have to be performed on an individual site basis to definitively establish their presence and extent.

Wetlands have long been recognized as an important component in the health of the Chesapeake Bay. They provide numerous environmental benefits that include filtering sediment and nutrients from upland runoff, controlling flooding and shoreline erosion, providing nurseries for shellfish and finfish, absorbing nutrients from the water column, and providing valuable habitat for many aquatic and terrestrial species of plants and animals. Tidal wetlands are important to commercial and recreational fisheries because many of the Bay's commercial fin and shellfish spend some portion of their lives in this environment. The aesthetic value of tidal wetlands is demonstrated by the many residents who want to live on or near the water.

The County protects tidal wetlands through implementation and enforcement of the Chesapeake Bay Critical Area Program. Through the County permit process, any proposed impacts to tidal wetlands are assessed by the permit reviewer to determine compliance with Critical Area requirements.

Non-tidal wetlands are areas that are characterized by an ample water supply, saturated or hydric soils, and hydrophobic vegetation. These characteristics distinguish wetlands from upland areas and provide the framework for the regulatory definition of non-tidal wetlands used by the State and the Federal government. There are many types of non-tidal wetlands, such as forested wetlands, scrub-shrub wetlands, and wet meadows to name a few. Non-tidal wetlands provide many of the same environmental functions as tidal wetlands, including habitat for fish and wildlife, maintaining water quality and flood control, reducing nutrients from runoff, and enhancing groundwater recharge.

The County protects non-tidal wetlands through the implementation and enforcement of the Critical Area Program, the Sensitive Area Criteria in the County Grading Ordinance, and cooperation from Maryland Department of the Environment and the U.S. Army Corps of Engineers. An applicant proposing to disturb non-tidal wetlands within the Critical Area needs to obtain not only a building and grading permit and State and/or Federal Permit approval, but

also a variance to the Habitat Protection Area criteria cited in Article 28 of the County Code (Zoning Ordinance). The State and county require a minimum 25-foot buffer to all non-tidal wetlands.

Flood plains

Flood plains are the areas adjacent to a stream or river that are subject to flooding or inundation during storm events. Flood plains are designated by the Federal Emergency Management Agency (FEMA) as non-tidal, tidal, and coastal high hazard, and are frequently defined in terms of the likelihood of flooding in a given year. For example, the 100-year flood plain is the area adjacent to a stream or river that floods, on average, every 100 years. These flood plains have been identified through the FEMA Flood Insurance Rate Maps (FIRM) and through specific flood plain studies. The non-tidal flood plains on the FEMA maps are based generally on the existing land use as of 1983. The county requires that new developments recalculate the flood plain based on current development plus future development based on zoning. Glen Burnie contains both tidal and non-tidal flood plains along the shores of Cabin Branch, Back Creek, Sawmill Creek, Furnace Creek and Marley Creek.

Anne Arundel County first began protecting streams and flood plains in the early 1950s when platting of lots in the 50-year flood plain was prohibited. However, much of the legislation protecting flood plains was not adopted until the late 1960s and early 1970s. Therefore, early development review did not account for impacts from increased stormwater runoff from individual sites or the cumulative impacts of stormwater runoff in a drainage basin. This resulted in stream bank and streambed erosion in many of the County's streams.

Development is generally prohibited in the non-tidal flood plain. Through implementation of the Flood plain Management Ordinance (Article 21 of the County Code) and provisions of Article 26 (Subdivision) of the County Code, requirements for development in or adjacent to the 100-year flood plain are set forth. Currently, developers are required to delineate the 100-year flood plain and the County prohibits lots from being platted in that flood plain. The flood plain is to be retained in or restored to its natural state and dedicated and deeded to the County as part of the development process. Although the flood plain may be deeded to the County, the developer reserves an easement to the community or homeowners association for the right to use the area in a manner not inconsistent with the maintenance and preservation of the 100-year flood plain.

In tidal flood plain areas, development is permitted provided buildings and structures are designed to minimize flood damage. The key criterion is for the lowest floor to be elevated at least one foot above the base flood elevation.

Steep Slopes

Steep slopes are defined in the County Code as slopes characterized by increased runoff, erosion, and sediment hazards and that (1) have an incline greater than 15% and (2) in the

Critical Area have an incline of 15% or greater. Generally, steep slopes cannot be disturbed unless the disturbance will improve an existing erosion problem. Moreover, slopes with an incline greater than 25% must have a 25-foot buffer between the top of the slope and any land disturbing activity. A variance is required in order to develop on steep slopes within the Critical Area. Outside of the Critical Area, development may occur within steep slope areas as per the provisions of Article 21 of the County Code. These provisions include allowing development if at least 30% of the parcel to be developed has less than 15% grade and is contiguous to a County road that allows direct car access to the principal structure.

There are scattered areas of steep slopes in Glen Burnie, but in general, slopes have not been a prohibiting factor with regard to development in the area.

Forest Conservation

Much of the forest cover in the Glen Burnie planning area is fragmented in small patches, since the majority of the land area is developed. Existing regulations limit clearing and cutting of trees both inside and outside the Critical Area. However, forest loss and fragmentation does occur as a result of development, especially outside the 100-foot Critical Area Buffer. The County administers a Forest Conservation Program in accordance with the requirements of the State Forest Conservation Act. Under this program, development proposals submitted to the County for approval must include a Forest Conservation Plan which identifies and classifies wooded areas on the site and establishes limits of disturbance and areas of forest retention. The Forest Conservation Ordinance specifies conservation and afforestation thresholds according to the type and density of land use. Development plans that propose clearing of existing forested areas must retain at least this minimum threshold, or else the developer will be required to reforest portions of the site or, as a less desirable alternative, to reforest areas offsite. If a developer can demonstrate that reforestation on or offsite cannot be reasonably accomplished, a fee in lieu may be paid to the County's Forest Conservation Fund, to be used by the County in reforesting sites as they become available.

Although both the Critical Area Law and Forest Conservation Act provide for replacement of lost forest land due to development, retention of existing forest and afforestation in areas without forest cover should be encouraged in addition to reforestation. The retention and enhancement of forested areas is important because of the significant air quality, water quality, energy conservation, and wildlife habitat benefits they provide. Trees also provide a message we can feel, simply by being among them. Trees give us a sense of security, of permanence, of strength and of solitude. Schoolyard habitat projects, which create outdoor learning sites that use the wildlife habitat areas as sites for integrated environmental education lessons, can be used as an enhancement to the school curriculum.

Greenways and Protected Lands

Permanently protected land in the Glen Burnie area consists primarily of County-owned parkland. Additional acreage is preserved in dedicated flood plain areas. Much of this area has

been zoned as Open Space by the County. The intention of Open Space zoning districts is to preserve open areas for recreational use and to protect persons and property from the hazards of flooding.

In 2002 Anne Arundel County adopted its first countywide *Greenways Master Plan*. The goal of the plan is to create an interconnected network of greenways in the County that protects ecologically valuable lands for present and future generations and provides open space, recreational, and transportation benefits and opportunities for people. The County used five criteria in assessing land as potential greenways: habitat value; size; connections to other land with ecological value; future potential, that is the potential to create greenways where they do not currently exist; and national and countywide trails. The greenway network is a system of connected hubs and corridors. The plan defines a “hub” as an ecologically significant natural area of at least 250 acres with a high ratio of interior versus edge habitat. A “corridor” is a natural area at least 200 feet wide.

Portions of five segments in the greenway network lie within the Glen Burnie Planning Area: the Cabin Branch Creek, Sawmill Creek, Marley Creek, Marley Creek Corridor, and Magothy River-Stony Creek segments. The amount of acreage in each of these segments (not all of which falls within the Glen Burnie Planning Area) as well as the amount that is considered protected is shown below. Map 9 shows the locations of the greenway segments in the Glen Burnie Area as well as those portions which are currently protected.

Table 12. Greenway Segments in the Glen Burnie Small Planning Area

Segment Name	Total Acres	Protected Acres	Unprotected Acres	Percent Unprotected
Cabin Branch Creek	521	326	195	37 %
Magothy River - Stony Creek	239	52	187	78 %
Marley Creek	3,358	469	2,889	86 %
Marley Creek Corridor	458	133	325	71 %
Sawmill Creek	421	311	110	26 %

In all, the entire greenway network covers over 70,000 acres of land. Approximately 50 percent of the network is currently protected, either as a publicly-owned land, a private conservation land, land that is in the County’s Open Space zoning district, or land protected under an agricultural or environmental easement. In the Glen Burnie Area, as seen on Map 9, most of the Cabin Branch Creek and Sawmill Creek greenway segments are protected as dedicated floodplain areas which are zoned Open Space. Some portions of the Magothy River - Stony Creek greenway segment in the Freetown area are not protected, and a portion of the

Map 9

Marley Creek Corridor greenway segment near Elvaton Road is also not protected. The County will continue to work with other public agencies, land trusts, and private owners to preserve the remaining segments of the greenway network.

Brownfield Sites

With its proximity to the ports and industries of the City of Baltimore, many neighborhoods within the Glen Burnie Planning Area are near commercial and industrial sites. Some of these sites continue to produce, refine and export goods while others have been abandoned or have been adopted for other uses. To ensure that chemical and petroleum products are not discharged into the surrounding ground, land or water the Environmental Protection Agency (EPA) requires that operating industries working with hazardous materials are registered with the local State authority, in this case Maryland Department of the Environment (MDE).

Abandoned or underutilized commercial and industrial sites are referred to as Brownfields. These sites which are usually located in urban areas are either contaminated or perceived to be contaminated. These sites are eligible for State monies to aid in the clean up of hazardous materials through the MDE Voluntary Cleanup and Brownfields Revitalization Incentive Program. This program helps to convert contaminated and vacant sites into usable areas such as warehouses, apartments and other uses.

In 1980, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was passed by congress. This EPA program taxes all chemical and petroleum industries and provides broad Federal authority to respond to the release of or threat of release of hazardous substances that may endanger public health. Hazardous substances are defined as having the potential to contribute to serious illness or has qualities of ignitability, corrosivity, reactivity, and toxicity. The Curtis Bay Coast Guard Yard, located just outside the Glen Burnie planning area, is a Federal Superfund site. Samples collected at the Coast Guard show a presence of semi-volatile organic compounds, metals, polychlorinated biphenyls, pesticides and dioxin. Many of the original sources of these pollutants have been removed, but the contaminated soil and sediment could be a threat to Curtis Creek. The site is pending a decision from the EPA as to whether it will be placed on the National Priorities List of most hazardous sites.

As part of the Smart Growth Initiatives the Maryland Department of the Environment (MDE) instituted the Environmental Restoration and Redevelopment Program (ERRP). This program works like the Federal Superfund Program in that it investigates and monitors the clean up of abandoned and uncontrolled hazardous waste sites to protect the environment and public health. At present there are nine sites on the State Master List that lie within Anne Arundel County, one of which lies within the Glen Burnie Planning Area. The Glen Burnie Landfill located on Dover Street is a closed County Landfill. The facility is now capped by an impermeable cap over the waste and has a leachate collection system to catch rainwater and

prevent percolation and contamination into surface and groundwater.

The State of Maryland has also established two programs to encourage the cleanup and redevelopment of industrial and commercial properties. The Voluntary Cleanup Program streamlines the environmental cleanup process for sites that are contaminated by hazardous substances. The Brownfields Revitalization Incentive Program provides economic incentives such as loans, grants, and property tax credits to clean up and develop certain properties. In Glen Burnie, the Glen Burnie Landfill site and the Federal General Services Administration Depot site on Ordnance Road are both targeted Brownfields Revitalization sites. It will likely be a few to several decades before the Glen Burnie Landfill site can be developed, due to regulatory compliance requirements that the landfill cap remain undisturbed. A portion of the General Services Depot site has been redeveloped as the Baymeadow Industrial Park. It originally served as an Army ordnance depot and was later used for sonar cable manufacturing. Soil and groundwater contamination as the result of improperly stored drums have been remediated through corrective actions. The property is currently being renovated and partially used for light industrial operations.

Historic and Archaeological Resources

Historic Resources

An historic site or property is a site, building, structure, district, or object that is significant in American history, architecture, archaeology, and culture and is generally 50 years old or older. An historic property usually possesses integrity of location, design, setting, materials, workmanship, feeling, and association. It may be of value to the nation as a whole, or important to the State of Maryland, Anne Arundel County, or simply the community in which it is located. An historic property must possess at least one of the following criteria:

- 1) Association with events that have made a significant contribution to the broad patterns of our history;
- 2) Association with the lives of persons significant in our past;
- 3) Distinctive characteristics of a type or period of architecture, method of construction, or the work of a master architect; high architectural value; or representative of a significant and distinguishable entity whose components may lack individual distinction; or
- 4) Potential to yield or have yielded information important in prehistory or history.

Historic resources in Anne Arundel County reflect the County's over 300-year history. The Maryland Inventory of Historic Properties in Anne Arundel County lists over 800 historic resources Countywide. These resources include a diversity of sites and/or properties such as dwellings, agricultural buildings, cemeteries, churches, commercial buildings, industrial and engineering structures, bridges, maritime resources, military structures, small villages and towns,

and scenic and historic roads. Those sites found in the Glen Burnie Small Planning Area are listed in Table 13 and are shown on Map 10. The Glen Burnie Historic District and six Survey Districts, all of which are located in the Town Center area, are shown on Map 11. Most of the County's historic resources are privately owned; fewer than a dozen are open to the public. Within the County, 35 historic properties totaling 636 acres are protected by historic preservation easements that are held either by the Maryland Historical Trust or the National Trust for Historic Preservation.

Table 13. Historic Resources in Glen Burnie Small Planning Area

Site Number	Name	Street Location
AA0060*	Dr. Thomas Brayshaw House	105 Padfield Boulevard
AA0077	Thomas Pumphrey House	Furnace Branch Road
AA0090	Pumphrey House (site)	801 Marley Station Road
AA0117	Jackson's Chance (site)	East Ordnance Road
AA0120	Pumphrey House	Olan Drive
AA0121	Mazie Smith Stoll House	1404 Crain Highway
AA0122	Curtis Creek Iron Furnace (site)	Furnace Branch Road
AA0722	Freetown	Freetown Road
AA0739	John Wesley United Methodist Church	1350 Ritchie Highway
AA0929	Marley Creek B&A Railroad Trestle (site)	B&A Trail over Marley Creek
AA0996*	Glen Burnie Historic District	Greenway & Post 40 Road to Third Avenue
AA1004	J. Parker Farm	Crain Highway
AA1027	J. Merritt House	Cedar Avenue
AA1055	Elvaton House	Jumpers Hole & Elvaton Roads
AA1073	Fernglen	Hopkins St. & Fernglen Avenue
AA1074	Glen Burnie B&A Railroad Trestle (site)	Over Dorsey Road
AA1082	Hodges House	1647 Marley Avenue

Site Number	Name	Street Location
AA1088	Mrs. A. Robinson's Mill (site)	Hospital Drive
AA2065	Gibbs House	115 Old Farm Court
AA2157	Greenway Avenue Survey District #1	Greenway Avenue and area
AA2158	Greenway Avenue Survey District #2	Greenway Avenue
AA2159	Oak Lane Survey District	Oak Lane & B&A Boulevard
AA2160	Eighth Avenue Survey District	8 and 10 Eighth Avenue
AA2161	Georgia Avenue (South Side) Survey District	Georgia Avenue
AA2162	Georgia Avenue & Chinquapin Hollow Survey District	Georgia Ave., Crain Highway, and Maple Lane NW
AA2163	Mewshaw's Store	Greenway Ave. & Crain Highway
AA2164	The Chance Building	7347 Ritchie Highway
AA2165	7351 Ritchie Highway	Ritchie Highway
AA2166	Glen Haven Memorial Park	Ritchie Highway
AA2167	Flynn's Auto Park	Dorsey Road
AA2168	Anne Arundel County Sanitary Commission	7409 B&A Boulevard
AA2169	Glen Burnie Ice Manufacturing Company	7405 B&A Boulevard
AA2198	Curtis Bay Ordnance Depot, Administration Building	East Ordnance Road
AA2241	7840 Freetown Road	
AA2271	2009 Norman Road	
AA2275	207 Shanna Road	

* Eligible for the National Register of Historic Places

Archaeological Resources

In addition to the documented historic resources, Anne Arundel County has more

recorded archaeological sites than any other county in Maryland, with many more sites still to be discovered. These sites span the entire 13,000 years of human presence in the area and represent

Map 10

Map 11

a unique and non-renewable piece of cultural heritage. The assessment of archaeological potential for unknown sites is generally based on topographic and environmental settings. Several nationally significant prehistoric resources, located in the County, include the 13,000 year old Higgins site, the earliest undisturbed site in Maryland; the Garman Site with the oldest fireplaces excavated in the State; and the Adena Site which contains exotic and unexplained artifacts from the Ohio River Valley. The highest potential for prehistoric sites is along the Bay shoreline and its tributaries or the Patuxent River and its tributaries.

Significant historic archaeological sites include the house sites of the County's first European settlement at Providence in 1649; the Steward Colonial Shipyard burned by the British in 1781; and the lost town of London on the South River. While the oldest of these sites are clustered along navigable waterways, later archaeological and historic sites can be found in more wide-ranging locales such as farmsteads or homes along old roads or railroads. In order to preserve and protect archaeological sites, exact locations of these resources are not released to the public.

Along with Federal and State laws protecting archaeological resources, the County Code also protects such sites during the review of residential and commercial subdivisions, critical area allocations, and zoning change requests.

Scenic and Historic Roads

In 1997, the County Council passed Resolution No. 45-97 which requested the County Executive to establish a program to protect, preserve, and recognize the County's scenic and historic roads by restricting changes to their alignment, appearance, and character. The program would have the following components:

1. Procedures for designation and classification of scenic and historic roads,
2. Establishment of measures for protection of designated roads including development of abutting land and improvements to designated roads, and
 - a. Implementation of measures for (a) preservation, (b) protection, and (c) recognition based on the classification of the road.

Within the Glen Burnie Planning Area, the following roads in the Glen Burnie Historic District have been proposed for a Scenic and Historic Road designation under Category 3 for Recognition: First Avenue, Second Avenue, A Street SW, D Street SW, Central Avenue, Greenway, Maple Lane, Oak Lane, Padfield Boulevard, and Crain Highway from Fourth Street to B&A Boulevard. Roads in this category meet the criteria for scenic and historic road designation; however, due to adjacent intensive development or other alterations the integrity of the road has been compromised. For neighborhood roads in this category, protective measures should be utilized to preserve and protect the original integrity of the roads. Adjacent

development or redevelopment should be designed to be compatible with the character of each neighborhood. Landscaping, buffers and other land use mechanisms should be utilized to enhance and maintain the scenic and historic qualities of each neighborhood. While the importance of protecting the scenic and historic aspect of these roads is clear, their protection must be balanced with the need for safe roads and for appropriate development.

Assets and Issues

The Glen Burnie Area contains many miles of shoreline along local creeks draining to Curtis Bay and the Patapsco River. There are some lovely scenic points along these creeks and a diversity of wildlife. However, the quality of these streams has become degraded over many years. Most of the Glen Burnie Area was developed prior to the creation and adoption of the more stringent stormwater management and waste management regulations that are in place today, and as a result area streams have been degraded by siltation, erosion, and pollution. Improvement of the local waterways is a high priority among Glen Burnie residents. The goal is to ultimately see all recreational and fishing advisories lifted so that these local creeks can be safely used for fishing, swimming, boating, and enjoying scenic views.

Goals and Recommendations

Goal: Improve the water quality and overall health of the natural water resources in the Glen Burnie Area.

Recommendations

1. Prepare a watershed management plan for the Patapsco Tidal and Non-tidal watersheds that identifies specific actions needed to improve water quality in area streams. Establish the restoration of Furnace Creek and Marley Creek as a priority environmental program for the next five years.
2. Continue coordination with the Maryland Department of Natural Resources, Department of the Environment, and the Maryland Aviation Administration to implement the restoration strategies recommended by the Sawmill Creek Targeted Watershed Restoration Project.
3. Determine whether waterway improvements, such as dredging, can be made to Wagners Pond, located along Sawmill Creek near Dorsey Road and 8th Avenue, to improve stream flow, decrease siltation in the pond, and create a scenic open area.
4. Provide funding as needed for stream restoration along Marley Creek in the Harundale area.
5. Identify locations where stream restoration, sediment and erosion control, storm drain

retrofits, or other improvements are needed to decrease impacts from stormwater runoff, and develop a feasible and proactive schedule for providing these retrofits. Pursue incentive-based approaches to encourage property owners to retrofit their properties with up-to-date stormwater management facilities.

6. Establish a regulatory mechanism to protect non-tidal stream buffers by requiring a minimum width of undisturbed riparian buffer along all intermittent and perennial streams.
7. Identify potential wetland mitigation sites in the area, and maintain an up-to-date inventory of suitable sites.
8. Continue to conduct regular inspections and maintenance of all sewage pump stations along Marley and Furnace Creeks to prevent, to the extent possible, any sewage overflows into the creeks and their tributaries.

Goal: Maintain a system of open spaces, natural areas, and greenways that is well managed and protected.

Recommendations

1. Establish an ecological greenway network in the area to protect important natural resource areas.
2. Identify specific parcels of land in the Countywide *Greenways Master Plan* that are not protected, as shown on Map 9, and use available mechanisms to preserve these areas.
3. Identify scenic natural areas along Furnace Creek, Back Creek, and Marley Creek and seek opportunities to preserve them and to provide nature trails and/or observation sites for passive public use.
4. Identify potential reforestation sites, especially in riparian buffers along Marley, Furnace, and Sawmill Creeks, and target reforestation funds to those areas.

Goal: Promote environmental stewardship through education, volunteer programs, and community partnerships.

Recommendations

1. Foster community education about environmental issues through cooperation with local citizen groups, public and private schools, park and recreation programs, and use of the internet.

2. Increase public awareness of existing land preservation programs such as the Maryland Environmental Trust.
3. Report to the public all water quality data collected from area creeks, including Marley Creek and Furnace Creek, by posting the data on the County Health Department web site.

Goal: Improve air quality in the region.

Recommendations

1. Work with other jurisdictions in the Metropolitan Baltimore Air Quality Control Region to establish and implement regional policies and measures to reduce ozone levels in the EPA-designated Non-Attainment Area.
2. Adopt land use and transportation plans that encourage mixed use development, public transportation, car pooling, and walking in order to reduce automobile traffic and ozone levels.