CITY OF ABERDEEN COMPREHENSIVE PLAN

2011

"Home of Opportunity"

Credits

Aberdeen Planning Commission

Joe Swisher- Chairman
Nancy Kosko, Vice Chairman
Dr.William Braerman
Karen Heavey
Lance Hersh
Terri Preston
Mark Schlottman
Wesley Tout

Mayor Michael Bennett
Councilwoman Ruth Elliott
Councilman Bruce Garner
Councilwoman Sandra Landbeck
Councilwoman Ruth Ann Young

Douglas Miller, City Manager
Phyllis Grover, Director of Planning and Community Development
Matthew Lapinsky, Director of Public Works
Randy Rudy, Chief of Police
Gilbert Jones, Senior Planner
Richard Kosko, Engineering Tech
Kate Autry, Grant Coordinator
Judy Hinch, Aberdeen Fire Department

PLANNING COMMISSION RESOLUTION
ADOPTING
2011 COMPREHENSIVE PLAN

WHEREAS, the City of Aberdeen, Maryland (the "City"), the Planning Commission, the Department of Planning and Community Development, and the City Council have engaged in the process of updating and revising the Comprehensive Plan for the City, which is attached hereto and which is comprised of Chapters 1-11.

WHEREAS, the Planning Commission conducted a Public Hearing on March 9, 2011, regarding the 2011 Comprehensive Plan and desires to adopt the Comprehensive Plan and to further recommend to the City Council to adopt the Comprehensive Plan for the City.

NOW, THEREFORE BE IT RESOLVED, by the Planning Commission of the City of Aberdeen, Maryland, that said Planning Commission hereby adopts the 2011 Comprehensive Plan, and further recommends to the City Council that it likewise adopt the 2011 Comprehensive Plan for the City.

ADOPTED by the Planning Commission of the City of Aberdeen, Maryland this 13th day of April, 2011.

Planning Commission of the
City of Aberdeen, Maryland

JOE A. SWISHER, Chairman

ATTEST:

Recording Secretary

COUNCIL OF THE CITY OF ABERDEEN
Ordinance No. 11-O-06

Introduced By:	**Mayor Michael E. Bennett**
Date Introduced:	**May 9, 2011**
Public Hearing:	**May 23, 2011**
Date Adopted:	**June 13, 2011**
Date Effective:	**July 3, 2011**

ORDINANCE NO. 11-O-06
COMPREHENSIVE PLAN 2011

FOR THE PURPOSE OF ADOPTING A COMPREHENSIVE PLAN (the "Plan") FOR THE CITY OF ABERDEEN AND ALL MATTERS PERTAINING TO THE PLAN

WHEREAS, Maryland Annotated Code, Article 66B requires municipalities to periodically adopt comprehensive plans, including policies, statements, goals and interrelated plans for private and public land use, transportation and community facilities, documented in texts and maps, which constitute the guide for future development; and

WHEREAS, the City of Aberdeen adopted such a comprehensive plan for the City in 1969, 1994, and 2002; and

WHEREAS, beginning January 23, 2008 to April 13, 2011, the Planning Commission held numerous meetings where each element of the Plan was carefully reviewed and updated; and

WHEREAS, on April 13, 2011, the Planning Commission adopted the final draft Plan by Resolution and pursuant to Maryland Annotated Code, Article 66B, provided copies of the recommended Plan to Harford County Government, Department of Planning and Zoning, and to the Maryland Department of Planning which have responsibility for financing or constructing public improvements necessary to implement the Plan; and

WHEREAS, on March 9, 2011, the Planning Commission conducted a public hearing with regard to the Plan; and

WHEREAS, on April 13, 2011 the Planning Commission approved the Aberdeen Comprehensive Plan 2011 at their regular meeting and recommended the Plan to the Mayor and Council of the City of Aberdeen; and

WHEREAS, on May 23, 2011 the Mayor and Council conducted a public hearing with regard to the Plan; and

WHEREAS, the Mayor and Council has determined that it is in the public interest that the Plan, recommended by the Planning Commission, be adopted as the Comprehensive Plan for the City of Aberdeen.

NOW, THEREFORE, BE IT ENACTED by the Mayor and Council of the City of Aberdeen that the City of Aberdeen Comprehensive Plan, a copy of which is attached to this Ordinance, is hereby adopted. The Plan shall be known as the "City of Aberdeen Comprehensive Plan 2011".

AND BE IT FURTHER ENACTED, upon motion duly made and approved by the Mayor and Council, the above Ordinance is hereby adopted and shall be effective at the expiration of twenty (20) calendar days after date of the adoption.

COUNCIL OF THE CITY OF ABERDEEN

Michael E. Bennett, Mayor

Ruth E. Elliott, Councilwoman

Bruce E. Garner, Councilman

Sandra J. Landbeck, Councilwoman

Ruth Ann Young, Councilwoman

ATTEST:

Monica A. Correll, City Clerk

Date June 13, 2011

SEAL

TABLE OF CONTENTS

Chapter 1 – INTRODUCTION

The Comprehensive Plan is an official long-range policy statement adopted and amended by formal resolution of the City Council. It is a major component of the planning process for the City as it guides the long-range, comprehensive decision-making process involving primarily physical development and those City actions expected to influence development in the long-term. The Comprehensive Plan contains goals, objectives, policies, and guidelines for growth and redevelopment for the City.

MARYLAND PLANNING LEGISLATION

The State of Maryland delegates planning and land use regulatory authority to all incorporated municipalities through Article 66B of the Maryland Annotated Code. Article 66B also authorizes local jurisdictions to prepare comprehensive plans, zoning ordinances, and subdivision regulations. The Comprehensive Plan is reviewed by the Aberdeen Planning Commission for updates at least once every six years pursuant to the Economic Growth, Resource Protection and Planning Act of 1992. In 2006, the Maryland General Assembly passed House Bill 1141 and House Bill 2, incorporating measures effecting comprehensive plans, annexations, and land preservation programs. As a result of these bills, three new elements are incorporated in the 2011 Comprehensive Plan: Water Resources Element, Municipal Growth Element, and Housing Element.

The State of Maryland's twelve new Planning Visions, outlined in the Smart, Green & Growing legislation of 2009, are incorporated throughout the Comprehensive Plan:

1. **Quality of Life and Sustainability**: A high quality of life is achieved through universal stewardship of the land, water, air, and protection of the environment.

2. **Public Participation**: Citizens are active partners in the planning and implementation of community initiatives.

3. **Growth Areas**: Growth is concentrated in existing population and business centers.

4. **Community Design**: Compact, mixed-use, walkable design, consistent with existing community character and located near available or planned transit options, is encouraged to ensure efficient use of land and transportation resources.

5. **Infrastructure**: Growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.

6. **Transportation**: A well-maintained, multimodal transportation system facilitates the safe, convenient, affordable, and efficient movement of people, goods, and services within and between population and business centers.

7. **Housing**: A range of housing densities, types, and sizes provides residential options for citizens of all ages and incomes.

8. **Economic Development**: Promoting job growth, business vitality, and employment opportunities is essential to continue our prosperity.

9. **Environmental Protection**: Land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems, and living resources.

10. **Resource Conservation**: Waterways, forest, agricultural areas, open space, natural systems, and scenic areas are conserved.

11. **Stewardship**: Government, business entities, and residents create sustainable communities by balancing efficient growth with resource protection.

12. **Implementation**: Strategies, policies, programs, and funding for growth and development, resource conservation, infrastructure and transportation are integrated across local, regional, state, and interstate levels.

HISTORY OF PLANNING IN ABERDEEN

The City of Aberdeen adopted its first full scale-zoning ordinance in 1957 and its first comprehensive plan in 1969.

The City updated the 1994 Comprehensive Plan in 2002 to comply with the revised State Article 66B and the Smart Growth Priority Funding Areas Act of 1997.

USE OF A COMPREHENSIVE PLAN

The Plan represents the vision for the City of Aberdeen in an orderly and desirable growth pattern. Changes to the Plan may be initiated via private application and/or the normal process of updating the Plan by the City every 6 years.

The purpose of a comprehensive plan is to give direction to both public and private decisions so that the City can realize the most beneficial arrangement of land uses, as well as the orderly and economic delivery of public services for present and future residents.

A comprehensive plan provides a basis for intelligent discussion between the public and its elected representatives on the future development of their community. It also coordinates decision-making within and between public and private entities in order to achieve a healthful and balanced environment.

An adopted comprehensive plan will represent a basis for decision-making in the City of Aberdeen. The comprehensive plan is intended to be the guide for the day-to-day decisions regarding development and growth. To be used, the plan must be accepted, understood, and supported by the elected officials who are charged with the responsibility of decision-making. In addition, citizens who recognize the benefits that can result from wise foresight should also support the plan.

To be effective, the plan must be geared toward the social, economic, and environmental realities of today, yet it must promote the balanced services and facilities required by the citizenry of the future. By adopting such a plan, decisions will be made, funds will be allocated, and programs will be initiated and accomplished.

The Comprehensive Plan for the City of Aberdeen shall be hereinafter referred to as "the Plan."

U.S. DEPARTMENT OF DEFENSE BASE REALIGNMENT AND CLOSURE (BRAC) FOR 2005 – 2011

The latest round of BRAC is being described as the most important economic event in Maryland since World War II. The City of Aberdeen recognizes that BRAC will be a major source of economic and demographic expansion for the City, Harford County, and the State of Maryland.

As cited in the Aberdeen Proving Ground (APG) Regional Workforce Analysis prepared by New Economy Strategies LLC and AKRF, Inc., dated December 2009, BRAC 2005 will result in the relocation of at least 8,200 net new jobs to APG in Harford County. The movement of these jobs into the region is projected to create thousands of indirect and induced positions throughout Harford County and the surrounding counties. New residents and jobs will put increased pressure not only on roads and other infrastructure, but also on local school systems, hospitals, police and fire service, and other public services.

The Plan will provide the basis for growth for our future population as it relates to BRAC and will address the existing needs of our citizens and businesses.

Chapter 2 – LAND USE ELEMENT

INTRODUCTION

The Plan is organized, designed, and implemented to orchestrate growth in the City in terms of (a) existing and future land uses, (b) scale and intensity of land uses, (c) phasing of support infrastructure, and (d) ensuring development strategies that maintain and enhance the quality of life of current and future residents.

PLANNING APPROACH

The Plan incorporates an approach to urban planning which emphasizes the critical importance of (1) conserving the City's resources, (2) incorporating the State of Maryland's Smart Growth principles, and (3) implementing requirements of House Bill 1141 (inclusion of a Land Use Element, Municipal Growth Element, Community Facilities Element, and Water Resources Element).

This Plan and related growth management strategies translate into a sequenced allocation of land uses that will achieve the State of Maryland's goal for Smart Growth. The objective of the plan is to provide the City with a framework for deciding on both the appropriateness and timeliness of private development proposals within the context of the adopted goals, objectives, and policies for growth.

DESCRIPTIONS OF EXISTING ZONING DISTRICTS AND ALLOWED DENSITIES

The Current Land Use Map provided on page 2-9 depicts the existing zoning categories within the corporate limits of Aberdeen as described below. For more detailed information on zoning please refer to the Code of the City of Aberdeen, Chapter 235, Development Code.

Residential

R-1 Low Density Residential District. The purpose of this district is to provide for single family, low-density residential development, together with such public buildings, schools, churches, public recreational facilities and accessory uses as may be necessary or are compatible with residential surroundings. This district is designated to protect existing development of high character and vacant land considered appropriate for future development. The R-1 allows detached single-family dwellings with a minimum lot area of 15,000 square feet.

R-2 Medium Density Residential District. The purpose of this district is to provide for single-family and two-family residential developments of city-scale character, together with such public buildings, schools, churches, public recreational facilities, and accessory uses as may be necessary or which are normally compatible with residential surroundings. The R-2 allows

detached single-family dwellings with a minimum lot area of 7,200 square feet and semi-detached or two-family dwellings with a minimum lot area of 9,000 square feet.

R-3 High Density Residential District. The purpose of this district is to provide for a high density residential district within the City, together with such public buildings, schools, churches, public recreational facilities, and accessory uses as may be necessary or are normally compatible with residential surroundings. The R-3 allows detached single-family dwellings with a minimum lot area of 5,000 square feet; semi-detached or two-family dwellings with a minimum lot area of 7,000 square feet; quad, garden, or mid-rise apartments that are 1 to 5 stories with a minimum lot area of 7,500 square feet; and townhouses with a minimum lot area of 2,500 square feet.

Residential Overlay (RO) District. The purpose of this district is to recognize existing uses within certain R-3 zones within the City, to grant principal permitted use status to existing uses, to avoid creation of nonconforming uses, and to prohibit multi-family uses within the district except those uses existing as of the effective date of the Development Code.

Business

B-1 Neighborhood Business District. The purpose of this district is to provide limited retail and service facilities convenient to residential neighborhoods. The allowable uses are limited primarily to convenience goods and service facilities satisfying the household and personal needs of the residents of abutting residential neighborhoods. Standards are established compatible with low-density residential districts, resulting in similar building bulk and low vehicular traffic. Off-street parking is required. The B-1 does not require a minimum lot area.

B-2 Central Commercial District. The purpose of this district is to provide retail and office development within the central business district of the City. Appropriate uses are generally the same as for the B-1 District, but with altered yard requirements and altered off-street parking requirements in recognition of the practical difficulty of providing off-street parking in the central business district, and in recognition of the collective responsibility to provide off-street parking for smaller establishments. Development/redevelopment in this district shall be compatible with the existing historic, aesthetic, and pedestrian character of the downtown area in terms of scale and design. Residential uses are appropriate in this district. The B-2 does not require a minimum lot area.

B-3 Highway Commercial District. The purpose of this district is to provide for a number of retail and office establishments and commercial services for use by the traveling public on or near major roads or streets in the City and at the same time is intended to maintain the appearance of the highways and their access points by limiting outdoor advertising and establishing high standards for development. Commercial development in this district shall be in the form of well-planned and heavily buffered commercial concentrations as opposed to traditional forms of highway strip commercial. Off-street parking is required pursuant to the Aberdeen Development Code. The B-3 does not require a minimum lot area.

Industrial

M-1 Light Industrial District. The purpose of this district is to provide for light manufacturing, fabricating, warehousing, and wholesale distributing in low-rise buildings with off-street loading and off-street parking for employees with access by major thoroughfares or rail. Commercial uses are permitted, primarily for service to employees in the district. The M-1 has a minimum lot area requirement of 1 acre.

M-2 Heavy Industrial District. The purpose of this district is to provide for industrial operations of all types which are not likely to create any more offensive noise, vibration, dust, heat, smoke, odor, glare, or other objectionable influences than the minimum amount normally resulting from uses specifically permitted. The M-2 has a minimum lot area requirement of 1 acre.

Office/Research/Educational

ORE Office/Research/Educational District. The purpose of this district is to provide for the development of a mixed-use office/research/educational park with supporting or complementary uses. The ORE has a minimum parcel size of 10 acres.

Agricultural

AG Agricultural District. The purpose of this district is to provide for agriculture as the primary use by providing large areas suitable for agriculture and related uses. Low-density residential development is a permitted use. This is normally a transitional zoning until development requirements can be reviewed and approved. Farm animals are not permitted within the City limits.

Integrated Business

IBD Integrated Business District. The purpose of the Integrated Business District is to provide for recreational, entertainment, commercial, and residential uses in a compatible manner, is sensitive to the environmental characteristics of the land, and facilitates the efficient use of services. The object is to promote creativity of design, flexibility among uses, and design schemes that create appeal within the district. These uses will be integrated through site plan and architectural design requirements. The Integrated Business District will maintain a common theme and character through the use of specific zoning regulations, design requirements, and architectural review procedures. Development in this district is subject to review by the Aberdeen Architectural Review Committee.

Special Overlay Districts

Downtown Revitalization Overlay District. The purpose of this district is to build upon the existing assets located in downtown, such as the Aberdeen Train Station, Post Office, Festival Park, Aberdeen Senior Center, Aberdeen Municipal Complex, and other government and

commercial service uses. This district is subject to design requirements and review by the Aberdeen Architectural Review Committee.

I-95 Overlay District. The purpose of this district is to provide a planned unit development of high quality, single-family residences, office, research, and educational uses in a campus-like setting and complementary commercial/recreational uses. This district is subject to design requirements and review by the Aberdeen Architectural Review Committee.

The Downtown Revitalization Overlay District, I-95 Overlay District, and Architectural Review Committee were all approved by action of the Aberdeen City Council in 2002.

DESCRIPTIONS OF LAND USE CATEGORIES AND ALLOWED DENSITIES

Land Use Categories

The Plan describes three major land use categories: Residential, Commercial, and Industrial. Each will accommodate a range of land uses within the City. Future planned growth is discussed further in Chapter 3 – Municipal Growth Element.

Residential

Residential land uses have been identified for Chapter 3 – Municipal Growth Element, each with a dominant housing type selected and defined, based on its suitability for future housing needs of the City of Aberdeen: Low-Density Residential, Medium-Density Residential, and High-Density Residential.

The Low-Density Residential land use is to provide for single-family residential development of spacious character, together with public buildings, schools, churches, public recreational facilities, and accessory uses as may be necessary or are compatible with residential surroundings.

The Medium-Density Residential land use is to provide for single-family and two-family residential developments of urban character, together with such public buildings, schools, churches, public recreational facilities, and accessory uses as may be necessary or which are normally compatible with residential surroundings.

The High-Density Residential land use is to provide for single-family detached and attached, garden style apartments/condominium units, and/or senior housing, together with such public buildings, schools, churches, public recreational facilities, and accessory uses, as may be necessary or are normally compatible with residential surroundings.

Commercial

Commercial land uses have been identified for Chapter 3 – Municipal Growth Element as Central Commercial, Neighborhood Commercial, and Highway Commercial. Historically, the

City's center of commerce has been the downtown business district and it is the subject of continued redevelopment efforts by the City. The Plan's economic development goals emphasize the City's desire and commitment for the existing downtown to serve as a location for carefully selected new retail shopping, professional offices, cafés and restaurants, a multi-modal transportation hub, and service-oriented businesses. It is recognized that US Route 40 (Philadelphia Boulevard), MD Route 132 (Bel Air Avenue), and the Beards Hill Road area will continue to be the major shopping areas for Aberdeen. The City offers four incentive programs for businesses to locate on US Route 40: 1) Greater Aberdeen – Havre de Grace Enterprise Zone, 2) Historically Underutilized Business (HUB) Zone, 3) Aberdeen BRAC Revitalization and Incentive Zone, and 4) Aberdeen Community Legacy Area.

The Central Commercial land use applies to all businesses situated within the downtown area. Proposed uses within the downtown are to be compatible with the scale and character of the existing downtown. This area includes parts of Bel Air Avenue and US Route 40.

The Central Commercial land use recognizes the unique aspect of providing essential public services and infrastructure to meet the changing needs of the downtown. Development intensities will depend on the particular intended use, physical characteristics, access and parking requirements, and other infrastructure demands.

The Central Commercial land use recognizes special opportunities for transit-oriented development, to include the multi-modal transportation center and mixed-use projects. All new development in the Central Commercial area shall comply with the Aberdeen Overlay District Regulations and Design Requirements.

The Neighborhood Commercial land use is intended to address peripheral business-related uses lying outside the Central Commercial boundaries. Neighborhood Commercial is intended to address new and existing retail/service development of low intensity in carefully chosen locations within Aberdeen and the future growth areas.

The Neighborhood Commercial land use designation should not encourage or provide for conventional shopping centers or large-scale freestanding retail establishments. To the extent achievable, the Neighborhood Commercial environment must be compatible in physical scale and architectural themes with surrounding residential neighborhoods. Neighborhood Commercial uses include small retail, convenience goods, and personal services primarily for the immediate neighborhood.

The Highway Commercial land use is intended to provide for offices, retail uses, hotels, and restaurants. This includes complimentary support retail, such as freestanding banks, fast-food restaurants, recreational entertainment, and other uses which frequently locate on major highways and commercial corridors. This use serves primarily community level shopping demands. Proposals should include analyses that address traffic, noise, air quality, point and non-point source pollution, impacts to adjoining neighborhoods, and other environmental considerations relevant to the given site. Any proposed commercial uses shall be buffered from adjoining residential areas per the requirements of the Aberdeen Development Code.

Industrial

The Light Industrial and Mixed Use-Planned Employment Center land use categories have been identified for Chapter 3 – Municipal Growth Element to guide light industrial-related activities and major employment centers within the City and future growth areas**.** The Plan promotes development of research and development facilities, high-tech businesses, corporate centers, training centers, and professional offices. Any proposed industrial uses shall be buffered from residential areas per the requirements of the Aberdeen Development Code and/or the inclusion of transitional uses (i.e., business offices or public uses) where possible.

The Light Industrial land use provides for existing warehouse distribution facilities that may be re-developed into such uses as light manufacturing, retail, research and development, and construction services.

The Mixed Use-Planned Employment Center land use provides for a variety of commercial and employment uses:

1. Restaurant
2. Office/Research/Institutional
3. Hotel/Motel
4. Conference Centers
5. Technical and Specialty Schools
6. Technology based industries and Corporate Centers

ANNEXATION TRENDS: 1995 - 2010

The City has only annexed land when a property owner has petitioned for annexation. From the period of 1995 through 2010, the City annexed 632.31 acres, of which 106.70 acres were zoned residential, 262.58 acres were zoned commercial, and 263.03 acres were zoned industrial. From 2005 to the present, the City has reviewed 16 petitions for annexation with a total acreage of 1,497.51 acres. In 2008, the City adopted an annexation procedure that requires detailed information on the use of the land proposed for annexation, the impact on public services and facilities, identification of environmental characteristics, and the fiscal impact to the City. These annexation procedures can be found in Chapter 3 – Municipal Growth Element.

In reviewing future annexation requests, the conceptual development plans must be consistent with the respective planning area. The City must plan for a mix of uses throughout the areas planned for growth. The Plan must define a place where people and investment will be attracted, thereby creating value in the areas targeted for growth. Creating value includes planning for mixed-use residential in underutilized areas, and targeting areas for redevelopment and growth near commercial centers and places of employment. This is consistent with Smart Growth principles that development is concentrated in suitable areas and supports new housing opportunities near the workplace. The Plan must also work financially for the City and growth cannot overburden the existing residents, businesses, and/or resources.

AVAILABLE LAND CAPACITY INVENTORY

An inventory of available land within the City of Aberdeen was performed in July 2007 and recently updated for this Plan. The inventory included all publicly and privately owned land, open space that is reserved and platted, and remaining undeveloped land. Table 2-1 shows the total City land inventory of 4,096 acres; Table 2-2 shows the remaining lands available for development within the current corporate limits, a total of 688 acres.

TABLE 2-1

INVENTORY OF BUILD OUT ACREAGE BY LAND USE			
Type/use	Acreage	Total of City of Aberdeen land (%)	Developable?
Residential	197	4.81	Yes
Commercial	129	3.15	Yes
Industrial	121	2.95	Yes
Integrated Business	241	5.88	Yes
Open Space	120	2.93	No
Non-buildable	27	0.66	No
Developed	3,261	79.62	n/a
Total City of Aberdeen area	**4,096**	**100**	

TABLE 2-2

BUILD OUT ACREAGE INVENTORY BY ZONING/LAND USE			
Use/Zoning District	Acreage	Square Feet	Developable?
Residential (R-1)	50	2,178,000	Yes
Residential (R-2)	76	3,310,560	Yes
Residential (R-3)	71	3,092,760	Yes
Commercial (B-1)	6	261,360	Yes
Commercial (B-2)	5	217,800	Yes
Commercial (B-3)	118	5,140,080	Yes
Light Industrial (M-1)	79	3,441,240	Yes
Heavy Industrial (M-2)	42	1,829,520	Yes
Integrated Business District	241	10,497,960	Yes
Total of Area	**688**	**29,969,280**	

In order to adequately plan for growth, the City of Aberdeen has studied all of the land within the corporate limits and within a one-mile radius of the existing City boundaries. Aberdeen has certain advantages over Harford County and the other two municipalities due to the proximity

and intensity of BRAC activities. BRAC has been a catalyst for many new development and redevelopment projects in the City. Aberdeen is expected to become a technology hub for the region and is projected to be the future home of a multimodal transportation center that will be used daily by hundreds of commuters.

PROPOSED DEVELOPMENT WITHIN ABERDEEN

The City is planning for an adequate supply of residential development to meet existing and future demands, and commercial development that supports the needs of these new residents. Aberdeen promotes the concept of being a community where people work, shop, and live. Aberdeen should also continue its efforts in seeking professional office uses that support government activities and attract higher paying jobs.

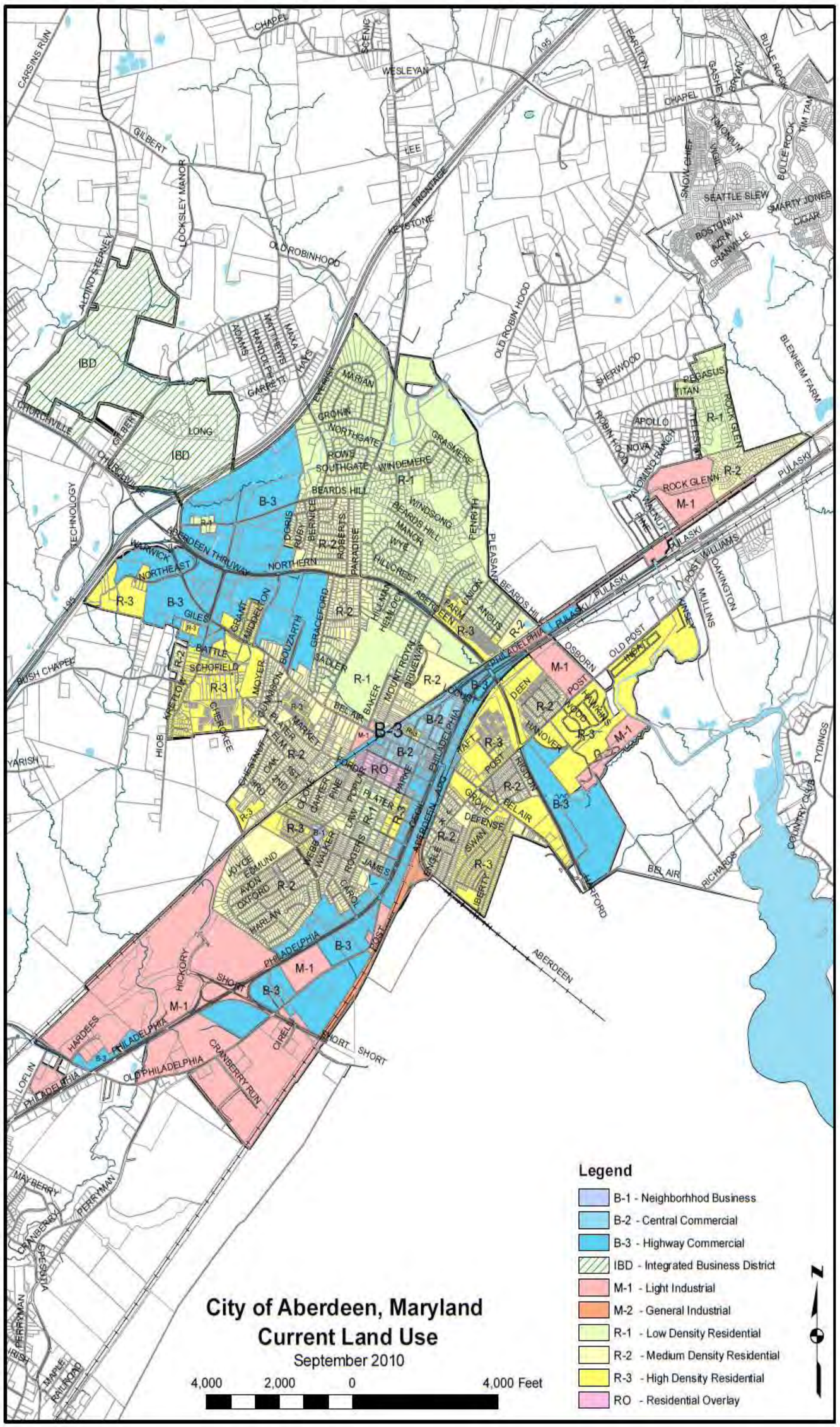
Tables 2-3 and 2-4 indicate the most recent planned and approved residential and commercial developments to be located within the City. All public infrastructure needed to support these development projects will be financed by the developer. All residential development projects will also be required to pay the necessary Harford County School Impact Fees.

Table 2-3: Planned and Approved Residential Development Projects

Name of Proposed Project	Type and Number of Dwelling Units	Zoning/Land Use
Eagles Rest	132 single family	IBD/Mixed Use
The Village at Carsins Run	680 units – continuing care retirement community	IBD/Mixed Use
Fields at Rock Glenn	101 single family	R-2 Single Family Residential
Fieldside Village	140 condominiums	IBD/Mixed Use
Winston's Choice	32 townhouses	R-3 Multi-family Residential
Winston's Choice Addition	22 townhouses	R-3/Multi-family Residential
Baldwin's Addition	2 single family	R-2/Two family residential
Baltimore Park	2 single family	R-2/Two family residential
Total	**1111**	

Table 2-4: Planned and Approved Commercial Development Projects

Name of Proposed Project	Type	Zoning/Land Use
Hampton Inn	Hospitality	B-3/Highway Commercial
Holiday Inn Express	Hospitality	B-3/Highway Commercial
Aberdeen Corporate Park	Office/Retail	B-3/Highway Commercial
Greenway Business Park	Office	M-1/Light Industrial
Rite Aid Pharmacy	Retail	B-3/Highway Commercial
Comfort Suites	Hospitality	B-3/Highway Commercial
Royal Farms Store	Convenience/Retail	B-3/Highway Commercial
North Gate Business Park	Office	B-3/Highway Commercial
Commons at Fieldside Village	Office	IBD/Integrated Business


City of Aberdeen, Maryland
Current Land Use
September 2010
4,000 2,000 0 4,000 Feet
Legend
B-1 - Neighborhhod Business
B-2 - Central Commercial
B-3 - Highway Commercial
IBD - Integrated Business District
M-1 - Light Industrial
M-2 - General Industrial
R-1 - Low Density Residential
R-2 - Medium Density Residential
R-3 - High Density Residential
RO - Residential Overlay
N

GOALS AND OBJECTIVES

The Plan is designed to be a guide for the physical development of Aberdeen until 2030. A comprehensive plan should be structured with the direction of the community's vision for its future.

The 2011 goals and objectives will encompass the following general categories:

(1) Land Use
(2) Adequate Public Facilities and other Public Requirements
(3) Transportation
(4) Housing
(5) Quality of Life, Recreation, and Open Space
(6) Economic Development
(7) Environment
(8) Architectural and Streetscape Design
(9) Historical and Cultural Resources
(10) Implementation

Within each of these particular categories, the following statements of goals and objectives have been developed for the purpose of developing the quality, scale, theme, and timing of future development within the City. These adopted goals and objectives set the physical, social, economic, and cultural framework around which the Plan is designed.

This is a critical stage in the planning process. The goals and objectives, adopted by the City Council, will be used to develop the land use recommendations and development strategies of the Plan. This ensures that the Plan has been constructed on a firm social, economic, ethical, and legal foundation.

Definitions

Goal: An end result or achievement toward which efforts are directed; a basic area of concern that is broad in nature.

Objective: An end that is a measurable component of a goal and is foreseeably attainable. The accomplishment of an objective achieves some fraction of a goal.

1. Land Use

A. Goal: The Plan reflects the optimal land uses for the City of Aberdeen at its long-range, full development scenario, consistent with Smart Growth principles.

B. Goal: The Plan provides for an integrated mix of residential, commercial, and employment uses in the City that will accommodate adequate housing and economic development opportunities for present and future residents.

Infill and Redevelopment

- Objective: Identify properties for infill and re-development opportunities in the commercial areas and residential neighborhoods.
- Objective: Promote revitalization of older neighborhoods.
- Objective: Encourage connectivity between infill and re-development sites and existing communities by providing public sidewalks.

Land Development

- Objective: Develop zoning requirements that support mixed land use design, Transit Oriented Development (TOD), Main Street development, and urban revitalization.
- Objective: Develop a zoning district that allows transit supportive land uses around the Aberdeen Train Station.
- Objective: Create incentives for new businesses and residential development that support TOD and urban revitalization.
- Objective: Maintain an inventory of available land within the City that has development potential.
- Objective: Plan for development of land within a one-mile radius of the City limits to address possible future annexations.
- Objective: Encourage community and stakeholder collaboration in all development decisions and annexation processes.

2. Adequate Public Facilities and other Public Requirements

A. Goal: The planning and programming of all City services, utilities, and facilities is compatible with the Plan.

B. Goal: The nature, scale, timing, and implementation of all private development proposals includes a provision for adequate public facilities.

- Objective: Develop and adopt an Adequate Public Facilities Ordinance to require improvements to public facilities, including transportation facilities that support development.

- Objective: Develop multiple drinking water supply sources with a long-term capital improvement program for the water supply and fire protection requirements of the City.

- Objective: Develop wastewater system requirements with a long-term capital improvement program consistent with the Plan and State requirements.

- Objective: Promote innovative and cost-saving strategies for the logical and orderly extension of necessary public facilities to include transportation facilities and other related services.

- Objective: Coordinate with Harford County Government to ensure that effective planning and implementation occurs for public facilities and utilities located adjacent to the City limits.

3. Transportation

A. Goal: The existence of a fully integrated transportation system that provides relevance and convenience for all travel modes and users in adherence, as closely as possible, to the Transportation Element of the Plan.

- Objective: Plan for a variety of transportation choices in the City that are safe and efficient for all users.

- Objective: Plan for public transportation options and site planning particularly related to employment centers, park-and-ride lots, and neighborhoods.

- Objective: Plan and provide for complete streets that are designed and operated to enable safe access and circulation for all users. The establishment of bike lanes on roads should be encouraged, especially when it might be the only option for providing a needed bicycle route.

B. Goal: The establishment and reservation of the proper locations, alignments, and rights-of-way for future roads and streets to ensure that these improvements can be implemented in a cost-effective manner.

- Objective: Plan for system improvements for transportation elements through the capital budget, and/or through impact fees (or other system development charges) assessed to developers.

- Objective: Adopt bicycle and pedestrian facility network plans as part of the Transportation Element and as a way to promote healthy and sustainable alternatives to automobile-dependent travel.

- Objective: Establish the general location and timeframe for the proposed street network as provided in the City's Major Thoroughfare Plan.

- Objective: Regularly review and amend, as necessary, the City's road design standards and account for the preservation of rights-of-way, design, construction, and reconstruction of roads. The standards should be revised, as needed, to include provisions for the safe accommodation of pedestrians, cyclists, and transit operations.

- Objective: Work with Harford County on the development of the Bicycle and Pedestrian Master Plan, to ensure that efforts are coordinated and that County and City facilities are connected to the maximum extent feasible.

C. Goal: Properly planned access points to undeveloped properties in the City and future annexation areas are provided in development plans.

- Objective: Establish the reservation of proper access points to existing and proposed roadways via the zoning and subdivision process.

- Objective: New developments are designed for pedestrian and transit accessibility through the provision of streets, paths, and site design/layout that recognize best practices for safety, comfort, and convenience.

D. Goal: Options are identified and evaluated for creating a multi-modal transportation center in the City to support BRAC and other potential growth.

- Objective: Promote improved connections between transportation modes and alternatives to single-occupancy vehicular travel through the establishment of a multi-modal transportation center in the City.

- Objective: Seek supporting services for the proposed multi-modal transit center, such as office and mail services, coffee shop, and newsstand.

- Objective: Coordinate with transit operators (Harford County Transit Services, Maryland Transit Administration [MTA], Greyhound Connect, and Amtrak) to identify operational issues and facility needs to improve the quality of transit service provided within the City.

- Objective: Identify opportunities for transit-focused development and re-development that are consistent with the land use plans and policies for public safety and economic development.

E. Goal: A uniform and integrated approach for pedestrian movement in the City is provided.

- Objective: Evaluate pedestrian connections to transit stops, schools, commercial centers, and other important activity centers to identify deficiencies and establish priorities for improvement.

- Objective: Create walkable neighborhoods during the development process.

- Objective: Identify existing and planned walkways, transit stops, and bicycle routes on development and re-development plans.

F. Goal: The movement of people, goods, and services by a variety of transportation modes, and to support local and regional businesses, is accommodated.

- Objective: Identify and protect needed rights-of-way for transportation system improvements.

- Objective: Review the road classifications in the Aberdeen Subdivision Regulations as they relate to adjacent land use and mode priority, accommodate truck mobility to the City's industrial and commercial land uses, and preserve residential street quality for pedestrians and community life.

4. Housing

A. Goal: A range of housing opportunities and choices exist for present and future residents.

- Objective: Provide a wide range of housing opportunities and choices.

- Objective: Emphasize quality site planning and architectural design in future development for all housing types.

B. Goal: Smart Growth principles are incorporated throughout the Plan.

- Objective: Provide for the efficient use of infrastructure and the land for all proposed developments.

- Objective: Provide for integrated mixed uses, including residential, commercial, employment/office, recreation, and open space, where feasible.

- Objective: Provide opportunities for Transit Oriented Design and promote a mixture of uses in close proximity to the Aberdeen Train Station including office, residential, retail, and civic.

C. Goal: Architectural design and site planning standards are implemented for all types of new residential development.

- Objective: Prepare architectural design guidelines for new residential developments.

- Objective: Implement the use of sustainable design and the building of pedestrian and recreation amenities.

D. Goal: Sub-standard dwellings are identified and placed in an active housing support program in an attempt to upgrade the housing.

- Objective: Review all housing controls for the possibilities of modifying regulations.
- Objective: Consider amendments to the Environmental Control Code.
- Objective: Consider adoption of a Rental Registration Ordinance.

E. Goal: Existing residential areas are protected from incompatible land uses.

- Objective: Preserve and improve the stability of existing single-family residential neighborhoods by prohibiting encroachment of incompatible land uses.
- Objective: Require commercial uses to provide measures designed to reduce impacts and nuisances to abutting residential areas.

5. Quality of Life, Recreation, and Open Space

A. Goal: New developments provide for sufficient recreational and open space opportunities to serve the needs of the community.

- Objective: Require homeowners associations to maintain designated open space and recreational areas within residential developments.
- Objective: Increase landscaping and buffering requirements for proposed development with frontage on major existing or planned roads.

B. Goal: Plans and programs are established for City recreation, parks, and open space management.

- Objective: Continue to maintain the public parks within the City and promote their use.
- Objective: Encourage recreational opportunities for City citizens, especially youth, through the Harford County Department of Parks and Recreation.
- Objective: Consider use of existing City-owned land for recreation, parks, and/or open space opportunities.
- Objective: Plan for adequately sized neighborhood parks in relation to current and future communities.

C. Goal: An urban street tree program is developed.

- Objective: Create a street landscaping program to address the planting and maintenance of street trees and plantings in Aberdeen.

6. Economic Development

A. Goal: The City's existing economic base is supported and economic development opportunities are encouraged for the expansion of employment, to include the support of BRAC.

- Objective: Market the downtown as a viable center for transit, retail, and customer service uses, professional offices, and civic functions.

- Objective: Establish standards for all commercial uses, to include density requirements, site buffers, landscaping, design guidelines, open space requirements, and adequate public facilities.

B. Goal: Expansion of existing businesses and the location of new businesses is encouraged in order to create jobs for existing and future residents.

- Objective: Promote job training and educational programs offered by Harford Community College, Harford County Office of Economic Development, Maryland's Career Net, Maryland Job Service, Open Doors Career Center, Inc., Susquehanna Workforce Network, Inc., and W.A.G.E. Connection.

- Objective: Encourage the development of Class-A office space, high tech industry, and skilled employment uses.

C. Goal: Conveniently accessible and viable commercial uses are attracted to the downtown area and the US Route 40 corridor.

- Objective: Encourage infill retail and service development in the downtown as a means of expanding the local economic base.

- Objective: Promote the incentives of the Greater Aberdeen-Havre de Grace Enterprise Zone to the property owners and businesses that may develop and/or expand their businesses within the zone.

- Objective: Promote the benefits of the Aberdeen Historically Underutilized Business (HUB) Zone Program to local businesses located within the zone.

- Objective: Promote the Aberdeen Train Station as a prominent feature of the town center and provide opportunities for Transit Oriented Development.

E. Goal: The Higher Education and Applied Technology (HEAT) Center maintains viability.

- Objective: Encourage development proposals in the I-95 Interchange Area that are compatible with the HEAT Center, Battelle Memorial Institute, and other proximate companies.

7. Environment

A. Goal: The City's sensitive areas and the balance of its natural ecology (including critical areas, wetlands, 100-year floodplains, streams and stream buffers, steep slopes, and habitats of threatened and endangered species) are protected.

- Objective: Strengthen and enforce standards to minimize environmental impacts to the City.

- Objective: Preserve non-tidal wetlands and limit their use to designated open space.

- Objective: Conserve stream valleys and their buffers and established drainage ways.

- Objective: Identify sensitive areas for both developed and undeveloped properties within the City.

B. Goal: Procedures that incorporate both design sensitivity and sensitive area preservation are defined and implemented.

- Objective: Utilize best management practices and other effective site design techniques for stormwater management to reduce non-point source pollution.

C. Goal: Remaining forested areas in the City are conserved and new plantings are encouraged.

- Objective: Retain forested tracts to reduce noise levels, control temperatures, minimize stormwater run-off, soften architectural harshness, and increase property values.

- Objective: Conserve forested tracts in proposed annexation plans.

D. Goal: Green building principles and practices in design construction are explored.

- Objective: Develop a plan for implementation of Leadership in Energy and Environmental Design (LEED) principles.

8. Architectural and Streetscape Design

A. Goal: Visual quality and design excellence are pursued to ensure that development provides a positive aesthetic character.

- Objective: Prepare design standards to encourage quality design in the areas of new construction, additions, rehabilitation, signs, streetscapes, and landscaping.

- Objective: Enhance the use of design guidelines and architectural review guidelines for new development in order to ensure compatibility with the prevailing architectural scale and themes in designated areas of the City.

B. Goal: The highest quality of design for future development within the City is achieved.

- Objective: Encourage innovative design techniques that will allow new development to be consistent with existing positive features.

- Objective: Encourage property owners and businesses in the downtown area to improve the exteriors of their buildings to enhance the downtown's appearance.

9. Historical and Cultural Resources

Goal: Preservation of historic sites and buildings is encouraged.

- Objective: Protect sites and structures of historical and cultural importance.

- Objective: Encourage the adaptive re-use of historically significant buildings and structures.

- Objective: Identify and survey buildings and sites of historic architectural value.

- Objective: Encourage the study of archeologically significant sites in and around the City limits (examples: Old Baltimore, Perryman, and Aberdeen Proving Ground).

10. Implementation

Goal: The Plan is implemented via growth management tools (i.e., Development Code, site plan controls, Subdivision Regulations, and other design standards) that are incorporated into the land use planning process.

- Objective: Guide development within the City and its planning areas in accordance with the Plan.

- Objective: Base decisions regarding the location, nature, type, and intensity of future land development on the adopted Plan.

Chapter 3 - MUNICIPAL GROWTH ELEMENT

Vision

Plan for the population and physical growth of the City of Aberdeen through the year 2030 by identifying the City's future boundaries and the public facilities needed to accommodate future businesses and residents.

Anticipated Future Growth Areas Outside of the Corporate Limits

This Plan incorporates an approach to urban planning which emphasizes the critical importance of (1) conserving the City's resources, (2) incorporating the State of Maryland's Smart Growth principles, and (3) implementing requirements of Article 66B and House Bill 1141, those being the inclusion of the Land Use Element, Municipal Growth Element, Community Facilities Element, and Water Resources Element.

The Plan represents the vision for the City of Aberdeen in an orderly and desirable growth pattern. Changes to the Plan may be initiated by private application or through the normal process of updating the Plan by the City every 6 years.

This Plan and related growth management strategies translate into a sequenced allocation of land uses that will achieve the State of Maryland's goal for Smart Growth. The objective of the Plan is to provide the City with a framework for deciding on both the appropriateness and timeliness of private development proposals within the context of the adopted goals, objectives, and policies for growth.

Chapter 2 - Land Use Element contains goals, objectives, and policies relating to the discussion in this element of future growth projections and capacities. The City has planned for growth with a boundary that extends approximately one mile around the corporate limits and is divided into 17 Planning Areas, including land available for infill within the corporate boundaries (referred to as Planning Area 16), and Aberdeen Proving Ground (referred to as Planning Area 17). Each Planning Area is comprised of an area of land that features a unique set of interrelated physical, topographic, and cultural characteristics that gives the area its special identity. The Plan encapsulates the long-range vision for development within each Planning Area.

In the process of updating the Plan, the following narratives were prepared that summarize the planning analysis for each of the 17 Planning Areas. These narratives identify key area characteristics, including (a) boundary delineations and land area, **(**b) existing land use and zoning, (c) topography and natural features, and (d) cultural and historical aspects, if applicable. As related to the planning process, these factors and their interrelationships have a direct bearing upon the process of structuring the optimal future land use for any given area. For example, key topographic features, such as major ridges or drainage swales, will suggest some land use patterns and discourage others. Similarly, existing highways and railroads constitute established man-made systems that must be considered in making future land use recommendations.

Recommended land uses are provided on a planning area-by-planning area basis. In some instances, certain planning areas are not being considered for growth at this time due to the lack of public infrastructure and/or environmental constraints. We consider these Planning Areas important to the City's future growth and have retained the existing future land use recommendation in each as described. In some cases, more than one land use designation is allocated to a given planning area to effectively describe land uses and growth management objectives.

Table 3-1, Planning Areas, reflects the overall acreage and equivalent number of dwelling units based on Smart Growth-Priority Funding requirements and Aberdeen's Future Land Use Recommendations. The proposed total does not take into consideration net developable acreage, sensitive areas, public rights-of-way, or open space. The proposed equivalent dwelling units (EDUs) based on available water and wastewater capacities are reflected in Chapter 10 – Water Resource Element.

For the purpose of this Plan, the City is planning for future growth in Planning Areas 1,4,5,6,7,8,9,10,11,13, and 16. These Future Growth areas are depicted on Map 3-3 and further discussion of each area is following.

In looking at a one-mile radius around the City limits the City recognizes that Planning Areas 2,3,12,14,15, and 17 are not necessarily adapted for immediate growth but are in close enough proximity to be considered in this plan.

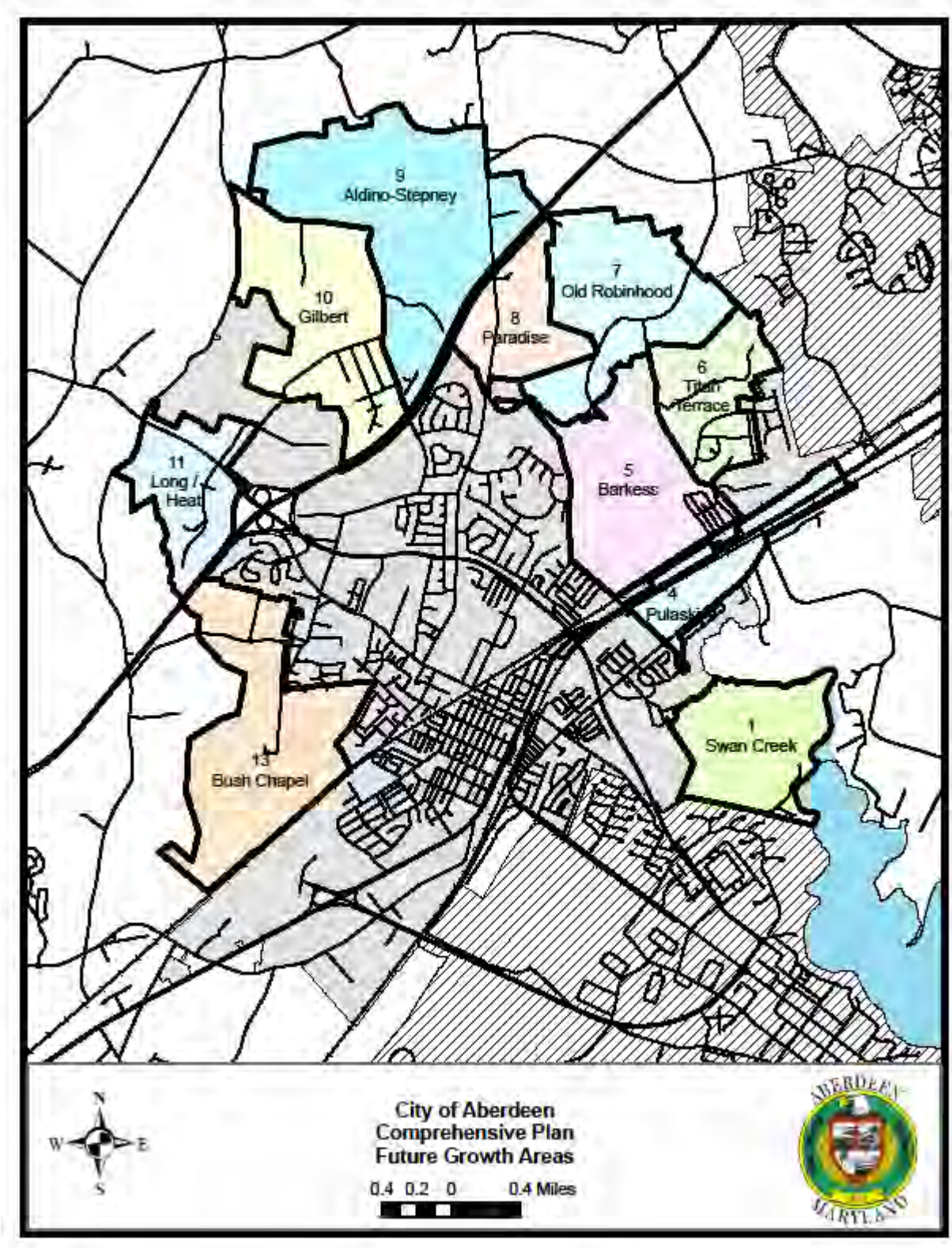
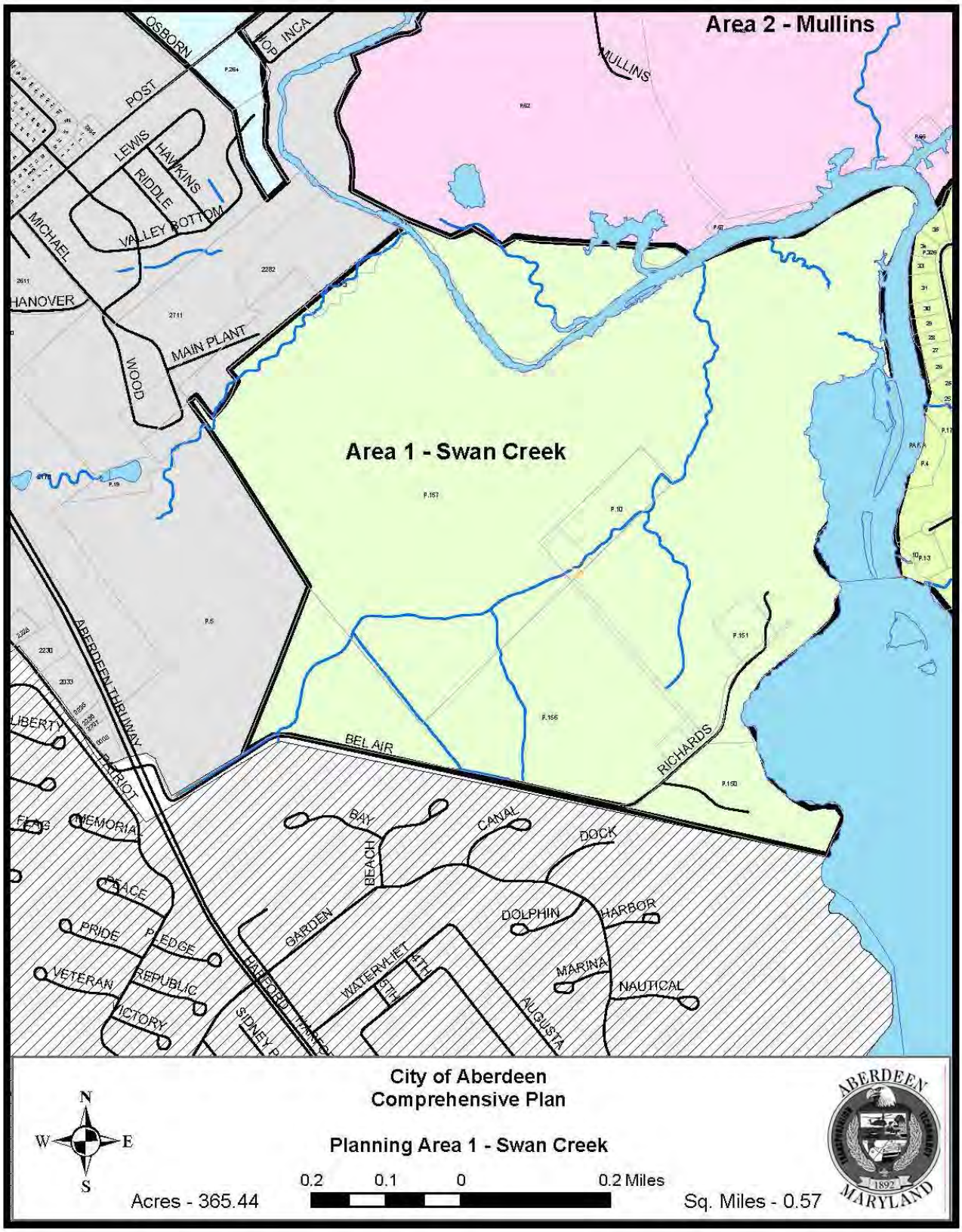

9
Aldino-Stepney
10
Gilbert
8
Paradise
7
Old Robinhood
6
Titan Terrace
5
Barkess
11
Long / Heat
4
Pulaski
1
Swan Creek
13
Bush Chapel
N
W
E
S
City of Aberdeen
Comprehensive Plan
Future Growth Areas
0.4 0.2 0 0.4 Miles
ABERDEEN
MARYLAND

Table 3-1 Planning Areas

Planning Area	Name	Acres	Proposed Land Use	Equivalent Dwelling Units (EDUs)
1	Swan Creek	365	Low Density Residential and Commercial	300
2	Mullins	443	Low Density Residential	0
3	Oakington	884	Low Density Residential	0
4	Pulaski	218	Commercial	240
5	Barkess	498	Low to Medium Density Residential	1,011
6	Titan Terrace	293	Low Density Residential	223
7	Old Robinhood	515	Low Density Residential	300
8	Paradise	263	Low to Medium Density Residential (3.5 dwelling units/acre)	919
9	Aldino-Stepney	850	Low to Medium Density Residential (3.5 dwelling units/acre)	2,973
10	Gilbert	565	Low to Medium Density Residential (3.5 dwelling units/acre)	2,104
11	Long/ HEAT	295	Commercial	400
12	Grays	838	Low Density Residential	0
13	Bush Chapel	649	Low to Medium Density Residential (3.5 dwelling units/acre) and Office, Research, and Educational Uses	300
14	Stepney	553	Low Density Residential	0
15	Old Phila-delphia	1,054	Commercial and Light Industrial	0
16	Aberdeen (existing and infill)	4,144	Within corporate limits and areas served by public wastewater	11,230
17	APG	72,518	Current Army Installation	0
TOTAL		**84,945**		**20,000**


Area 2 - Mullins
Area 1 - Swan Creek
OSBORN
OLD INCA
POST
LEWIS
HAWKINS
RIDDLE
VALLEY BOTTOM
MICHAEL
HANOVER
MAIN PLANT
WOOD
MULLINS
ABERDEEN THRUWAY
LIBERTY
PATRIOT
FLAG
MEMORIAL
PEACE
PRIDE
PLEDGE
VETERAN
REPUBLIC
VICTORY
SYDNEY
BEL AIR
RICHARDS
BAY
BEACH
CANAL
DOCK
GARDEN
DOLPHIN
HARBOR
WATERVLIET
5TH
6TH
MARINA
NAUTICAL
AUGUSTA
City of Aberdeen
Comprehensive Plan
Planning Area 1 - Swan Creek
N
W
E
S
0.2
0.1
0
0.2 Miles
Acres - 365.44
Sq. Miles - 0.57
ABERDEEN
1892
MARYLAND

PLANNING AREA 1: SWAN CREEK

Description of Planning Area:

Planning Area 1, Swan Creek, contains approximately 365 acres (0.57 square miles) and is located east of the City. The boundary begins at the borders of Aberdeen Proving Ground and North Gate Business Park and southeast of the City's Wastewater Treatment Facilities and Maintenance Department and meets at a point of the southwestern border of Planning Area 2, Mullins.

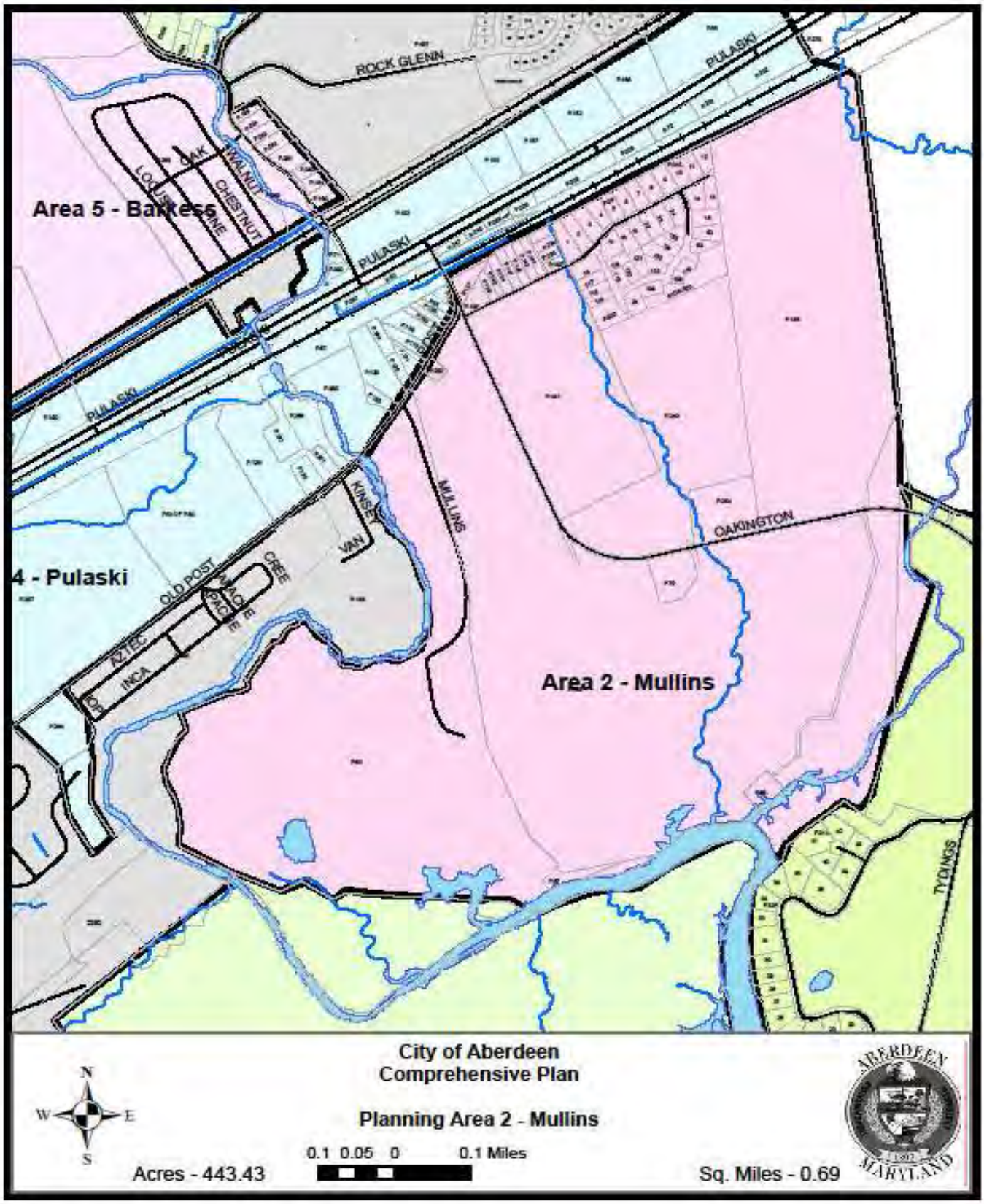
The Harford County designation for this planning area is Low Intensity land use. The Harford County zoning designation is R1 Urban Residential District.

The land is moderately sloped with stands of forested areas along Swan Creek. This planning area is located within the Chesapeake Bay Critical Area and much of the land is located within an Agricultural Preservation Easement or District.

Future Land Use Recommendations:

This Planning Area is a priority area recommended for future growth for the City. The Swan Creek Planning Area is planned for a mix of uses to include residential and commercial.

Future land use proposals should incorporate the development of appropriate neighborhood open spaces and a landscaped, passive park internal to the development. Transportation planning will be required for any development plans, considering the close proximity of the MD 22 Gate entrance to Aberdeen Proving Ground and the adjacent commercial uses. Proposed land uses should preserve forested areas and should implement Low-Impact Development practices to minimize pollution of the Swan Creek Watershed.


ROCK GLENN
PULASKI
OAK
WALNUT
CHESTNUT
LOCUST
ELM
Area 5 - Barkess
PULASKI
PULASKI
KINSEY
VAN
MULLINS
OAKINGTON
4 - Pulaski
OLD POST
CREE
AZTEC
INCA
Area 2 - Mullins
TYDINGS
City of Aberdeen
Comprehensive Plan
Planning Area 2 - Mullins
N
W
E
S
0.1 0.05 0 0.1 Miles
Acres - 443.43
Sq. Miles - 0.69
ABERDEEN
MARYLAND

PLANNING AREA 2: MULLINS

Description of Planning Area:

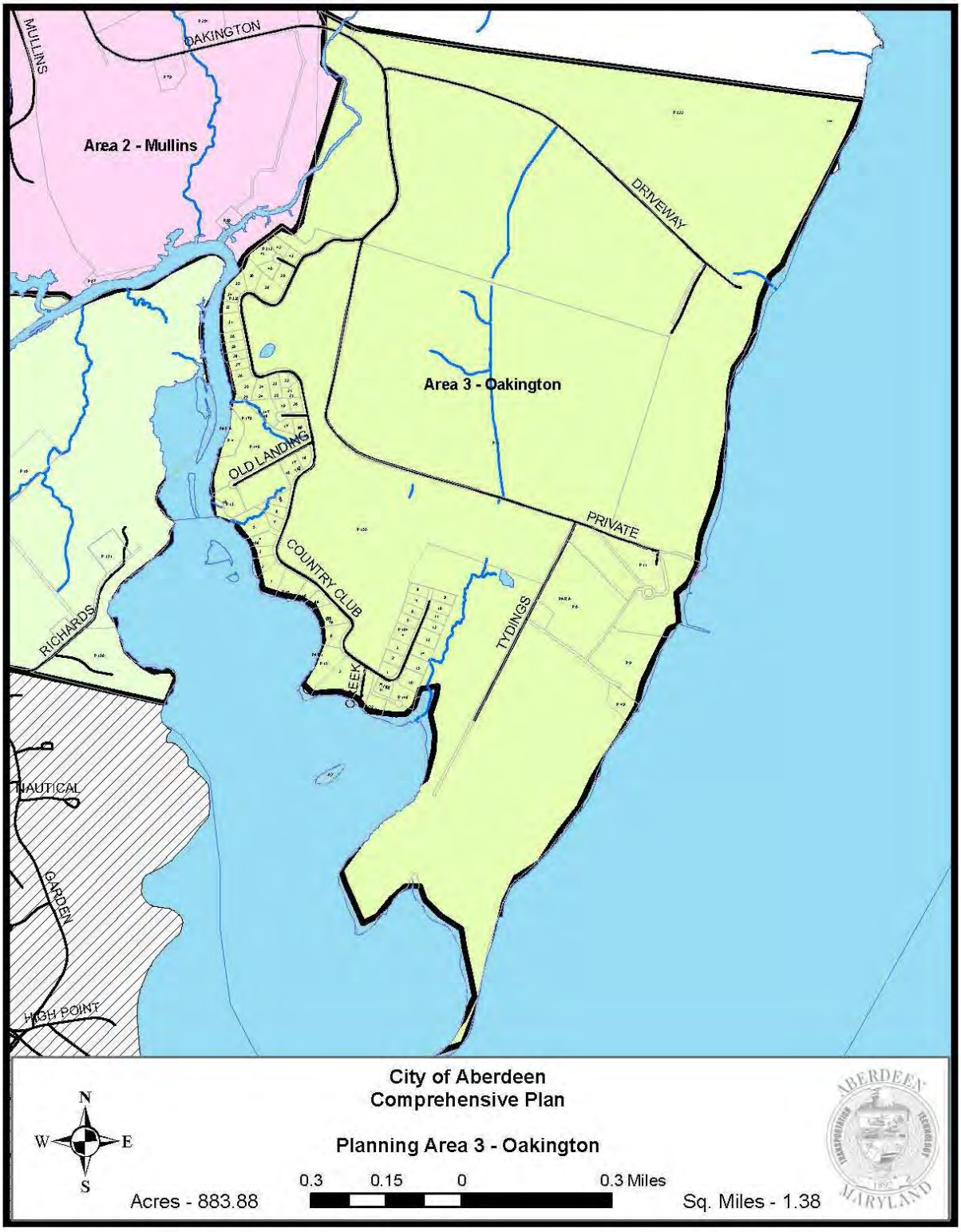
Planning Area 2, Mullins, contains approximately 443 acres (0.69 square miles) and is located east of the City. The northwestern boundary runs along Old Post Road to the point of intersection with Swan Creek. Swan Creek forms the remainder of the western boundary to the point of intersection of the northern boundary of Planning Area 1, Swan Creek. The eastern boundary runs northward and adjoins Planning Area 3, Oakington and Harford County areas outside of the one-mile radius of the Planning Area. The northern boundary runs along the CSX railroad line to the point of the beginning at the Oakington Road railroad bridge.

The Harford County designation for this planning area is State and County Parks land use. The Harford County zoning designations are R2 and R3 Urban Residential District, AG Agricultural District, and GI General Industrial District. Mullins Landfill, a 106-acre site, is located less than one mile south of the Old Post Road residential area of Havre de Grace. The site is at the end of Mullins Road and is bounded by Swan Creek to the south and west. There is also a wetland area to the south and southwest of the site, along Swan Creek. The Harford County Department of Public Works has retained ownership of the site since 1969. Both municipal and industrial wastes were disposed of at this landfill during its operations from 1969 to 1976. This area has been used for off-site reforestation for other developments throughout the County. The community of Swan Creek Farms is located off Oakington Road. The Roye-Williams Elementary School is located in this planning area. The City has extended public wastewater service to several properties in this planning area.

The site contains numerous environmental constraints including hydric soils, wetlands, Chesapeake Bay Critical Area, large stands of forests associated with wetlands, and a high water table.

Future Land Use Recommendation:

At this time, the Mullins Planning Area is not being considered as a Future Growth Area, but is being considered as a rural buffer. In the future when the City prepares the update to the Comprehensive Plan, we may consider the Mullins Planning Area for low-density residential uses due to its significant environmental constraints.


MULLINS
OAKINGTON
Area 2 - Mullins
DRIVEWAY
Area 3 - Oakington
OLD LANDING
PRIVATE
COUNTRY CLUB
TYDINGS
RICHARDS
CREEK
NAUTICAL
GARDEN
HIGH POINT
City of Aberdeen
Comprehensive Plan
Planning Area 3 - Oakington
N
W
E
S
0.3
0.15
0
0.3 Miles
Acres - 883.88
Sq. Miles - 1.38
ABERDEEN
MARYLAND

PLANNING AREA 3: OAKINGTON

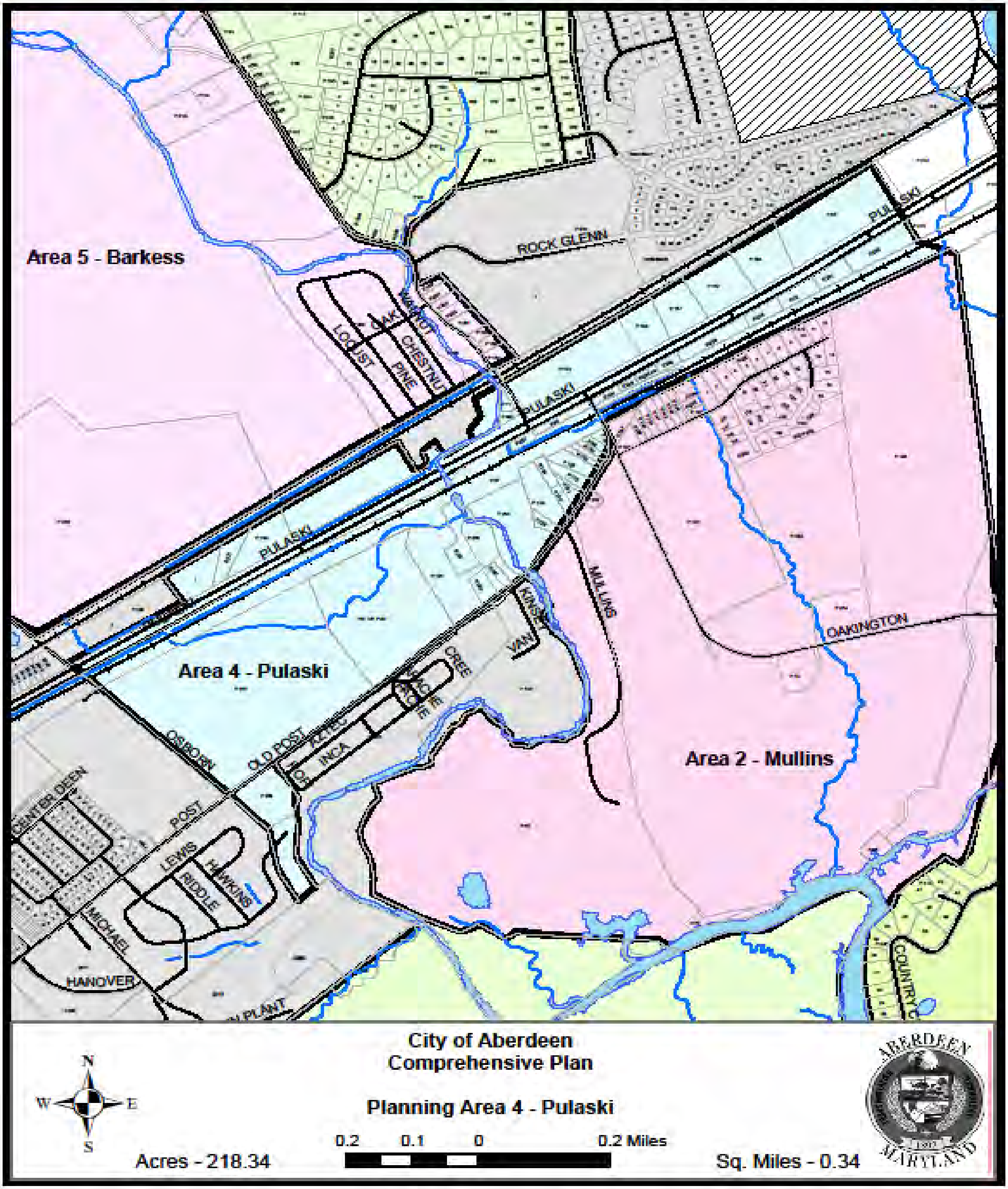
Description of Planning Area:

Planning Area 3, Oakington, contains approximately 884 acres (1.38 square miles) and is the easternmost of the planning areas. Beginning at the junction of Oakington Road and Gashey's Creek, the northern boundary follows the southern borderline of Swan Harbor Farm Park to the Chesapeake Bay. The Chesapeake Bay south to Swan Creek Point is the area's eastern boundary. The planning area's western boundary is Swan Creek, then Gashey's Creek to the starting point.

The Harford County designation for this planning area is State and County Parks land use. The Harford County zoning designations are R1 Urban Residential District and AG Agricultural District. The planning area includes Father Martin's Ashley, a private treatment center, the former Swan Creek Country Club, Swan Harbor Farm (a Harford County owned and managed 530-acre bay front park), and a residential community.

Future Land Use Recommendation:

At this time, the Oakington Planning Area is not being considered as a Future Growth Area, but is being considered as a rural buffer. In the future, when the City prepares the update to the Comprehensive Plan, we may consider the Oakington Planning Area for low-density residential uses in an effort to protect and honor the efforts of Father Martin's Ashley and the existing residential community. This area is also a priority area for connection with the Lower Susquehanna Heritage Greenway.


Area 5 - Barkess
Area 4 - Pulaski
Area 2 - Mullins
ROCK GLENN
PULASKI
LOCUST
OAK
CHESTNUT
PINE
MULLINS
OAKINGTON
KINGS
VAN
OSBORN
OLD POST
INCA
POST
LEWIS
RIDDLE
HAWKINS
MICHAEL
HANOVER
CENTER DEEN
City of Aberdeen
Comprehensive Plan
Planning Area 4 - Pulaski
N
S
E
W
0.2
0.1
0
0.2 Miles
Acres - 218.34
Sq. Miles - 0.34
ABERDEEN
MARYLAND

PLANNING AREA 4: PULASKI

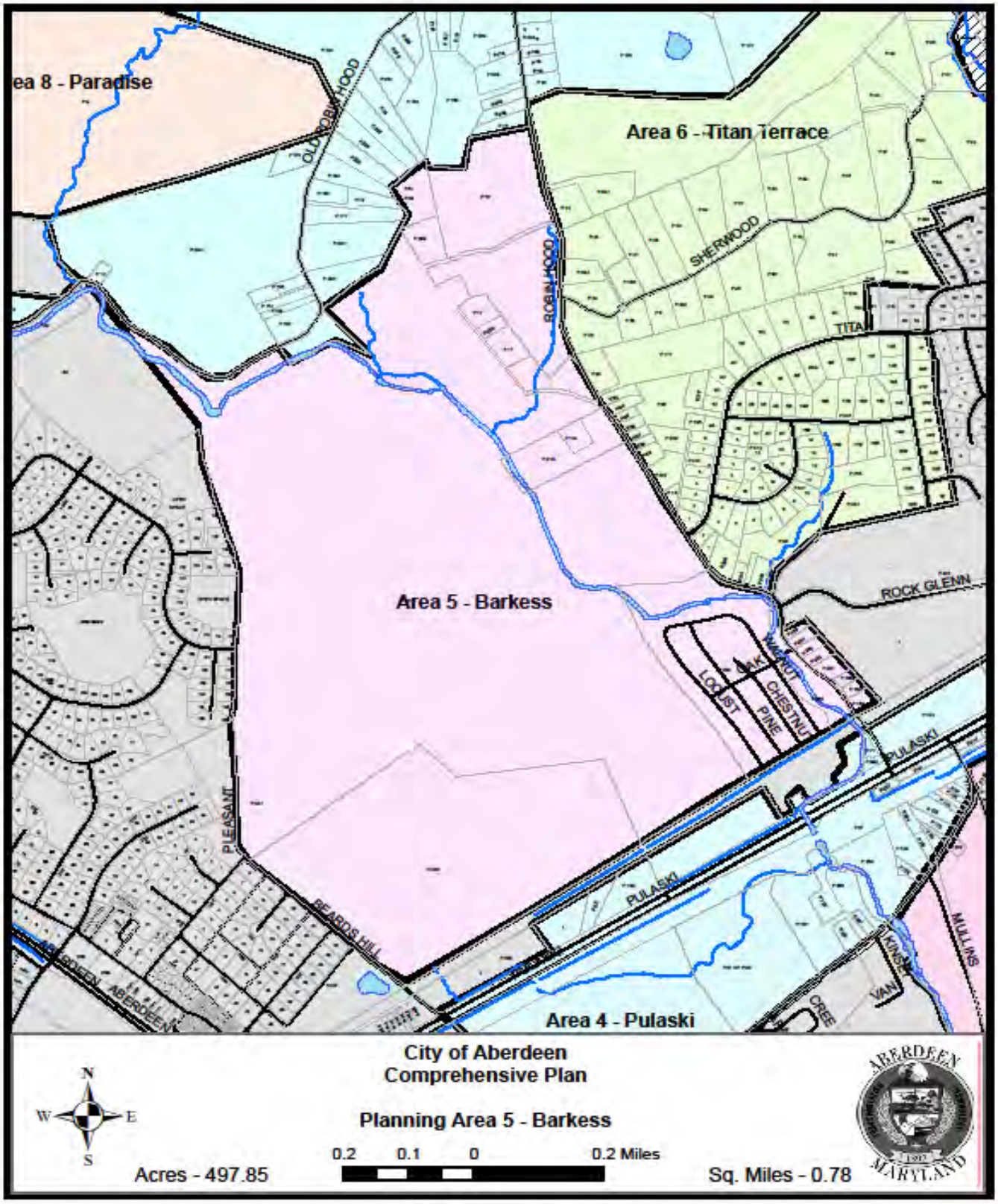
Description of Planning Area:

Planning Area 4, Pulaski, contains approximately 218 acres (0.34 square miles) and is northeast of the City. Beginning at the intersection of the City's eastern boundary and the CSX rail line, the northeastern boundary of this planning area is the CSX rail line and extends northerly to the north end of the Swan Creek Village Center. Turning to the southeast along the shopping center boundary, the planning area's boundary crosses US Route 40 and the Amtrak rail line to intersect with the northeastern boundary of Planning Area 2, Mullins. The southeastern boundary coincides with the northern and northwest boundary of Planning Area 2, Mullins to the point of intersection with Swan Creek and the City boundary on Old Post Road. From this point the boundary precedes along Old Post Road dropping down further to the southeast to include two parcels that split the Spring Valley Mobile Home Park and Trailer Rancho. From this point the boundary turns to the northwest crossing the Amtrak rail line and ending at the intersection of Beards Hill Road and US Route 40. The northwestern boundary proceeds adjacent to the City boundary back to the point of origin.

The Harford County designation for this planning area includes Low Intensity and High Intensity land uses and contains part of the Chesapeake Bay Critical Area around Swan Creek. The Harford County zoning designations are CI Commercial Industrial District, GI General Industrial District, and R2 Urban Residential District. The City has extended public wastewater service to several properties in this planning area.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Pulaski Planning Area is planned for commercial uses to complement the existing commercial and industrial uses along the US Route 40 corridor.


ea 8 - Paradise
Area 6 - Titan Terrace
Area 5 - Barkess
Area 4 - Pulaski
OLD ROBIN HOOD
ROBIN HOOD
SHERWOOD
TITA
ROCK GLENN
OAK
WALNUT
LOCUST
CHESTNUT
PINE
PULASKI
PLEASANT
BEARDS HILL
ABERDEEN
MULLINS
KINSEY
VAN
CREE
City of Aberdeen
Comprehensive Plan
Planning Area 5 - Barkess
N
W
E
S
0.2 0.1 0 0.2 Miles
Acres - 497.85
Sq. Miles - 0.78
ABERDEEN
1892
MARYLAND

PLANNING AREA 5: BARKESS

Description of Planning Area:

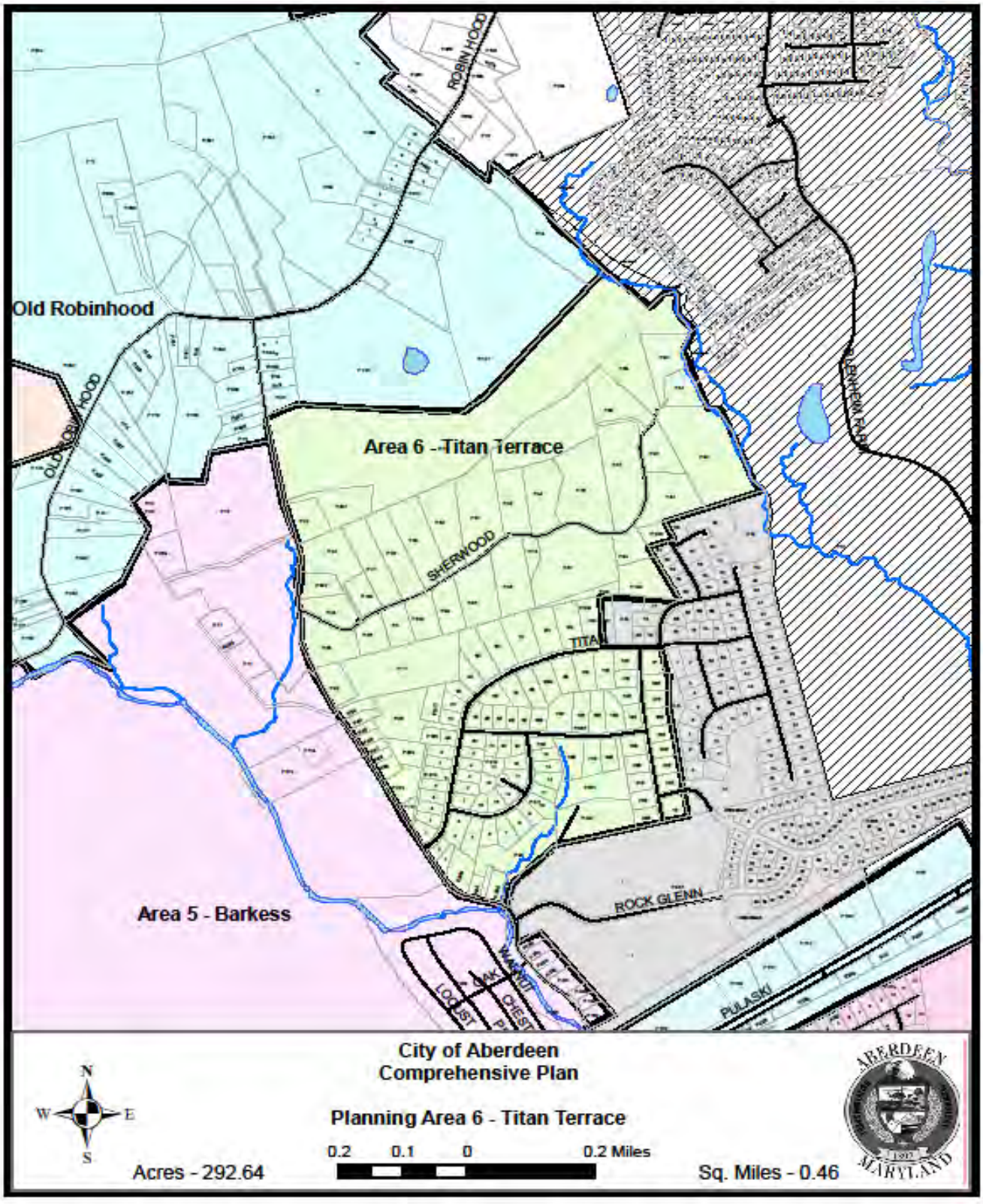
Planning Area 5, Barkess, contains approximately 498 acres (0.78 square miles) and is northeast of the City. The planning area boundary begins at the Swan Creek Pumping Station and proceeds southwesterly along the City limits to the intersection with Beards Hill Road and US Route 40. The western boundary of the planning area continues northward along the City limits to a point intersecting with Robin Hood Road. From this point, the northern boundary of the planning area adjoins the southern boundary of Planning Area 7, Old Robinhood, to the point where this line meets Planning Area 6, Titan Terrace, and reconnects with Robin Hood Road. From this point, Robin Hood Road forms the eastern boundary all the way to the beginning point of the planning area to include several parcels on the northeast side of Robin Hood Road.

The Harford County land use designation for this planning area is Low Intensity and Industrial/Employment. The Harford County zoning designations are R1, R2, and R4 Urban Residential District and GI General Industrial District.

The tracts of land comprising this planning area are gently to moderately sloping. Several areas in the northern portion of the planning area, along Swan Creek and Robin Hood Road, have severely sloping topography and sensitive environmental areas. The western half of the planning area contains significant tree cover. Swan Creek is a major environmental feature of this planning area. The parcel known as the Barchowsky property located within this Planning Area contains an 85.85-acre conservation easement in perpetuity with the Maryland Environmental Trust. The remaining lands in this Planning Area can be developed.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Barkess Planning Area is planned for low to medium density residential uses. Any new proposed residential development adjoining the Windemere Estates community should provide connectivity to existing roads and compatible development. Proposed uses should protect environmentally sensitive areas and preserve established tree cover. In addition, Low-Impact Development practices should be implemented to minimize pollution of the Swan Creek Watershed.


Old Robinhood
Area 6 - Titan Terrace
Area 5 - Barkess
ROBIN HOOD
OLD ROBINHOOD
SHERWOOD
TITAN
ROCK GLENN
PULASKI
OAK
LOCUST
CHEST
WALNUT
N
W
E
S
City of Aberdeen
Comprehensive Plan
Planning Area 6 - Titan Terrace
0.2 0.1 0 0.2 Miles
Acres - 292.64
Sq. Miles - 0.46
ABERDEEN
MARYLAND

PLANNING AREA 6: TITAN TERRACE

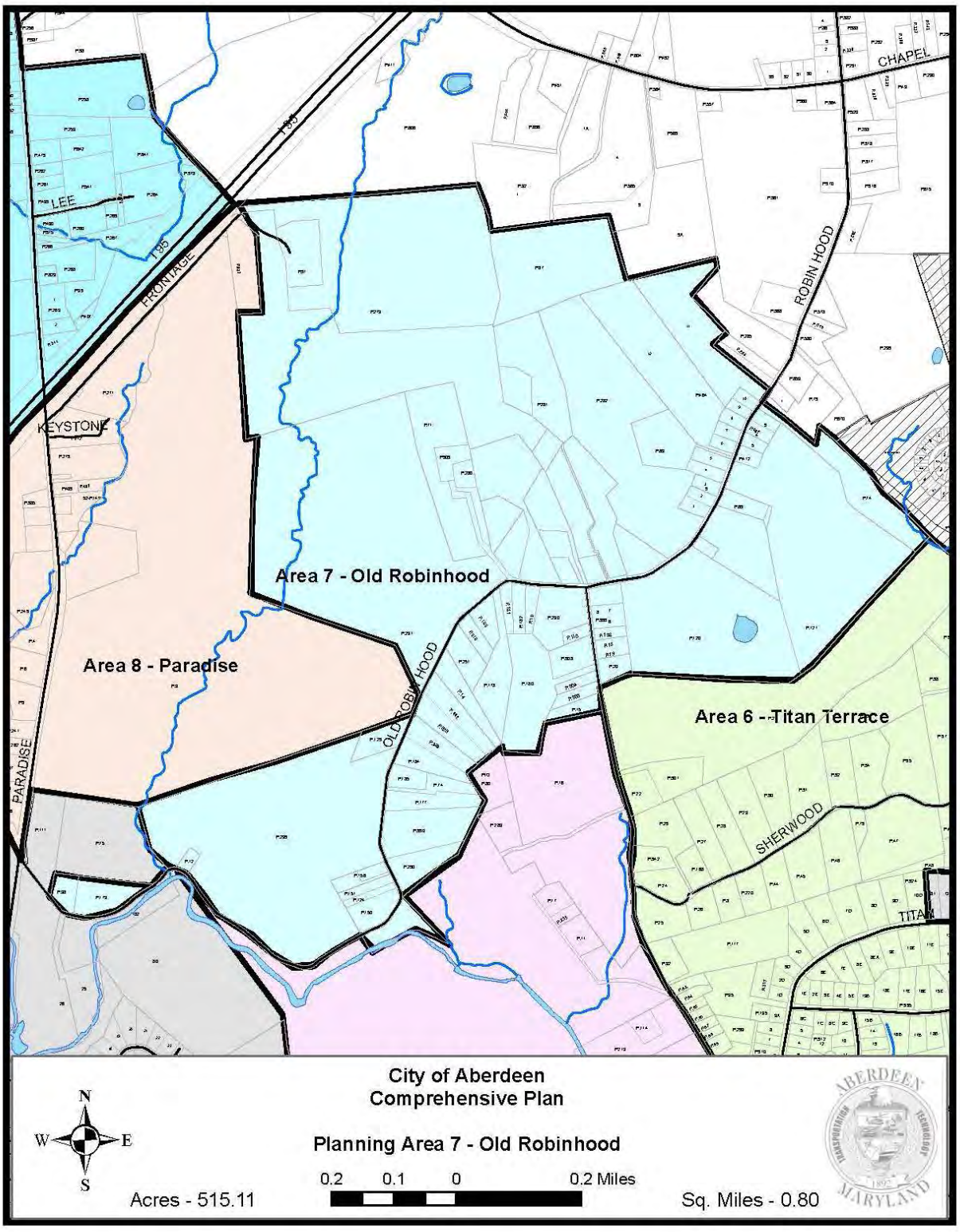
Description of Planning Area:

Planning Area 6, Titan Terrace, contains approximately 293 acres (0.46 square miles) and is an established residential community located northeast of the City's boundary. From a point just north of the intersection of Robin Hood Road and Rock Glenn Boulevard, the western boundary runs along Robin Hood Road to a point adjoining Planning Area 7, Old Robinhood. The northern boundary is coincidental with the southeastern boundary of Planning Area 7, proceeding northeasterly to a point adjoining the Havre de Grace City limits. The northeastern boundary adjoins the Havre de Grace City limits to a coincidental point with the City limits of both Havre de Grace and Aberdeen. The southeastern boundary adjoins the Aberdeen City limits defined by the subdivisions of Greens at Rock Glenn and Woods at Rock Glenn and continues along the City limits back to the point of beginning.

The Harford County designation for this planning area is Low Intensity land use. The Harford County zoning designation is R1 Urban Residential District. The Titan Terrace community has private well and septic service. The existing Titan Terrace residential development may be considered for annexation as public water and wastewater service become available and at the request of the property owners.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Titan Terrace Planning Area is planned for low-density residential uses to be consistent with existing residential subdivisions.


CHAPEL
LEE
I-95
FRONTAGE
ROBIN HOOD
KEYSTONE
Area 7 - Old Robinhood
Area 8 - Paradise
OLD ROBIN HOOD
Area 6 - Titan Terrace
PARADISE
SHERWOOD
TITAN
City of Aberdeen
Comprehensive Plan
Planning Area 7 - Old Robinhood
N
W
E
S
0.2 0.1 0 0.2 Miles
Acres - 515.11
Sq. Miles - 0.80
ABERDEEN
MARYLAND

PLANNING AREA 7: OLD ROBINHOOD

Description of Planning Area:

Planning Area 7, Old Robinhood, contains approximately 515 acres (0.80 square miles) and is located northwest of the City. Beginning at the Aberdeen Family Swim Center on Old Robinhood Road, the western boundary adjoins Planning Area 8, Paradise, all the way to a point intersecting Interstate 95 (I-95). The northern boundary adjoins areas of Harford County not within the one mile radius and also a part of the City of Havre de Grace. From this point the southern boundary adjoins Planning Area 6, Titan Terrace, and Planning Area 5, Barkess, back to a point of beginning.

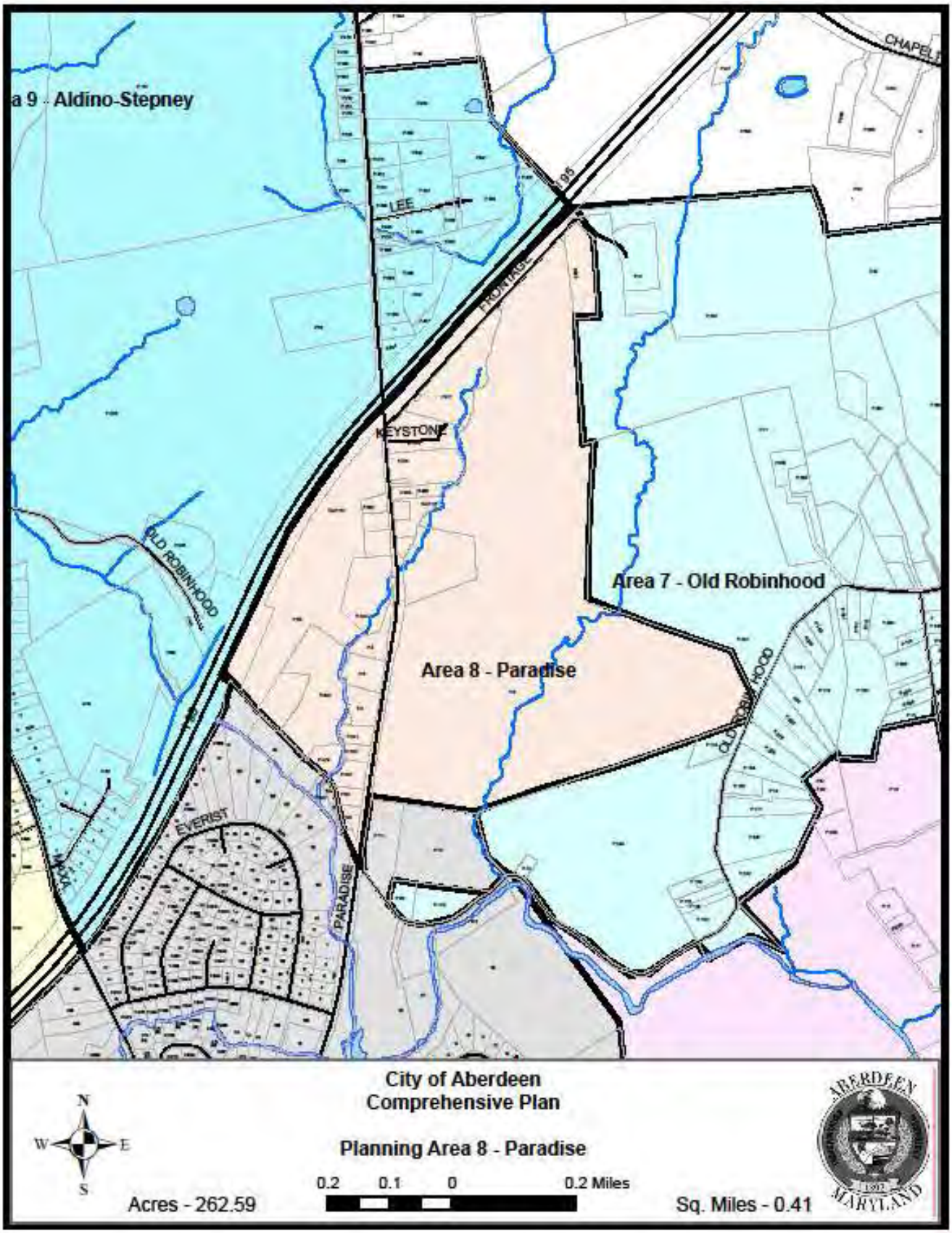
We recognize that an enclave of two parcels exist in this Planning Area. The enclave issue will be addressed in future updates of the Plan.

The Harford County designation for this planning area is Low Intensity and Agricultural land use. The Harford County zoning designations are AG Agricultural District and R1 Urban Residential District.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City; however, the timing of future growth will depend on the extension of public infrastructure to serve this area and Planning Areas 6 Titan Terrace and 8 Paradise. The Old Robinhood Planning Area is planned for low density residential uses. Proposed uses should protect environmentally sensitive areas and preserve established tree cover. Public infrastructure, to include transportation planning and future road improvements will need to be coordinated with Harford County and State Highway Administration agencies.

Future planning for this area may include a site for a large community park, a fire station, and/or police substation to service north Aberdeen.


a 9 - Aldino-Stepney
LEE
FRONTAGE
95
KEYSTONE
OLD ROBINHOOD
Area 7 - Old Robinhood
Area 8 - Paradise
OLD ROBINHOOD
EVERIST
PARADISE
City of Aberdeen
Comprehensive Plan
Planning Area 8 - Paradise
N
W
E
S
0.2 0.1 0 0.2 Miles
Acres - 262.59
Sq. Miles - 0.41
ABERDEEN
1892
MARYLAND

PLANNING AREA 8: PARADISE

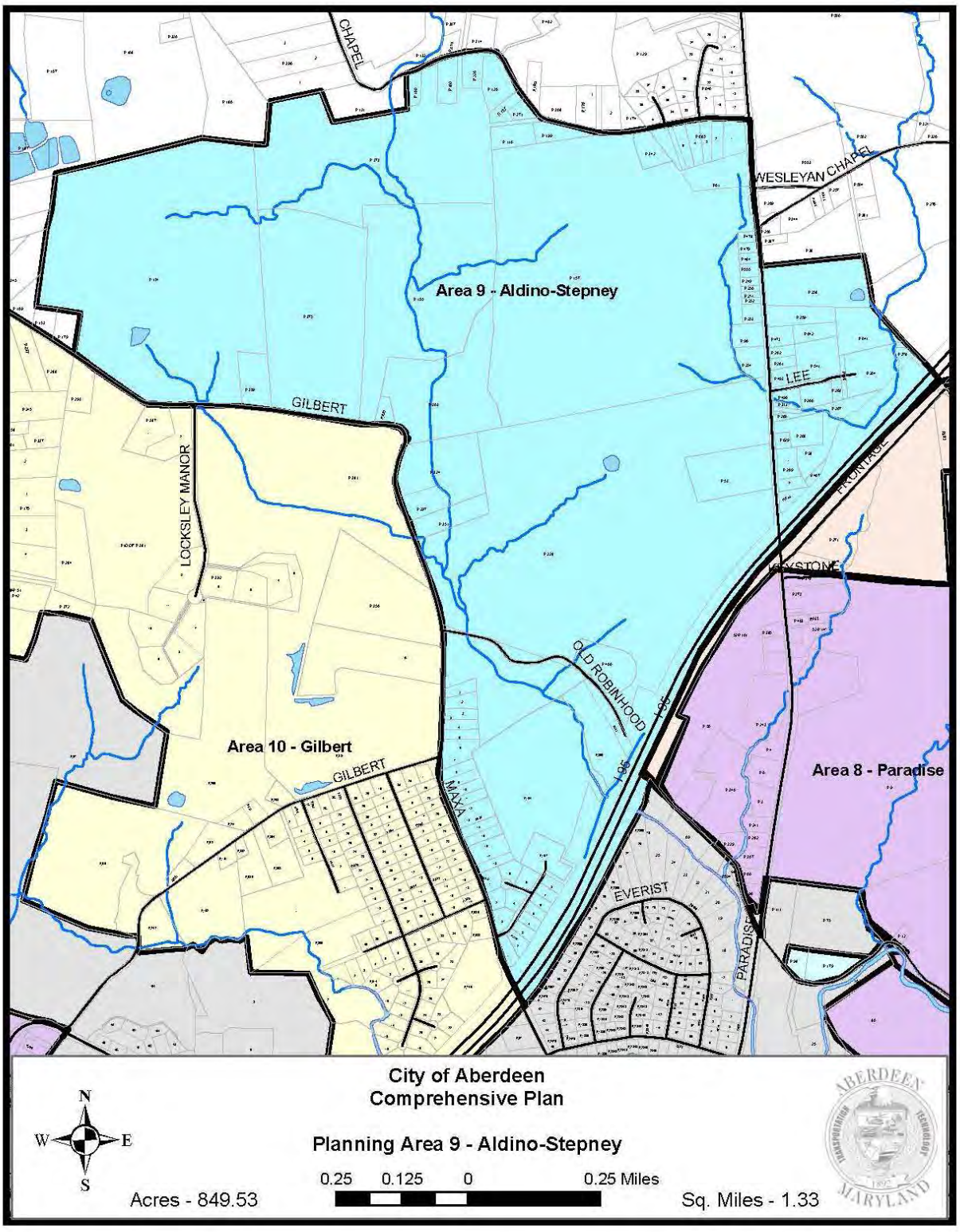
Description of Planning Area:

Planning Area 8, Paradise, contains approximately 263 acres, (0.41 square miles) and is located north of the City. Beginning at the intersection of Old Robinhood Road and Paradise Road, part of the southern boundary goes northwest along Old Robinhood Road to I-95, then heads northeast along I-95 about one mile to form the area's western boundary. The boundary line then turns south adjoining the Planning Area 7, Old Robinhood, to a point at Old Robinhood Road. From this point, the southern boundary runs contiguous with Planning Area 7, to a point of intersection with the City limits. The southern boundary continues along the City limits back to Paradise Road and then south along Paradise Road to the point of beginning.

The Harford County designation for this planning area is Low Intensity and Agricultural land use. The Harford County zoning designation is AG Agricultural District.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Paradise Planning Area is planned for low to medium density residential uses. Consideration shall be made for a neighborhood business that is part of a development plan and serves the immediate area. Given the proximity of much of this area to I-95, effective buffering of the highway should be addressed in the course of development. The nature of such techniques will be dependent upon size, type, and location of such development.


CHAPEL
WESLEYAN CHAPEL
Area 9 - Aldino-Stepney
GILBERT
LEE
FRONTAGE
LOCKSLEY MANOR
KEYSTONE
OLD ROBINHOOD
I-95
Area 10 - Gilbert
GILBERT
MAXA
Area 8 - Paradise
EVERIST
PARADISE
City of Aberdeen
Comprehensive Plan
Planning Area 9 - Aldino-Stepney
N
W
E
S
0.25 0.125 0 0.25 Miles
Acres - 849.53
Sq. Miles - 1.33
ABERDEEN
MARYLAND

PLANNING AREA 9: ALDINO-STEPNEY

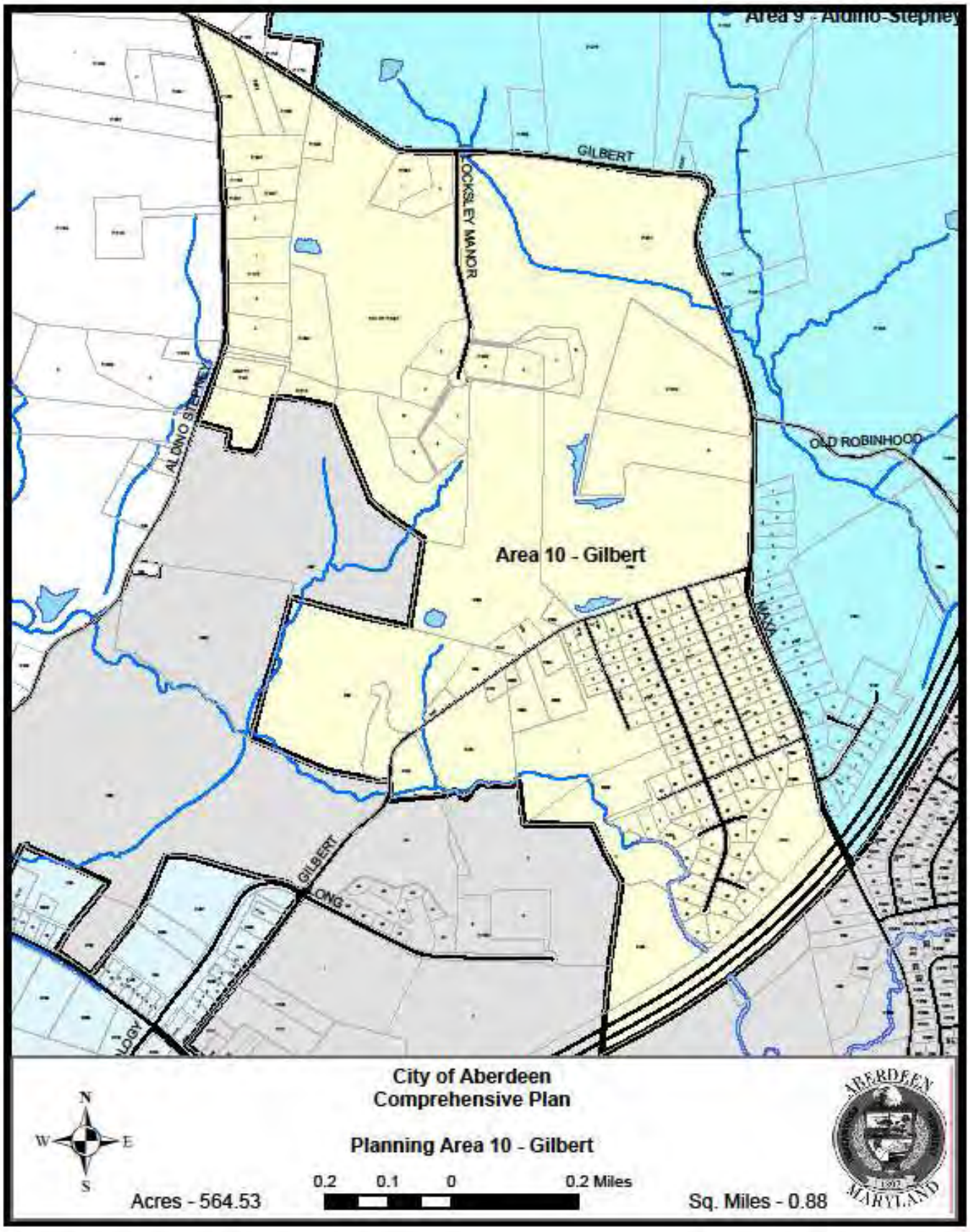
Description of Planning Area:

Planning Area 9, Aldino-Stepney, contains approximately 850 acres (1.33 square miles) and is located north of the City. Beginning at the intersection of Maxa Road and I-95, the western boundary is formed by Maxa Road and then Gilbert Road. At the bend of Gilbert Road at the former Dawn's Jubilee Farm, the southwestern border is formed and follows along Gilbert Road with the northern boundary of Planning Area 10, Gilbert to a point approximately ¼ of a mile west of Locksley Manor Drive. The western boundary is formed along the western side of the Burkheimer Property (Parcel 154), continuing to a point adjoining properties north of this planning area. The northern boundary runs approximately ¾ of a mile to the intersection with West Chapel Road, with the remainder of the northern boundary proceeding easterly along West Chapel Road to its intersection with Paradise Road. The northeastern boundary follows southerly along Paradise Road for approximately 1/3 of a mile at which point it tracks due east to a point along an unnamed road and proceeds southeasterly to I-95. The southeastern boundary follows I-95 back to the point of beginning.

The Harford County designation for this planning area is Agricultural land use. The Harford County zoning designations are AG Agricultural District, B1 Neighborhood Business District, and RR Rural Residential District.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Aldino-Stepney Planning Area is planned for low and medium density residential and neighborhood commercial uses. As part of an annexation review, the City may require dedication of property for public safety purposes to serve the planning area. As property owners make requests for annexation and private investments are made, rights-of-way will be dedicated and public connector roads will be developed to fully integrate Aldino-Stepney into the City of Aberdeen.


Area 9 - Aldino-Stephley
GILBERT
LOCKSLEY MANOR
ALDINO STEPHLEY
OLD ROBINHOOD
Area 10 - Gilbert
GILBERT
City of Aberdeen
Comprehensive Plan
Planning Area 10 - Gilbert
N
W
E
S
0.2
0.1
0
0.2 Miles
Acres - 564.53
Sq. Miles - 0.88
ABERDEEN
1892
MARYLAND

PLANNING AREA 10: GILBERT

Description of Planning Area:

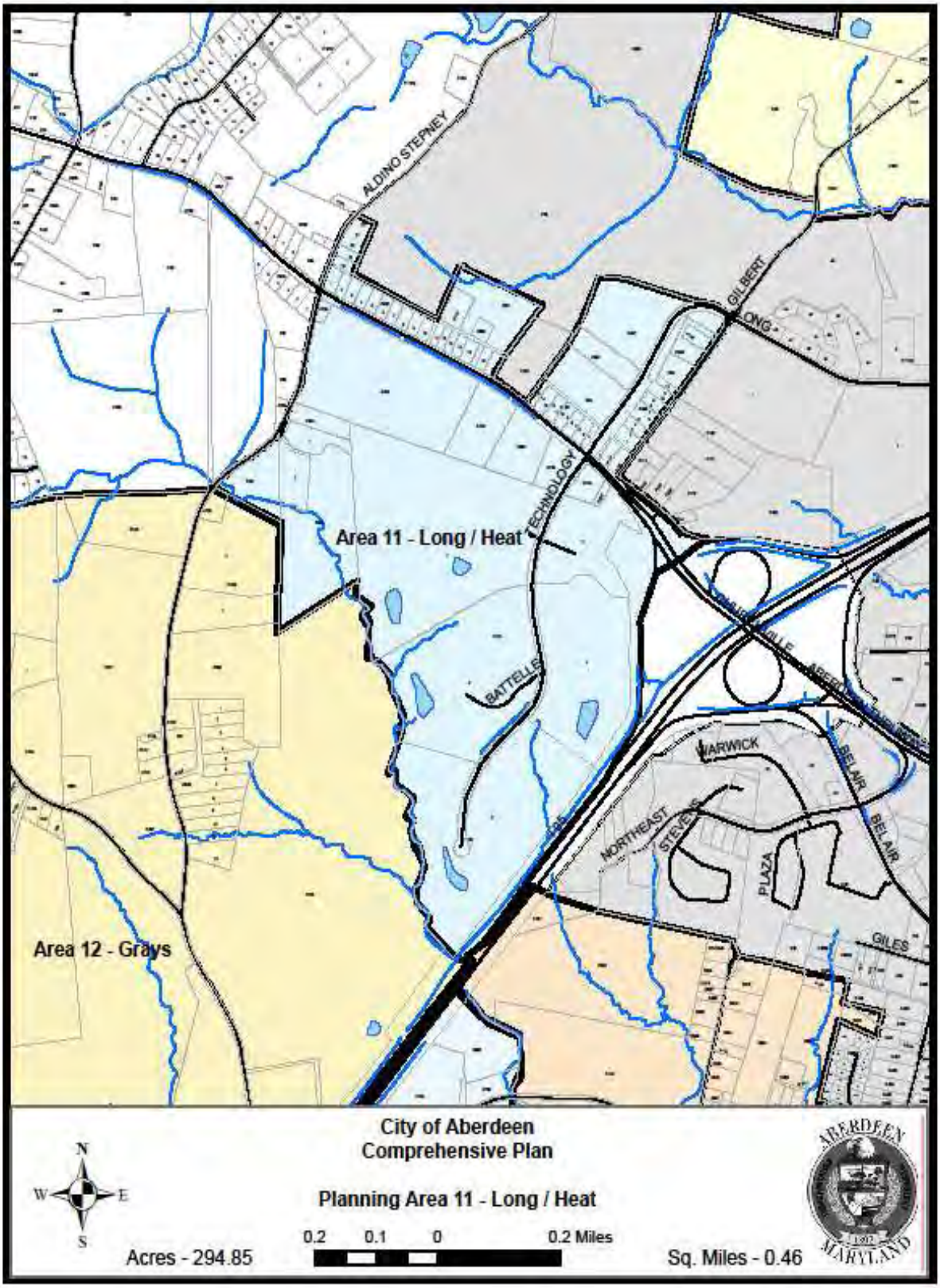
Planning Area 10, Gilbert, contains approximately 565 acres (0.88 square miles) and is located north of the City limits. Beginning at the intersection of Maxa Road and I-95, the eastern boundary is formed by Maxa Road and then Gilbert Road. Gilbert Road defines the northern boundary after it turns at the former Dawn's Jubilee Farm to a point of intersection with Aldino-Stepney Road. The western boundary continues southward along Aldino-Stepney Road to a point of intersection with the City limits. The southwestern boundary follows the City limits to a point of intersection with I-95. The southern boundary runs along I-95, proceeding northeasterly back to the point of beginning.

The Harford County designation for this planning area is Agricultural land use. The Harford County zoning designations are AG Agricultural District and RR Rural Residential District. The Rural Residential District zoning encompasses Adams Heights. The Adams Heights community is serviced by private wells and septic systems. The Wetlands Golf Course and the Locksley Manor residential development are both located in this planning area.

Within the corporate limits, the Village at Carsins Run, a proposed continuing care retirement community, and Eagle's Rest, a residential community, are located adjacent to the Planning Area. The Village at Carsins Run development will include 680 units of independent living cottages, independent living apartments, assisted living apartments, and skilled nursing apartments. Eagle's Rest, a proposed residential community, will include 132 single-family dwellings. The public infrastructure for Eagle's Rest is under construction and homes are also under construction.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Gilbert Planning Area is planned for low and medium-density residential and neighborhood commercial uses. These uses encourage single-family detached and attached residential neighborhoods to be compatible with the Adams Heights community, Locksley Manor community, and the Wetlands Golf Course. Public infrastructure, to include transportation planning and future road improvements, is important for the build-out of this planning area. Transportation planning should provide for well-organized neighborhood streets along with minor collectors to properly serve Planning Areas 9 and 11. Interconnectivity of Planning Areas 7, 8, and 9 is also recommended for this planning area and future development plans.


ALDINO STEPNEY
GILBERT
LONG
TECHNOLOGY
Area 11 - Long / Heat
BATTELLE
WARWICK
BELAIR
NORTHEAST
STEVENS
PLAZA
GILES
Area 12 - Grays
City of Aberdeen
Comprehensive Plan
Planning Area 11 - Long / Heat
N
W
E
S
0.2 0.1 0 0.2 Miles
Acres - 294.85
Sq. Miles - 0.46
ABERDEEN
MARYLAND

PLANNING AREA 11: LONG/HEAT

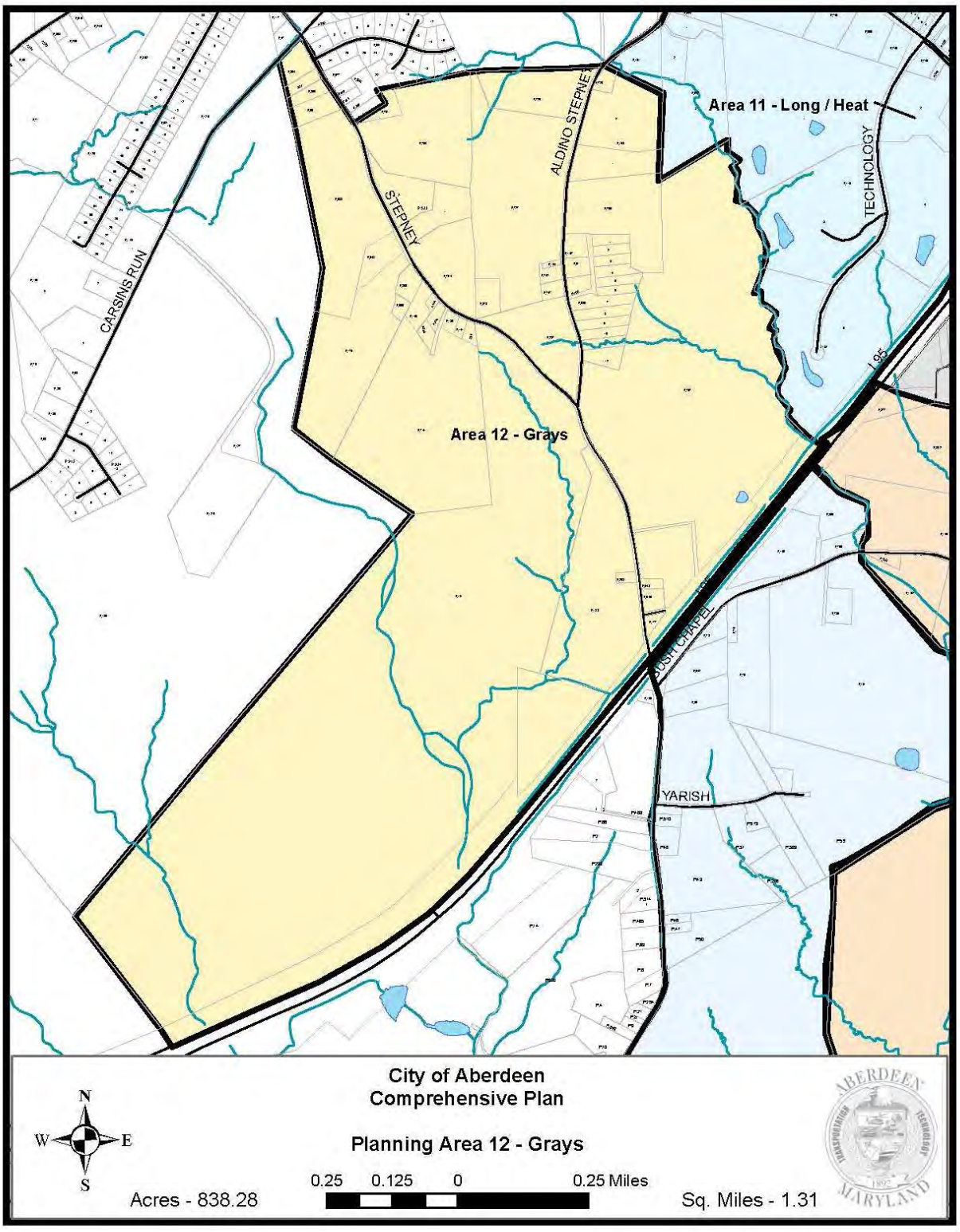
Description of Planning Area:

Planning Area 11, Long/HEAT, contains approximately 295 acres (0.46 square miles) and is northwest of the City. This area contains what is generally referred to as the northwest quadrant of the I-95 and MD 22 interchange. Beginning from the westbound off ramp from I-95 to MD 22 and proceeding to Gilbert Road (currently a dead-end), the northeastern boundary proceeds along Gilbert Road to its intersection with Technology/Long Drive. From this point, the line moves westerly along the City limits ending at a point that intersects with Aldino-Stepney Road. The northwestern boundary proceeds southward along Aldino-Stepney Road to its intersection with Stepney Road. The southwestern border runs adjacent to Planning Area 12, Grays to a point of intersection with Cranberry Run. It continues along Cranberry Run to its intersection with I-95. The southeastern border runs along I-95 northward along the southbound ramp from MD 22 back to the point of origin.

The Harford County designation for this planning area is Mixed Office/HEAT Center land use. The Harford County zoning designations are AG Agricultural District and LI Light Industrial District. One hundred and twenty acres are located in Planning Area 11 southwest of Churchville Road on what is referred to as the HEAT site. The Higher Education and Applied Technology (HEAT) Center is a partnership between local government, academia, and industry. The HEAT Center offers upper level baccalaureate and graduate programs. In addition, research and development, technology, and science firms are located at the site. Battelle Memorial Institute also has an office and research facility located off Technology Drive.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Long/HEAT Planning Area is planned for research and development, offices, and mixed uses permitted in the Integrated Business District. New commercial developments will become part of the City's I-95 Overlay District and specific reviews for architectural elements and features and land use planning, to be consistent with the existing developments, will be required.


Area 11 - Long / Heat
Area 12 - Grays
CARSINS RUN
STEPNEY
ALDINO STEPNEY
TECHNOLOGY
I-95
BUSH CHAPEL
YARISH
City of Aberdeen
Comprehensive Plan
Planning Area 12 - Grays
N
W
E
S
0.25 0.125 0 0.25 Miles
Acres - 838.28
Sq. Miles - 1.31
ABERDEEN
MARYLAND

PLANNING AREA 12: GRAYS

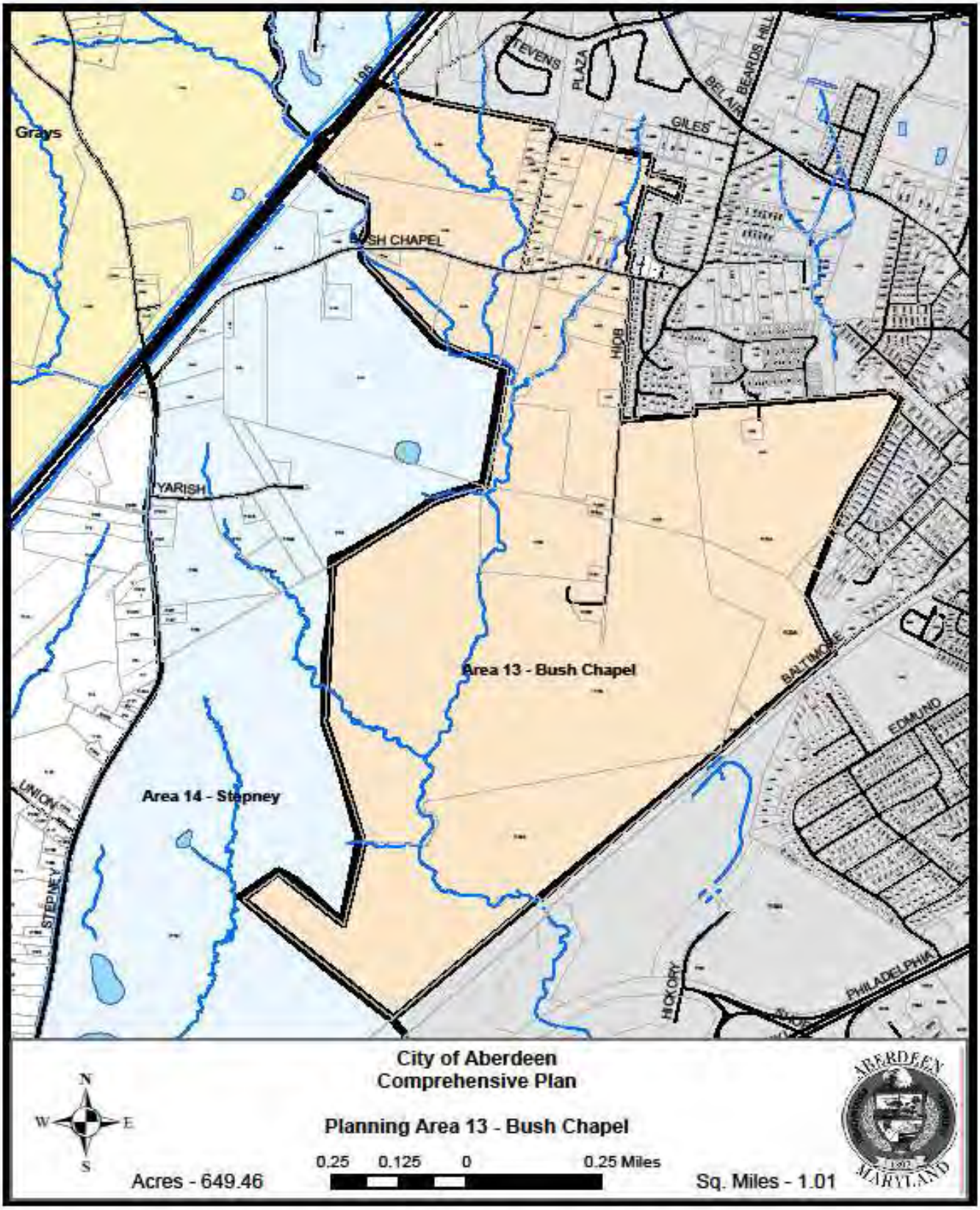
Description of Planning Area:

Planning Area 12, Grays, contains approximately 838 acres (1.31 square miles) and is west of the City. Starting at the intersection of Cranberry Run and I-95, the southeastern boundary of the planning area is I-95. Beginning at the intersection of Cranberry Run and I-95 and proceeding southwesterly along I-95 to the point of intersection with the Posner Property (Parcel 131), the southwestern and western boundaries run along properties that are outside of the one-mile radius to the point of intersection with Carsins Run Road. The northwest boundary continues along Carsins Run Road in a northeasterly direction to the intersection with Stepney Road. The northern boundary continues southward along Stepney Road for approximately a ¼ mile before heading east to an intersection with Aldino-Stepney Road. At this point, the boundary is adjacent to Planning Area 11, Long /HEAT, and continues in a southeast direction to the point of beginning.

The Harford County land use designation for this planning area is agricultural. The Harford County zoning designation is AG Agricultural District.

Future Land Use Recommendation:

At this time, the Grays Planning Area is not being considered for development by the City, but is being considered as a rural buffer. Major issues include the extension of public infrastructure to serve this planning area. In the future, when the City prepares the update to the Comprehensive Plan, we may consider the Grays Planning Area for low-density residential uses. Transportation planning should provide for well-organized neighborhood streets along with minor collectors to serve Planning Areas 11, 13, and 14.


Grays
STEVENS
PLAZA
BEARDS HILL
BEL AIR
GILES
HIGH
YARISH
Area 13 - Bush Chapel
Area 14 - Stepney
BALTIMORE
EDMUND
UNION
STEPNEY
HICKORY
PHILADELPHIA
City of Aberdeen
Comprehensive Plan
Planning Area 13 - Bush Chapel
N
W
E
S
0.25 0.125 0 0.25 Miles
Acres - 649.46
Sq. Miles - 1.01
ABERDEEN
MARYLAND

PLANNING AREA 13: BUSH CHAPEL

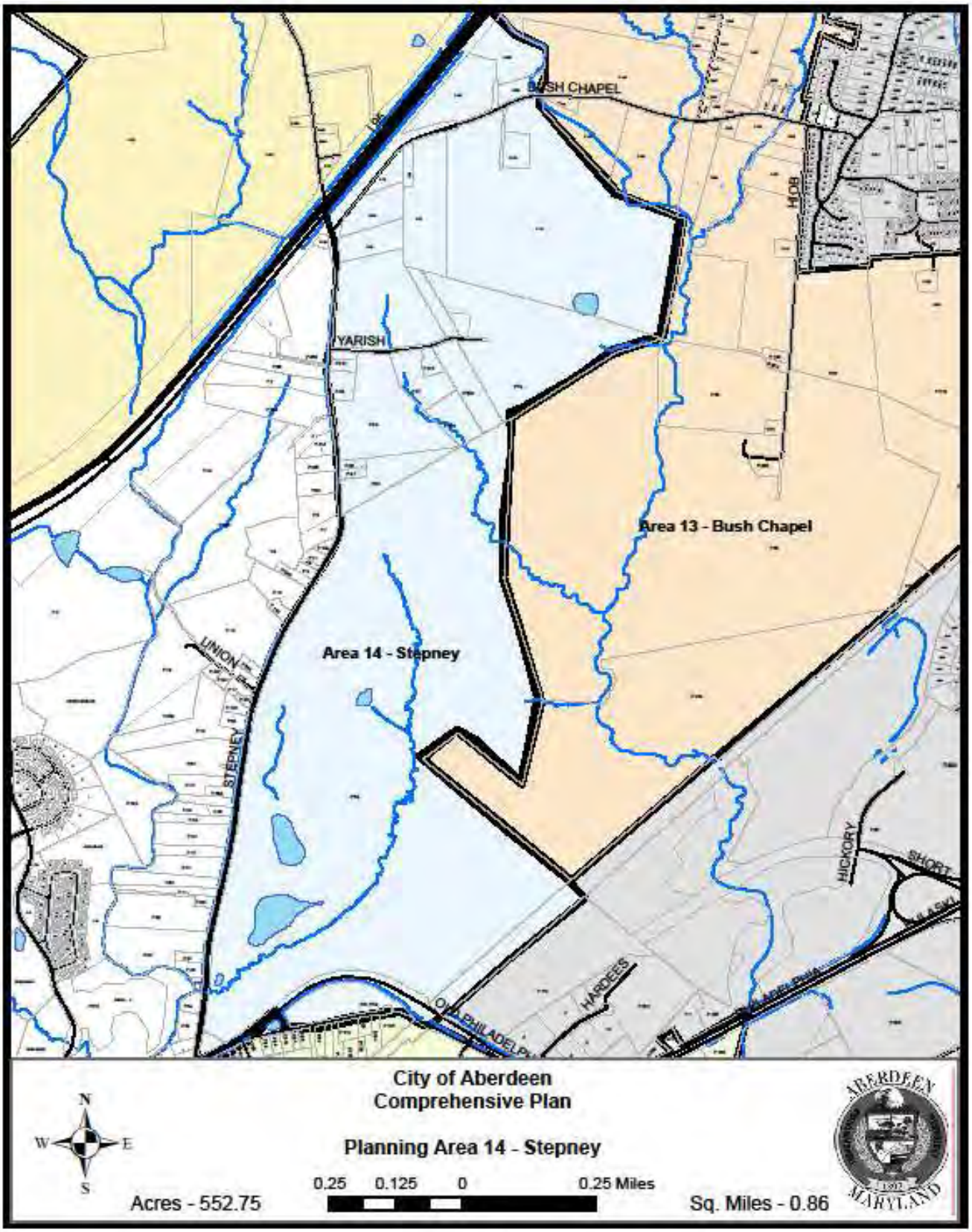
Description of Planning Area:

Planning Area 13, Bush Chapel, contains approximately 649 acres (1.01 square miles) and is located immediately west of the City. The southeastern boundary commences from a point at the end of Baltimore Street and continues southwesterly along the CSX rail line to a point of intersection with Planning Area 14, Stepney. The southwestern and western boundaries are adjacent to Planning Area 14, Stepney to a point that intersects with I-95. The northwestern boundary runs northeasterly along I-95 to a point of intersection with the City's limits. The northeastern and eastern boundaries are adjacent to the City limits back to the point of beginning.

The Harford County designations for this planning area are Medium Intensity and High Intensity land use. The Harford County zoning designations are R1 and R2 Urban Residential District, B3 General Business District, and GI General Industrial District.

Future Land Use Recommendation:

This Planning Area is a priority area recommended for future growth for the City. The Bush Chapel Planning Area is planned for potential office, research, and educational uses for the portion of the Planning Area bordering Interstate 95, north of Bush Chapel Road. Low and medium-density residential uses are planned for the balance of the area. A buffer area should be provided as a transition between all planned office, research, and educational uses and the planned and existing residential uses. Site planning will require incorporation of design strategies to preserve natural drainage ways and non-tidal wetlands. Creative approaches to these issues are encouraged. Preservation of established tree cover is required to provide additional screening and buffer planting between the areas planned for office, research, and educational uses and both surrounding the existing residential neighborhoods and planned residential uses.


BUSH CHAPEL
YARISH
Area 13 - Bush Chapel
Area 14 - Stepney
UNION
STEPNEY
HICKORY
SHORT
HARDEES
City of Aberdeen
Comprehensive Plan
Planning Area 14 - Stepney
N
W
E
S
0.25 0.125 0 0.25 Miles
Acres - 552.75
Sq. Miles - 0.86
ABERDEEN
1892
MARYLAND

PLANNING AREA 14: STEPNEY

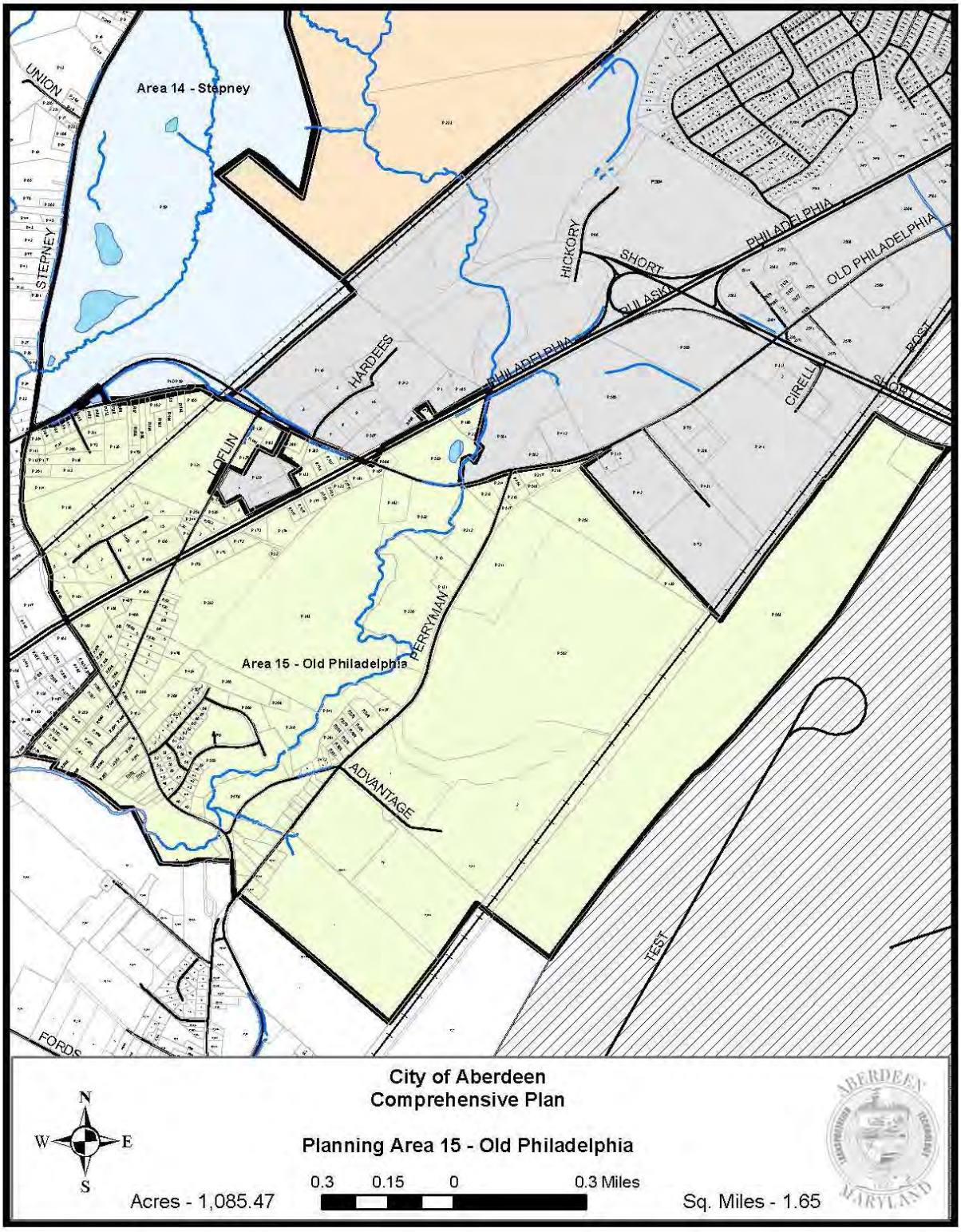
Description of Planning Area:

Planning Area 14, Stepney, contains approximately 553 acres (0.86 square miles) and is located southwest of the City. The western boundary begins at the point of the intersection of Stepney Road and MD 7 proceeding north along Stepney Road to its intersection with I-95, then northeasterly along I-95 to the point of intersection with Planning Area 13, Bush Chapel. The eastern boundary continues from this point adjacent to Planning Area 13, to a point of intersection with the City limits at the CSX right-of-way. The southeastern border runs adjacent to the City limits to MD 7 to the point of beginning.

The Harford County designations for this planning area are Medium Intensity and State and County Parks land use. The Harford County zoning designations are AG Agricultural District, R1, R2, and R3 Urban Residential District and B1 Neighborhood Business District. Formerly known as the Beechtree Golf Course, a large-scale residential community to include 768 units has been approved by Harford County for this area and is known as Beechtree Estates and the Trails at Beechtree. Construction has begun for the development.

Future Land Use Recommendation:

At this time, the City is not considering the Stepney Planning Area for development. Major issues include the extension of public infrastructure to serve this planning area. In the future, when the City prepares the update to the Comprehensive Plan, we may consider the Stepney Planning Area for low-density residential uses. Planning Area 14 is ideally located within the main transportation corridor of the region.


Area 14 - Stepney
Area 15 - Old Philadelphia
UNION
STEPNEY
HICKORY
SHORT
PHILADELPHIA
OLD PHILADELPHIA
HARDEES
LOFLIN
CIRELL
PERRYMAN
ADVANTAGE
TEST
FORDS
City of Aberdeen
Comprehensive Plan
Planning Area 15 - Old Philadelphia
N
W
E
S
0.3 0.15 0 0.3 Miles
Acres - 1,085.47
Sq. Miles - 1.65
ABERDEEN MARYLAND

PLANNING AREA 15: OLD PHILADELPHIA

Description of Planning Area:

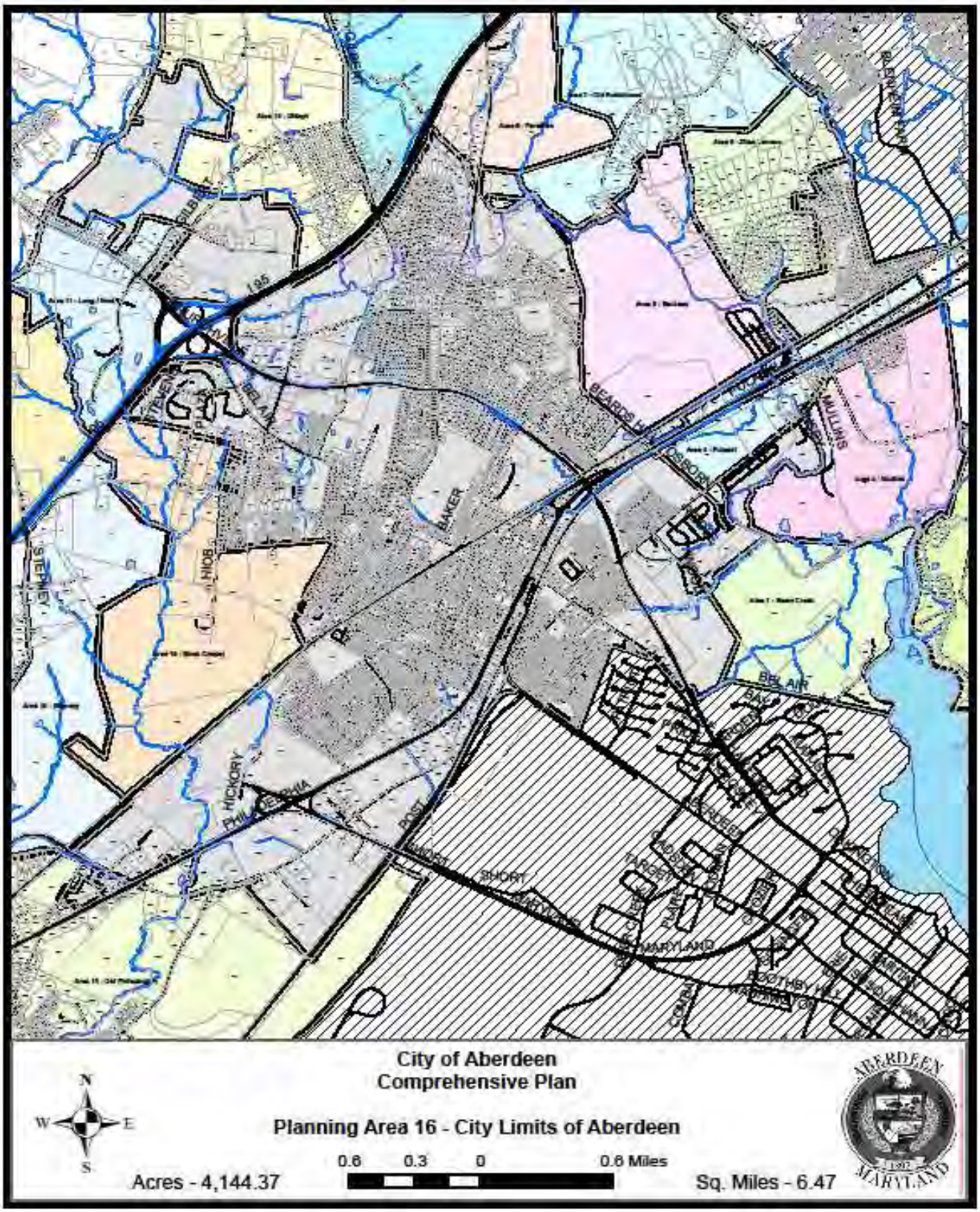
Planning Area 15, Old Philadelphia, contains approximately 1,054 acres (1.65 square miles) and is located southwest of the City. Beginning at a point from MD 7 and Stepney Road, the northern boundary proceeds adjacent to Planning Area 14, Ripken, to a point of intersection with the City limits at the CSX right-of-way. The northern boundary continues along the City limits to the intersection with the Aberdeen Proving Ground. The eastern boundary runs along Aberdeen Proving Ground for approximately 1½ miles before turning northwest to a point just beyond the Amtrak right-of-way. The boundary follows the Amtrak right-of-way for approximately ½ mile before once again turning to the northwest to an intersection with MD 159. The southwestern boundary continues roughly parallel to Cranberry Run for approximately ½ mile. The western border proceeds northeasterly for approximately ½ mile to an intersection with Spesutia Road and follows Spesutia Road to US Route 40. The western boundary continues across US Route 40 and the CSX right-of-way back to the point of beginning.

The Harford County land use designations for this planning area are Industrial/Employment, Low Intensity, Medium Intensity, and High Intensity. The Harford County zoning designations are LI Light Industrial District, AG Agricultural District, GI General Industrial District, R1, R2, R3, and R4 Urban Residential District, B1 Neighborhood Commercial District, and CI Commercial Industrial District.

A variety of industrial warehouse/distribution facilities are currently located in this planning area.

Future Land Use Recommendation:

At this time, the City is not considering the Old Philadelphia Planning Area for development. Major issues include the extension of public infrastructure to serve this planning area. In the future, when the City prepares the update to the Comprehensive Plan, we may consider the Old Philadelphia Planning Area for commercial and light industrial uses. Planning Area 15 is ideally located within the main transportation corridor of the region.


City of Aberdeen
Comprehensive Plan
Planning Area 16 - City Limits of Aberdeen
N
W
E
S
0.6 0.3 0 0.6 Miles
Acres - 4,144.37
Sq. Miles - 6.47
ABERDEEN
1892
MARYLAND
BEARDS HILL
MULLINS
BAKER
STEPHEN
HICKORY
POST
SHORT
BEL AIR
MARYLAND
BOOTHBY HILL

PLANNING AREA 16: ABERDEEN

Description of Planning Area:

Planning Area 16, Aberdeen, consists of all the land within the corporate limits. The City of Aberdeen contains 4,144 acres (6.47 square miles). According to the U.S. Census Bureau (2010 Census) the current population is 14,959.

Located 30 miles north of Baltimore, Aberdeen flanks the northeastern coastal transportation corridor stretching from Washington to Boston. Direct linkages to this transportation network have been a major force in shaping the City's past growth and will continue to influence its future growth. Two major railroad lines pass through the City. When the divided Pulaski Highway replaced the old, winding Philadelphia Post Road in the 1930s, extensive commercial development followed. As in the past, new development opportunities can be traced to the growth of Aberdeen Proving Ground (APG) and major improvements in the transportation system. With I-95 passing through Aberdeen on the northwest, the pressures for land development opportunities have emerged at the I-95 Interchange, creating an additional focus of activity in Aberdeen.

Future of Aberdeen

The City has experienced moderate growth over the past 10 years. The pace of growth in the City and Harford County is expected to increase during the next decade. Under restructuring mandated in 2005 by the Base Realignment and Closure (BRAC) Commission, an influx of jobs and people associated with the adjacent APG is expected to add to growth pressures in Aberdeen and Harford County and their surrounding areas. It is anticipated that BRAC will be a significant source of economic and demographic expansion for Harford County. Due to the proximity of APG to Aberdeen, there will be increased demands for housing, public services, retail, and office uses.

Economic Development Opportunities

Aberdeen is the home of such businesses as C&S Wholesale Grocers, Frito Lay, Home Depot, Mitre Corporation, Northrop-Grumman, Pier I Imports, Prime Source, Saks Fifth Avenue, Target, and Walmart. The groundwork has been laid to attract new high-tech businesses and to expand the existing strong business base, as well as grow in the hospitality and food service sectors.

APG is an economic driver that will positively influence new residential and commercial development and assist in the continued revitalization in Aberdeen. Bringing 8,200 new positions to APG will be one of the largest BRAC movements in history, considering the number of contractors and services that will follow the relocated positions. Taking advantage of this economic opportunity will help in redeveloping and expanding the City's commercial properties and be instrumental in shaping the future of Aberdeen's commercial districts. Even as commercial vacancies in our downtown have been decreasing since 2004, many properties along

the US 40, West Bel Air, and East Bel Air commercial corridors are available for redevelopment. These commercial corridors are in close proximity to the Aberdeen Train Station and APG.

Attracting office and retail business to take advantage of underutilized and vacant commercial properties will diversify the retail segment, increase job opportunities, and promote additional pedestrian traffic. The City has implemented design guidelines in the Downtown Revitalization Overlay District, which includes all of US 40 and part of West Bel Air Avenue, and the I-95 Overlay District, which includes MD 22, part of Gilbert Road, and the portion of I-95 located within the current City limits. The design guidelines incorporate uniform development themes and streetscape design to create a pleasing aesthetic, foster a "pride of place," and protect the value of public and private investment in properties located within the boundaries of the Overlay Districts.

The City has several incentive programs to attract new commercial development and redevelopment opportunities. The incentive programs include the Greater Aberdeen-Havre de Grace Enterprise Zone Program, Aberdeen BRAC Revitalization Zone, Historically Underutilized Business (HUB) Zone, Community Legacy Façade Program, and Aberdeen Revolving Loan Fund Program. Criteria for each incentive program can be found in the Aberdeen Business Resource Guide.

Multimodal Transportation Center Initiatives

The existing Aberdeen Train Station provides access to MARC and Amtrak trains, local transit buses, and taxi service. Ridership has increased over the years and the demand for parking exceeds the available parking lot capacity. The existing rail commuter service is primarily focused on access to Baltimore and Washington, D.C. It is projected that an increase in rail service in Aberdeen will be needed due to expansion at APG.

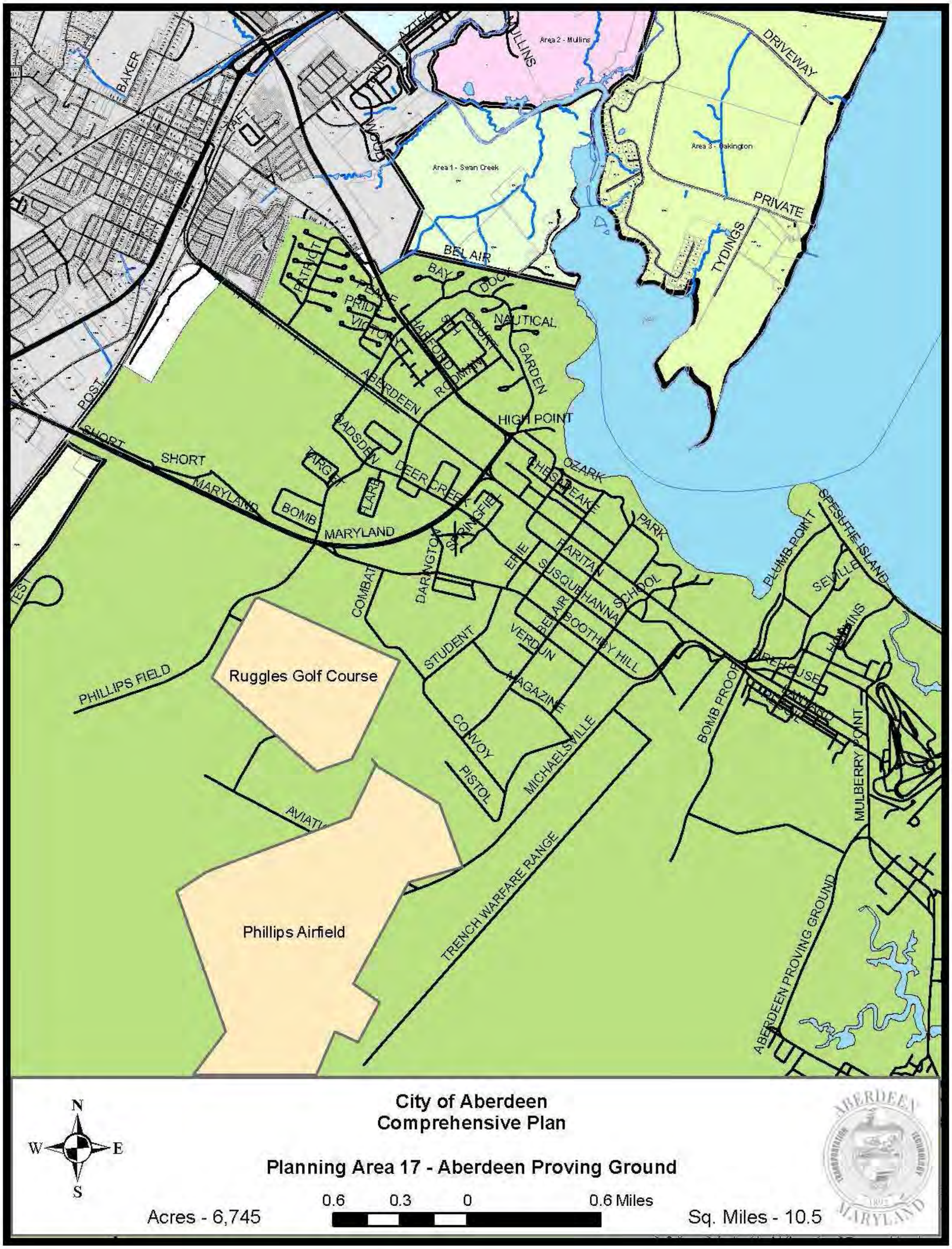
The City has been working closely with Harford County and the Maryland Transit Administration to create a multimodal transportation center and develop Transit Oriented Development initiatives around the existing Aberdeen Train Station that will:

1. Continue to serve commuter rail needs;
2. Serve the expanding needs of APG and Harford County; and
3. Support the land use and economic development goals of the City and Harford County.

The Harford County Office of Economic Development commissioned a feasibility study that evaluated and explored alternatives for an expanded multimodal transportation center. The Harford County Multimodal Transportation Center Feasibility Study evaluated the existing train station location and two alternative locations. As part of the evaluation process, consideration was given to mixed use, transit oriented development and the potential for economic development opportunities associated with a major passenger train station. The feasibility study was completed in August 2009. The study recommends that the existing train station site be utilized for the development of a Multimodal Transportation Center. This site allows for reuse of the existing facilities, with estimated capital costs being less than the two alternative locations.

Traffic impacts associated with the existing train station would also be less than the two alternative locations. Due to the proximity to downtown Aberdeen, the existing train station would best serve the population of the City and enhance pedestrian and bicycle movement. Finally, the potential infill and transit oriented development opportunities in the vicinity of the current train station could take advantage of the existing public infrastructure and also assist in strengthening businesses in the downtown area.

Governor Martin O'Malley recently designated the Aberdeen Train Station as a future site for Transit Oriented Development, which supports mixed-use development around the station area. Additionally, the Maryland Transit Administration (MTA) is developing plans for a 155-space expansion of parking capacity at the Aberdeen MARC Station on an MTA-owned parcel at Taft Street (Phase I, approximately 65 spaces) and along APG Road below East Bel Air Avenue (Phase II, approximately 90 spaces), opposite the station building. This project will address near term parking demands at the Aberdeen Train Station.


Area 1 - Swan Creek
Area 2 - Mullins
Area 3 - Oakington
BAKER
BEL AIR
BAY
NAUTICAL
GARDEN
ABERDEEN
HIGH POINT
SHORT
MARYLAND
BOMB
OZARK
CHESAPEAKE
PARK
ERIE
RARITAN
SUSQUEHANNA
SCHOOL
VERDUN
BOOTHBY HILL
STUDENT
MAGAZINE
CONVOY
PISTOL
MICHAELSVILLE
COMBAT
DARLINGTON
PHILLIPS FIELD
Ruggles Golf Course
Phillips Airfield
TRENCH WARFARE RANGE
BOMB PROOF
MULBERRY POINT
ABERDEEN PROVING GROUND
PLUMB POINT
SPESUTIE ISLAND
DRIVEWAY
PRIVATE
TYDINGS
City of Aberdeen
Comprehensive Plan
Planning Area 17 - Aberdeen Proving Ground
N
S
W
E
0.6
0.3
0
0.6 Miles
Acres - 6,745
Sq. Miles - 10.5
ABERDEEN
MARYLAND

PLANNING AREA 17: Aberdeen Proving Ground

Description of Planning Area:

Aberdeen Proving Ground (APG) comprises 72,518 acres, including the Edgewood Area (also known as APG South). The current workforce is approximately 17,450, including 9,550 civilian employees, 4,000 military personnel, and 3,900 contractors.

In 1996, the State of Maryland designated the Greater Aberdeen-Havre de Grace Enterprise Zone, which includes a portion of APG. A total of 1,324 acres is included in this area. The Enterprise Zone designation provides income tax credits and real property tax credits for capital investment improvements to all qualifying properties. At this time, the City provides water and wastewater services to the developed area of APG adjacent to the City's corporate limits. APG South is served by Harford County.

BRAC is an acronym that stands for Base Realignment And Closure. It is a process used by the Department of Defense to reorganize its infrastructure into one where operational capacity is optimized for both war fighting capability and efficiency, and joint activity opportunities are aggressively pursued. BRAC furthers defense transformation, maximizes joint utilization of defense resources, and re-allocates military personnel from supporting and securing obsolete infrastructure.

BRAC related growth at APG is projected to result in an approximate increase of 8,200 new jobs. Incoming and expanding organizations at APG include Army Team C4ISR (Command, Control, Communication, Computers, Intelligence, Surveillance, & Reconnaissance), U.S. Army Test and Evaluation Command (includes Army Evaluation Center), Chemical/Biological Research and Development Organizations, Medical Chemical Defense Research, Defense Threat Reduction Agency (DTRA), Joint Program Executive Office (JPEO), Non-Medical Chemical Biological Defense Research, U.S. Army Research Institute, and the U.S. Army Research Laboratory Vehicle Technology Directorate.

The Army Team C41SR Campus in the Aberdeen area will accommodate approximately 7,500 combined positions from Fort Monmouth, NJ, Fort Belvoir, VA, and Redstone Arsenal, AL, to state-of-the-art facilities. The team established a presence in 2007. Large-scale moves to APG began in 2010 and are continuing at the present time. All moves are anticipated for completion by September 2011.

Future Land Use Recommendation:

Annexation of APG land in the Enterprise Zone is not under consideration. The City of Aberdeen recognizes the potential for development of APG acreage in the Enterprise Zone and the need to plan for drinking water and wastewater services for this area. The City of Aberdeen, in cooperation with Harford County and the State of Maryland, is working with APG officials on future development and is promoting utilization of APG assets in a positive manner for the Army and for the economic strength of this Planning Area.

Past Growth Patterns and Existing Land Use

In the early 1800s, the Aberdeen area was primarily agrarian, with a main road running southwest to Baltimore and northeast to Philadelphia, and a road northwest to Bel Air. The original railroad was called the Philadelphia, Wilmington, and Baltimore Railroad, later to become the Pennsylvania Railroad, and now part of the Amtrak system. With the advent of the railroad came a station and an engine water tower. Eventually a small area was divided into building lots, and thus a town was created around the intersection of the Bel Air and Baltimore to Philadelphia roads and the railroad station. Aberdeen soon became a railroad forwarding point for local agricultural products destined for the markets of Baltimore and Philadelphia. The availability of this transportation avenue led to the development of a canning industry in the mid-1850s. Later, another railroad, the Baltimore & Ohio (B&O), extended its line through the Aberdeen area, parallel and close to the first railroad. It also had a station and a modest railroad yard close to a canning facility. In 1892, three small entities, Hall's Cross Roads, Aberdeen, and Mechanicsville, were incorporated into what is now known as Aberdeen.

The signature event in Aberdeen's history occurred in 1917, at the outset of America's involvement in World War I, when the U.S. Army established Aberdeen Proving Ground. This move reduced available farmland and presented a need for more civilian housing. As a result of this, Aberdeen witnessed a growth spurt and started the transition from an economy based on agriculture, to a military support and bedroom economy.

World War II increased the pace of the transition, with more living quarters and support facilities being built. After World War II, the first noticeable evidence of local planning taking place was the development of Aberdeen Hills in the mid-1950s. Here the farmland was plotted for development along one side of Paradise Road, with a large center strip of land left vacant between the two halves of the development. After about ten years, this strip of land became the new MD 22 leading into Aberdeen Proving Ground. This was the genesis of Aberdeen's development of zoning regulations and long-range plans for the expansion of the City, including establishment of zoning districts and their related requirements. A Planning and Zoning Commission was formed and with that came the start of deciding how the City should evolve.

From that early planning start, the City of Aberdeen and the Planning Commission started the current era of serious efforts to lay down guidelines, ordinances, and procedures for the orderly growth of the community, as well as transportation and facilities networks. Since the mid-1950s, projects such as Aberdeen Hills, the Baltimore Street extension, Hillcrest, Hillsdale, Ramsgate Estates, Royal Exchange, and Windemere, were developed consistent with modern planning principles. Likewise, there has been an increase of businesses in the area to accompany the corresponding development.

A big change and evolution to the Aberdeen planning process came with the building of I-95 and the creation of the interchange at MD 22. Evidence of this change is the clustering of Beards Hill Plaza, Aberdeen Marketplace, and Aberdeen Shopping Plaza, along with eight hotels, around the south side of the interchange. Dividing the interchange of I-95 and MD 22 into four quarters, the southern two quarters became a dynamic commercial and hospitality area. The northwest quarter became primarily technology and educational uses. The northeast quarter is

mostly recreational, in the form of Ripken Stadium and Wetlands Golf Course, a hospitality facility, and a proposed continuing care facility. Further development continues in all four quarters.

The south end of Aberdeen, along U.S. 40, is a commercial, distribution, and industrial area, with such companies as Frito Lay, Saks Fifth Avenue, and Wal-Mart. This area will continue to undergo major changes due to its proximity to the primary entrance to Aberdeen Proving Ground. This will attract the need for additional businesses and office complexes.

Thus, the once sleepy village of less than 2,000 inhabitants around 1920 grew to a population of over 14,000 in 2010. As Aberdeen grew, so did the basic demands on our roads, water and wastewater facilities, and fire and police manpower and equipment needs. Today, these facilities are continuously studied, reviewed, and appropriately increased to meet the demands of growth. In addition to these demands, development plans have had to consider preservation of non-tidal wetlands, maximum allowable bay discharge concentrations, endangered species habitats, and required green space, to name a few.

Municipal growth is guided by the City's Department of Planning and Community Development and the Planning Commission, with approval authority vested in the City Council. Governing this growth are the following documents which area periodically reviewed, revised, and approved by the City Council:

1. Aberdeen Comprehensive Plan
2. Annexation Procedures
3. Subdivision Regulations
4. Code of the City of Aberdeen, Development Code
5. Code of the City of Aberdeen, Wellhead Protection
6. Code of the City of Aberdeen, Forest Conservation
7. Code of the City of Aberdeen, Stormwater Management
8. Code of the City of Aberdeen, Sign Code
9. Overlay District Regulations and Requirements
10. Transportation Plan

Population and Household Projections

Based on the U.S. Census Bureau, 2010 Census information, the City of Aberdeen has a population of 14,959, an increase of 1,117 since the 2000 Census, as shown in Table 3-2. In 2000 the City had a total of 5,472 households. Based on current projections, an estimated 1,241 additional households could be added to the City by the year 2030.

Table 3-2 Population & Household Projections

Census/Projections	Aberdeen Population/ Projections	Aberdeen Households/ Projections	Aberdeen Housing Units/Projections
1970	12,375	3,807	4,011
1980	11,533	4,190	4,550
1990	13,087	5,001	5,214
2000	13,842	5,472	5,894
2010	14,959	5,640	5,922
2015	15,707	5,927	6,224
2020	16,492	6,230	6,541
2025	17,317	6,547	6,875
2030	18,183	6,881	7,225

Source: U.S. Census Bureau, 2010 Census and the Maryland Department of Planning.

Capacity of Land Available for Development within the Corporate Limits, including infill and redevelopment opportunities

The development capacity analysis estimates the number of dwelling units that would exist at ultimate build out (not strictly in the timeframe of the Plan) based on zoning, land use and restrictions, parcel data, water and wastewater service information, and information about un-developable lands. The estimates are focused on the capacity of the land to accommodate future growth based on these data, along with other assumptions about the percentage of the allowable density that is achieved when the land is developed.

Tables 3-3 and 3-4 indicate the most recent planned and approved residential and commercial developments to be located within the City limits. All public infrastructure needs in support of these development projects will be financed by the developer. All residential development projects will be required to pay the necessary Harford County School Impact Fees.

Table 3-3 Planned and Approved Residential Development Projects

Name of Proposed Project	Type and Number of Dwelling Units	Zoning/Land Use
Eagles Rest	132 single family	Integrated Business/Mixed Use
Fieldside Village	140 condominiums	Integrated Business/Mixed Use
Winston's Choice	32 townhouses	High Density Residential
Winston's Choice Addition	22 townhouses	High Density Residential
Baldwin's Addition	2 single family	High Density Residential
The Village at Carsins Run	680 units	Integrated Business/Mixed Use
Fields at Rock Glenn	101 single family	Low Density Residential
Baltimore Park	2 single family	Low Density Residential
Total Number	**1,111**	

Table 3-4 Planned and Approved Commercial Development Projects

Name of Proposed Project	Type, Number of Rooms, and/or Square footage	Zoning/Land Use
Hampton Inn	Hospitality – 105 rooms	Highway Commercial
Holiday Inn Express	Hospitality – 80 rooms	Highway Commercial
Aberdeen Corporate Park	Office – 254,000 square feet and Retail – 16,100 square feet	Highway Commercial
Greenway Business Park	Office – 138,000 square feet	Light Industrial
Rite Aid Pharmacy	Retail – 11,180 square feet	Highway Commercial
Comfort Suites	Hospitality – 75 rooms	Highway Commercial
Royal Farms Store	Convenience/Retail – 5,786 square feet	Highway Commercial
North Gate Business Park	Office – 899,000 square feet	Highway Commercial
Commons at Fieldside Village	Office – 500,000 square feet	Integrated Business
Total Square Footage or # of rooms	**260 hotel rooms** **1,791,000 square feet of offices** **33,066 square feet of retail**	

A Development Capacity Analysis, referred to as a "build-out analysis" or "inventory of buildable lots," is an estimate of the total amount of development that may be built in an area based on a variety of applicable factors, including zoning and environmental constraints. The results of the required analysis of the Development Capacity by Zoning Classification are provided in Tables 3-5 and 3-6. The growth scenario analyzed by the Aberdeen Planning Commission was related to development capacity within the City's corporate limits, based on current residential zoning and infill potential.

The analysis shows that there is capacity for an additional 1,851 dwelling units in the City, including current projects in development at Eagles Rest and The Villages of Carsins Run.

Aberdeen's population is expected to grow by about 3,224 over the next 20 years. This Plan projects a population of 18,183 in the year 2030. A strong job market due to the growth of Aberdeen Proving Ground is projected to create the demand in housing and resultant population increase.

Table 3-5 Development Capacity Analysis by Zoning Classification

Zoning District	Allowable Density	Zoning Description	Density Yield- Dwelling Unit (du)/acre	Density Yield for Areas with Wastewater or Planned for Wastewater – Dwelling Unit (du)
R-1	Residential District SFD Min. Lot Size = 15,000 sq. ft.	Low Density Residential	2.90 du/acre	2.18 du/acre
R-2	Residential District SFD Min. Lot Size = 7,200 sq. ft.	Medium Density Residential	6.05 du/acre	4.54 du/acre
R-3	Residential District SFD Min. Lot Size = 5,000 sq. ft.	High Density Residential	8.71 du/acre	6.53 du/acre
R-O	Residential District SFD Min. Lot Size = 5,000 sq. ft.	High Density Residential	8.71 du/acre	6.53 du/acre
IBD	Integrated Business District	Mixed Use		

Note: Assumed to be 75% of maximum density allowed per acre.
SFD is single-family dwelling.

Table 3-6 provides an overview of the City's total development capacity and was also developed by the Maryland Department of Planning.

Table 3-6 Capacity by Zoning District

Zoning District	New Household Capacity
R-3	607
R-2	145
R-1	147
R-O	0
B-2	0
B-3	0
M-1	0
M-2	0
IBD	952
TOTAL	**1,851**

Table 3-7 was developed by the Maryland Department of Planning. A Priority Funding Area is defined as the area within the corporate limits of the City, as it existed in 1997. The 1997 Priority Funding Areas Act capitalized on the influence of State expenditures on economic growth and development. The Priority Funding Area legislation directs State spending to support future growth to those specific areas.

Table 3-7 Development Capacity Summary Report

Result	Process	Acres	Number of Parcels	Capacity
Total Acres in Parcels and Lots		3,393	4,968	
	Subtract land zoned for nonresidential use (commercial, industrial)	1,455	382	
Residentially Zoned Acres		1,937	4,586	
	Subtract tax exempt land (tax exempt code)	258	104	
	Subtract protected lands and environmentally sensitive parcels (ag easements, wetlands, HOA lands, etc.)	190	83	
	Subtract other parcels without capacity (built out acres, etc.)	1,212	4,246	
Acres and Parcels with Capacity	Total capacity	477	158	1,851
Capacity Inside PFA		456	157	1,750
Capacity Outside PFA				
Subsets of the Analysis of Interest (these are not additive)				
Acres and Parcels with capacity associated with Underdeveloped land.	Improved Parcels (>S 10,000), less than 5 acres.	90	53	141
Acres and Parcels Associated with Small parcels.	Parcels <2 acres in size (improved or unimproved)	91	122	211
Acres and Parcels associated with larger, undeveloped parcels.	Includes unimproved parcels, greater than 2 acres with capacity and improved parcels greater than 5 acres with capacity.	340	20	1,563

Source: Maryland Department of Planning

Land Area needed to Fulfill Demand for Development at Densities Consistent with Smart Growth Principles

The City's long term planning supports the State's 12 Visions as provided in Chapter 1. All future development and annexations will be in accordance with Smart Growth principles. The future planned development will be consistent with the density requirements of the State's Priority Funding Areas and, in general, the principles of Smart Growth. Additionally, the future planned development will be in a manner that makes efficient use of the land and public infrastructure.

Public Services and Infrastructure Required to Accommodate Growth within the Corporate Limits and Future Growth Areas

Public Schools

Harford County Government is charged with the acquisition, development, construction, and funding of public schools within the City and any future growth areas. In addition, Harford County Government determines when a public school has reached its capacity based on provisions adopted within the Adequate Public Facilities provisions of the Harford County Code. The adopted adequacy standard for the Public School system is the achievement of 110 percent of rated capacity (or better) within 5 years. At this time, as indicated in Tables 3-8, 3-9, and 3-10, all Aberdeen elementary, middle, and high schools are below their State-rated capacity.

For the time frame of this plan, the City provides building permit and development activity to Harford County Department of Planning and Zoning for their Annual Growth Report. The City has no control over residential development activity in Harford County (i.e. Beechtree Estates and Hollywoods) that affects Aberdeen school enrollment and capacities.

Harford County Government produces an Annual Growth Report that identifies facilities below the County's adopted minimum standards. The Harford County Annual Growth Report includes information and analysis regarding public schools, water and wastewater systems, and road intersections. This information is provided to the City's Department of Planning and Community Development.

The information provided in Tables 3-8, 3-9, and 3-10 is derived from the Harford County Government Department of Planning and Zoning 2009 Annual Growth Report.

Table 3-8 Aberdeen/Harford County School Enrollments and Projections Elementary Schools

Elementary School Name	State-Rated Capacity	Actual Enrollment 2009-2010	Projected Enrollment 2010-2011	Projected Enrollment 2011-2012
Bakerfield	455	438	434	452
G. Lisby at Hillsdale	432	316	319	321
Hall's Cross Roads	632	415	439	436

Table 3-9 Aberdeen/Harford County School Enrollments and Projections Middle School

Middle School	State-Rated Capacity	Actual Enrollment 2009-2010	Projected Enrollment 2010-2011	Projected Enrollment 2011-2012
Aberdeen	1,444	1,095	1,095	1,086

Table 3-10 Aberdeen/Harford County School Enrollments and Projections High School

High School	State-Rated Capacity	Actual Enrollment 2009-2010	Projected Enrollment 2010-2011	Projected Enrollment 2011-2012
Aberdeen	1,679	1,464	1,464	1,515

Public Library Services

The Aberdeen branch of the Harford County Library is located at 21 Franklin Street, across from the Aberdeen Municipal Center. Harford County Government is charged with the acquisition, development, construction, and funding of public libraries within the City and any future growth areas. At this time, no capital improvement plans have been approved for the expansion of library services at this branch location.

Public Safety, including Emergency Medical Response

The Aberdeen Fire Department has been serving the citizens of Aberdeen and Harford County for over 100 years. The Aberdeen Fire Department is a volunteer organization that provides primary emergency services for approximately 22 square miles and 24,500 people. This includes areas outside of the corporate limits of Aberdeen. The Aberdeen Fire Department has 63 volunteer firefighters, 17 emergency medical volunteer personnel, and 40 part-time paid emergency medical staff. Aberdeen Fire House No. 3 was recently reconstructed and opened for service in June 2010. The Aberdeen Fire Department operates one main station and three firehouses (these are further described in Chapter 5 - Community Facilities Element). Calls for service have increased due to population growth, traffic accidents, and construction activity. The City of Aberdeen, Harford County, and the State of Maryland provides funding to support the Aberdeen Fire Department.

The Aberdeen Police Department consists of 44 patrol officers, full-time dispatchers, and clerical staff. A manpower assessment was completed in January 2009. The assessment recommended a total of 42 officers for patrol needs, including supervisors (corporals and sergeants). The analysis of patrol staffing needs in Aberdeen did not consider issues such as staffing levels needed in specialty functions, alternative response strategies, quality of response to calls for service, current response of back up officers to calls for service, appropriateness of current approaches to back up, overtime required to handle calls for service, overtime provided by grants, or the number of on-duty officers needed to staff special events.

For the purpose of this Plan, no additional officers are needed for patrol. We recognize that the population growth and expanded business activity reflected in this element will require additional police protection in the future. The manpower assessment that was completed in January 2009 recommended an in-depth staffing analysis/allocation plan be conducted every two to three years.

Public Water, Wastewater, and Stormwater Management Facilities

As referenced in Chapter 10 - Water Resource Element, the City provides public water and wastewater service to 4,800 customers and operates a 1.5 million gallons per day (MGD) Water Treatment Plant, with an additional 600,000 gallons per day water capacity totaling 2.1 MGD. The City also operates a 4.0 MGD Wastewater Treatment Plant with associated pumping stations in various locations in the City. For further details on water, wastewater, stormwater management facilities, capacities, and future plans, please refer to Chapter 10 - Water Resource Element.

Public Recreational Facilities

As referenced in Chapter 5 - Community Facilities Element, there is a need to develop a community center and park along Beards Hill Road. The City owns approximately 34 acres located off Beards Hill Road, bounded by I-95 and Carsins Run. The proposed recreational plan for this area is to develop athletic fields, nature trails, a community center for seniors and youth, and associated parking lot. The City is currently working with the Harford County Department

of Parks and Recreation and the State of Maryland's Department of Natural Resources on this project. The City also owns the Aberdeen Swim Center located off Old Robinhood Road. The swim center includes an Olympic size swimming pool, youth pool, picnic area, and playground equipment. The Aberdeen Swim Center is open for public use and is managed by the Boys and Girls Club of Harford County.

Additional community parks will also be recommended for future growth areas of the City.

Anticipated Funding Mechanisms to Support Public Services and Infrastructure

Background

New development in Aberdeen will require additional public safety and emergency services, water and wastewater service area expansions, and recreational facilities. The new Aberdeen High School was completed in 2008, and Aberdeen Fire Station No. 3 was recently reconstructed on MD 22. No further expansions of schools or fire safety facilities are planned at this time. However, based on future development, both will be expanded along with other municipal services as necessary.

Financing Responsibilities

Construction of new public schools in Harford County is funded through general obligation bonds, transfer and recordation fees, State contributions, and funds from current operating revenues. The proposed FY2011 Harford County Capital Budget includes over $24.8 million in funding for 36 school projects.

In 1993, Harford County began assessing a tax on the transfer of property. Half of the transfer tax revenues are dedicated to school construction funding, while the other half is used to fund land preservation activities. In addition to the transfer tax, Harford County also levies recordation fees to fund improvements in public infrastructure. Recordation revenues go to schools, parks and recreation capital projects, and water and wastewater system debt service. In addition, builders of new residential dwelling units must pay a School Development Impact Fee of between $1,200 and $6,000 (depending on the type of residential construction) to Harford County before receiving a building permit, and must also pay for water and wastewater connection fees.

Protection of Sensitive Areas within the Future Growth Areas

Chapter 8 - Sensitive Areas Element, describes the streams, critical areas, wetlands and their buffers, floodplains, habitats of threatened and endangered species, agricultural and forested lands intended for resource protection or conservation, hydrogeology, areas of steep slope, and historical sites in and around the City. Most of these sensitive areas are associated with three major stream valleys: Swan Creek, Cranberry Run, and Gashey's Creek.

Policies to protect those natural resources are further described in the Water Resources and Sensitive Areas Elements of the Plan, as well as the Code of the City of Aberdeen. These policies and ordinances emphasize the concentration of development in environmentally suitable areas to minimize adverse impact to these sensitive areas in and around the City.

Annexation Procedures

Section 235-14, Annexation policy and procedures, of the Aberdeen City Code provides applicants the detailed information, processes, and procedures for review of annexation petitions. The City adopted this Annexation Ordinance in March 2008.

1) Policy. The following principles shall govern annexation:

a) The City Council may consider and act upon a petition for the annexation of land contiguous and adjacent to the corporate limits of the City in order to promote the health, safety, welfare and economic development of the City.

b) The annexation may be appropriate when it promotes coordinated planning for the area surrounding the land proposed for annexation, and where it is consistent with the plans for the present and future development of the City, and where it will not result in isolated development inconsistent with surrounding land uses.

c) The annexation must contribute to the realization and/or furtherance of the goals and objectives of the Comprehensive Plan.

d) The location relative to existing public facilities and a review of the City's ability to provide public facilities or the potential of alternative non-public facilities to serve the annexation area.

e) The development of relevant conditions for the protection and benefit of the residents of the City.

f) The annexation will not result in an adverse fiscal impact upon the City.

2) Procedures. The following procedures shall govern annexation and the zoning of land so annexed**.**

a) Petition Filing Contents

A petition for annexation, prepared in compliance with Section 19 of Article 23A of the Annotated Code of Maryland, shall be filed with the City Clerk, together with fifteen (15) copies of the petition and a nonrefundable fee as established by resolution of the City Council. The City may require additional copies to be provided to the City at its discretion. The petition shall include the following:

b) Descriptive Data
   i) A legal description of the property with metes and bounds.
   ii) Name and address of all members, stockholders, partners, or other individuals having a legal or equitable interest in the entity that owns an interest in the property.
   iii) The names and addresses of all persons residing in the area to be annexed.

c) Exhibit
   i) Showing the legal boundaries of the property, to include complete parcels and all property lines in order to eliminate non-contiguous land that may be annexed in the future.
   ii) The existing land use conditions (county).
   iii) Existing County zoning and the petitioner's proposed City zoning.
   iv) A property tax map.
   v) An aerial photographic map at an appropriate scale.
   vi) Topographic map of the property at an appropriate scale.
   vii) Existing public facilities and improvements.
   viii) Existing reserved or public areas.

d) Certification that each owner of real property, both within the area of the proposed annexation and contiguous to the annexation area, has either executed the petition or has been sent by first class mail to the address listed in the assessment records, within ten (10) days of the filing of the petition, a summary in a format provided by the City.

e) Concept Plan
   i) Showing the boundary of the area to be annexed.
   ii) Showing the general location of each proposed land use (residential with type, commercial, open space, etc.) on the property and the percentage of the whole for each use. General location of land uses may be shown as irregular graphic shapes depicting the approximate size and relationship to adjacent land uses.
   iii) Providing a table listing densities and land use by type, including the area of each.
   iv) Showing the density of residential development, the maximum and minimum lot sizes, and the anticipated square footage of commercial and industrial buildings.
   v) Showing existing and proposed arterial and collector streets to the adjoining properties (where applicable) and their relationship to the principal land uses on the site, consistent with the adopted Transportation Element and Major Thoroughfare Plan for the City.
   vi) Showing existing and proposed major utility lines or facilities and their relationship to the principal land uses on the site.
   vii) Showing contour lines at a maximum of five (5) foot intervals.
   viii) Showing significant natural or manmade features on the site and contiguous to the property, as available from current Harford County or other pertinent GIS databases.

f) Description of municipal services that need to be upgraded, initiated, or extended, together with a recommendation regarding the priority for accomplishing the improvements and a recommendation as to possible sources of funding and recoupment for any capital improvements.

g) Estimation of the potential revenue that will be generated from the development of the area to be annexed and which will be realized by the City.

h) Description of the social and economic characteristics of the proposed area to be annexed and the surrounding area.

i) Identification of existing environmental characteristics (floodplains, wetland delineations, endangered flora and fauna, etc.) of the proposed area to be annexed and the surrounding area with information relating to any environmental impact which annexation and development might have upon these characteristics.

j) Description of any unique characteristics (i.e., historical, archeological, institutional, etc.) situated in the area to be annexed and a surrounding area within a one (1) mile radius of the area to be annexed, with an analysis of how these characteristics would be impacted by annexation.

k) A detailed statement as to whether the land uses and densities permitted under the proposed City zoning classification and the land uses for the annexed area and densities permitted under the current Harford County zoning classification are, or are not, substantially different as that term is defined Article 23A, Section 9 of the Annotated Code of Maryland.

l) Community Informational Meeting (CIM) – within forty-five (45) days of the petition filing date, the Petitioner shall hold a Community Informational Meeting. This meeting will be facilitated by the City Planning staff and held at a public location (library, City Hall, etc.) adequate to serve the expected turnout of residents. The meeting shall be advertised by a posting on the property (ies) at its boundary with a public road, or at the closest public road intersection, and in a news publication of general circulation in the Aberdeen area and published weekly. The Petitioner shall coordinate the attendance of a liaison from the Planning Commission and the City Council. At a minimum, all documents included in the Petitioner's filing shall be made available for review at the CIM. The Petitioner shall submit a summary of comments (meeting minutes) made by the citizens to the City at the CIM at least ten (10) days prior to the scheduled Planning Commission hearing regarding the petition. The Petitioner also shall include a certification that the CIM was advertised.

3) Petition Preliminary Review

Within ninety (90) calendar days following the date of the filing of a petition and all required attachments, the Director of Planning and Community Development shall conduct a preliminary review of the petition with the petitioner(s), or the petitioner's representative,

and the Director of the Department of Public Works. Prior to beginning the review, the Department of Planning and Community Development shall inform the petitioner(s), in writing, of the date when the petition and all required attachments have been provided and accepted. Based upon this review, the Director of Planning and Community Development may direct the petitioner to submit additional information within a thirty-day (30) period or to take other reasonable steps with regard to the petition, including:

a) Supplementation of the information required to be submitted in the petition.

b) Provision for a study by an independent consultant selected by the City and the petitioner to evaluate the information submitted in support of the petition and to determine the fiscal impact of the annexation on the City.

c) Provision for any other studies necessary for the proper consideration of the petition.

d) Additional mailing, posting or advertising notice requirements.

4) Petition Review by Planning Commission

a) Upon completion of the Preliminary Review, the Director of Planning and Community Development shall forward the petition package to the Planning Commission no less than ten (10) days prior to the next scheduled Planning Commission meeting. At this time, the Director shall advertise the agenda of the Planning Commission in a news publication of general circulation in the Aberdeen area and published weekly. The Petitioner shall supply ten (10) paper sets and one (1) digital format copy of the completed petition package to the Director prior to this submittal.

b) The Planning Commission will review the petition for annexation and take public comment during their scheduled meeting.

c) The Planning Commission shall submit its recommendation to the Council within sixty (60) days of the Planning Commission Meeting.

5) Payment for Processing and Review

a) Petitioner shall be responsible for payment for all studies required by the Director of Planning and Community Development and reimbursement of all staff and attorney time necessary for review of the petition and all studies.

b) The staff shall keep time sheets or other invoices to account for the time spent on annexation and the hourly rate of each employee shall be established by the City.

6) Adoption of Annexation Plan

Consistent with Article 23A, Section 19(o)(3)(III) of the Annotated Code of Maryland, as amended from time to time, the Council shall adopt an annexation plan which shall be open to public review and discussion at a public hearing.

7) Public Hearing

a) When the petitioner has complied with the requirements as specified by the Director of Planning and Community Development following the preliminary review, and the annexation has been prepared and distributed, the City Council shall introduce an annexation resolution, and conduct a public hearing with regard to the proposed annexation at the time and place as shall be established by them.

b) The hearing shall be conducted and a record of the proceedings shall be preserved in a manner as the City Council prescribes.

c) A description of the annexation and a notice of the time and place of the hearing shall be published as specified in Article 23A, Section 19(d) of the Annotated Code of Maryland.

d) At the hearing, the recommendations of any board, commission, or agency shall be considered evidence.

8) Conditions

In acting favorably with regard to the petition, the City Council may include in its resolution such conditions and restrictions as are deemed necessary for the protection of the public interest, furtherance of the health, safety, and welfare of the residents of the City and to secure compliance with any relevant legal standards or requirements.

9) Annexation Agreement

a) The City may, prior to the City Council voting on the resolution, enter into an annexation agreement with persons and entities that are petitioners in the annexation petition. Only those petitioners that agree to be responsible to the City for performance of contractual or financial commitments, or that promise community benefits are required to be a party to the agreement.

b) The City Council shall hold a public hearing on the proposed agreement prior to the City's final approval and execution of the agreement and before taking a vote on the annexation resolution. The copies of the proposed agreement shall be made available to the public at City Hall no later than ten (10) calendar days prior to the public hearing.

c) The effective date of the agreement shall be the date that the approval of the annexation resolution by the City Council becomes final. Upon the annexation resolution becoming final, the agreement shall be binding upon the parties thereto, their heirs, successors, grantees and assigns.

d) The annexation agreement shall be recorded by the City in the land records of Harford County, Maryland, within thirty (30) days of the date the annexation resolution becomes final.

10) Zoning

In acting favorably with regard to the petition, the City Council shall designate the zoning classification of the annexed land as provided for in this Code and in other applicable laws, ordinances, regulations, and procedures related to zoning of annexed land.

11) Approval or Rejection

a) No property shall be annexed except by a favorable vote of a majority of the members of the City Council.

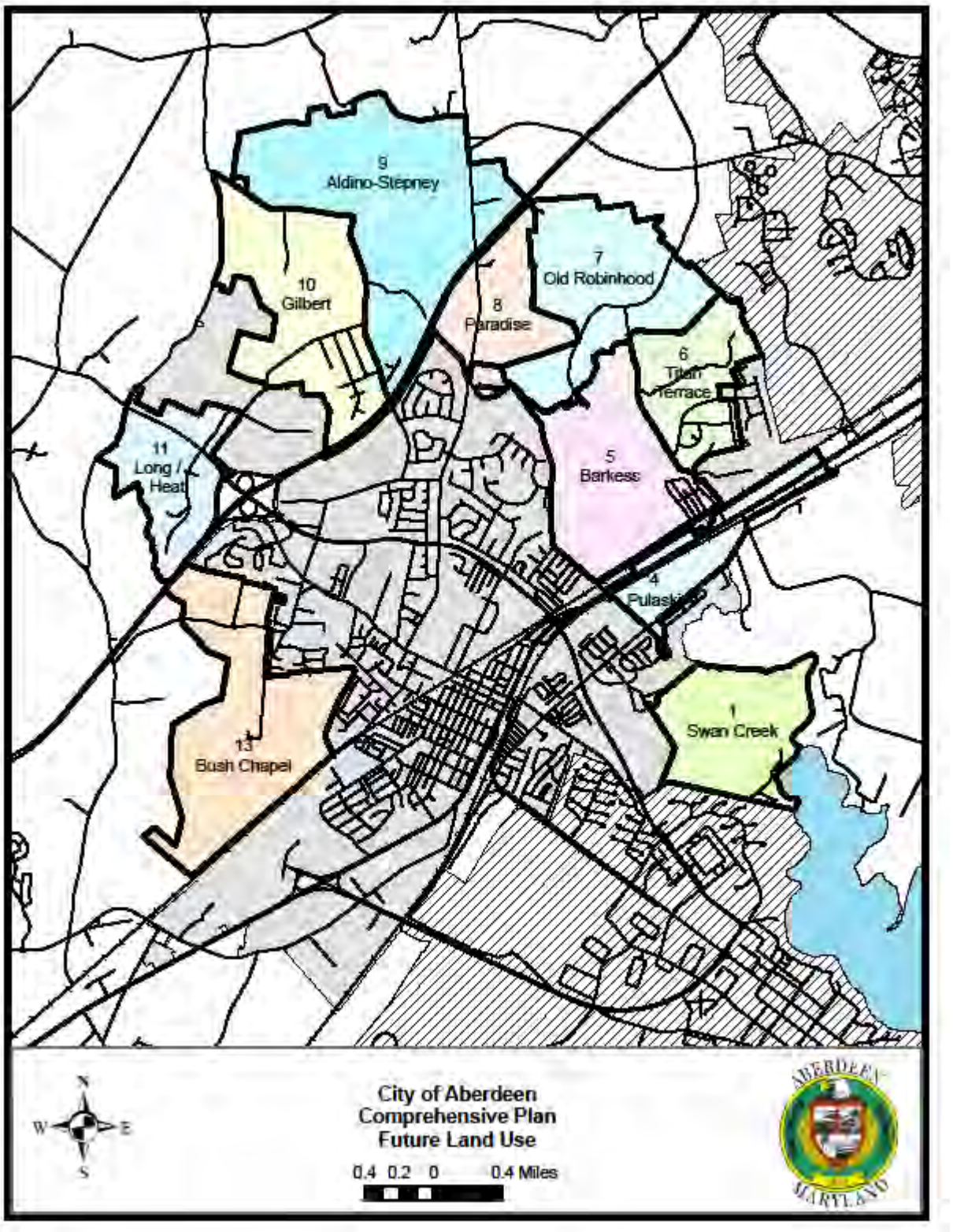
b) The City Council may reject the petition for any reason or for no reason. The City Council is not required to make any finding of fact in the event it rejects the petition.

12) Other Applicable Law

This procedure is in addition to any other provisions of the City Charter and Code of the City of Aberdeen and of the Annotated Code of Maryland that govern annexation.

The Future Land Use Map provided on page 3-61 provides the areas considered for future growth. For further information on the individual Planning Areas refer to each Planning Area description.

In accordance with House Bill 1141, a copy of the Annexation Plan prepared by the Aberdeen Department of Planning and Community Development is provided to Harford County and the Maryland Department of Planning for review and comment prior to the required public hearing on the matter.

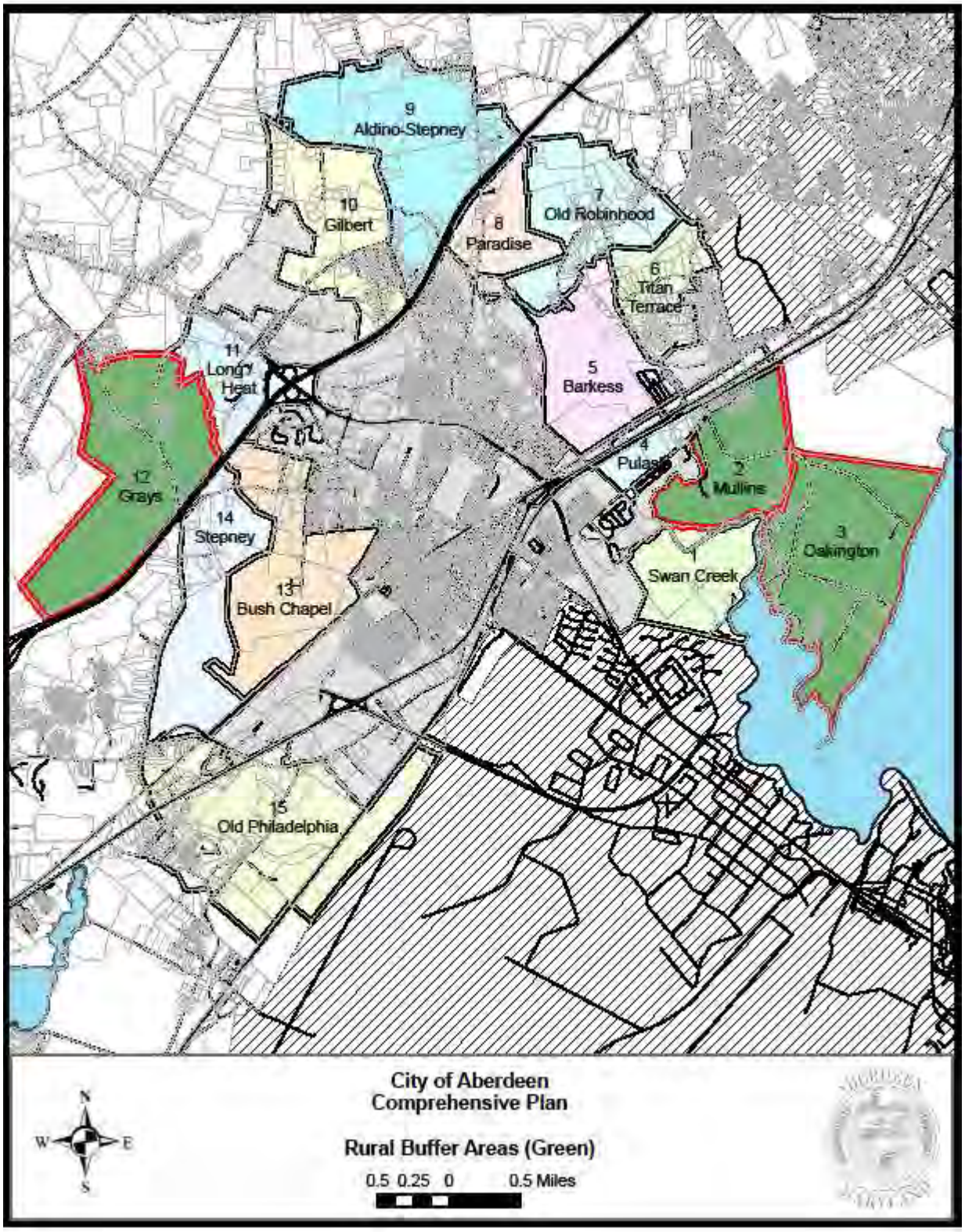

9
Aldino-Stepney
10
Gilbert
7
Old Robinhood
8
Paradise
6
Tilen Terrace
11
Long / Heat
5
Barkess
4
Pulaski
1
Swan Creek
13
Bush Chapel
N
W
E
S
City of Aberdeen
Comprehensive Plan
Future Land Use
0.4 0.2 0 0.4 Miles
ABERDEEN
MARYLAND

Rural Buffers

The City considered rural buffers in areas that are planned for future growth. Planning Areas 2 Mullins, 3 Oakington, and 12 Grays were chosen to protect the natural features and sensitive areas of Swan Creek, Gashey's Creek, and Cranberry Run. Several of the Planning Areas are proposed for future connection to the Lower Susquehanna Heritage Greenway. The majority of Planning Areas 2 Mullins and 3 Oakington are County or State-owned. We recognize that by preserving these Planning Areas as rural buffers that we are defining the development edge of the City. Please refer to the Rural Buffer Areas Map on page 3-63.

Burdens on Municipal Services and Infrastructure Beyond Future Growth Areas

The City is not responsible for any other major infrastructure outside of its boundaries. All annexations and subsequent developments will fund associated infrastructure improvements.


9
Aldino-Stepney
10
Gilbert
8
Paradise
7
Old Robinhood
6
Titan
Terrace
11
Long
Heat
5
Barkess
4
Pulaski
2
Mullins
12
Grays
14
Stepney
13
Bush Chapel
Swan Creek
3
Oakington
15
Old Philadelphia
N
W
E
S
City of Aberdeen
Comprehensive Plan
Rural Buffer Areas (Green)
0.5 0.25 0
0.5 Miles

Chapter 4 - TRANSPORTATION ELEMENT

Introduction

This Transportation Plan was prepared in 2009 by Kittelson & Associates, Inc. as part of the overall update of Aberdeen's Comprehensive Plan. It is intended to meet the requirements for transportation elements under Article 66B of the Annotated Code of Maryland, which requires the Plan to "Propose the most appropriate and desirable patterns for the general location, character and extent of channels, routes, and terminals for transportation facilities and for the circulation of persons and goods on a schedule that extends as far into the future as is reasonable."

The Plan identifies transportation goals, objectives, and projects to support the City's plans for future changes in land use as well as for infill and re-development of existing areas. The transportation goals and objectives are provided in Chapter 2 – Land Use Element.

Existing Conditions and Opportunities

Highways/Roads

The roadway system provides the basic framework linking all of Aberdeen's transportation modes. The Maryland State Highway Administration (SHA) manages regional routes, while local access and circulation are the responsibility of the City of Aberdeen. Harford County has jurisdiction over non-State facilities in the planning areas outside of the City limits.

The following discussion organizes the road system in highest to lowest hierarchical order. It begins with a functional description within the road network, and then presents the highway in the context of adjacent land use and physical characteristics. Please refer to Map 1 found on Page 4-4. Table 4-1 identifies the major roadway facilities in the City of Aberdeen and characterizes their attributes.

Table 4-1: Major Roadway Facilities

Roadway	Route Number	Functional Classification	Number of Lanes	Sidewalks	Bicycle Lanes	On-Street Parking
Aberdeen Thruway	MD 22	Freeway Expressway	4 Lanes	Partial	No	Partial
Philadelphia Boulevard	US 40	Other Principal Arterial	4 Lanes	Partial	Yes	Partial
Paradise Road	MD 462	Minor Arterial	2 Lanes	Partial	Yes	No
Short Lane	MD 715	Minor Arterial	4 Lanes	No	No	No
W Bel Air Avenue	MD 132	Minor Arterial	2 Lanes	Partial	No	Partial
Post Road	MD 132B	Collector	2 Lanes	Partial	No	Yes
Beards Hill Road	MD 132A	Collector	4 Lanes	Partial	No	Partial
Maxa Road	-	Collector	2 Lanes	No	No	No

Interstate 95 (I-95)

I-95 passes through the northern quadrant of the City and has three lanes in each direction in a 300-foot depressed right-of-way. It currently carries over 100,000 vehicles per day in both directions in this segment. The interchange at MD 22 provides primary access to Aberdeen from I-95. I-95 is managed by the Maryland Transportation Authority (MdTA).[1] While I-95 is a vital link to the City, it presents a challenging barrier between the City's core, Aberdeen Proving Ground (APG), and growth areas to the west. Three links are key to bridging I-95: Bush Chapel Road, MD 22, and Maxa Road.

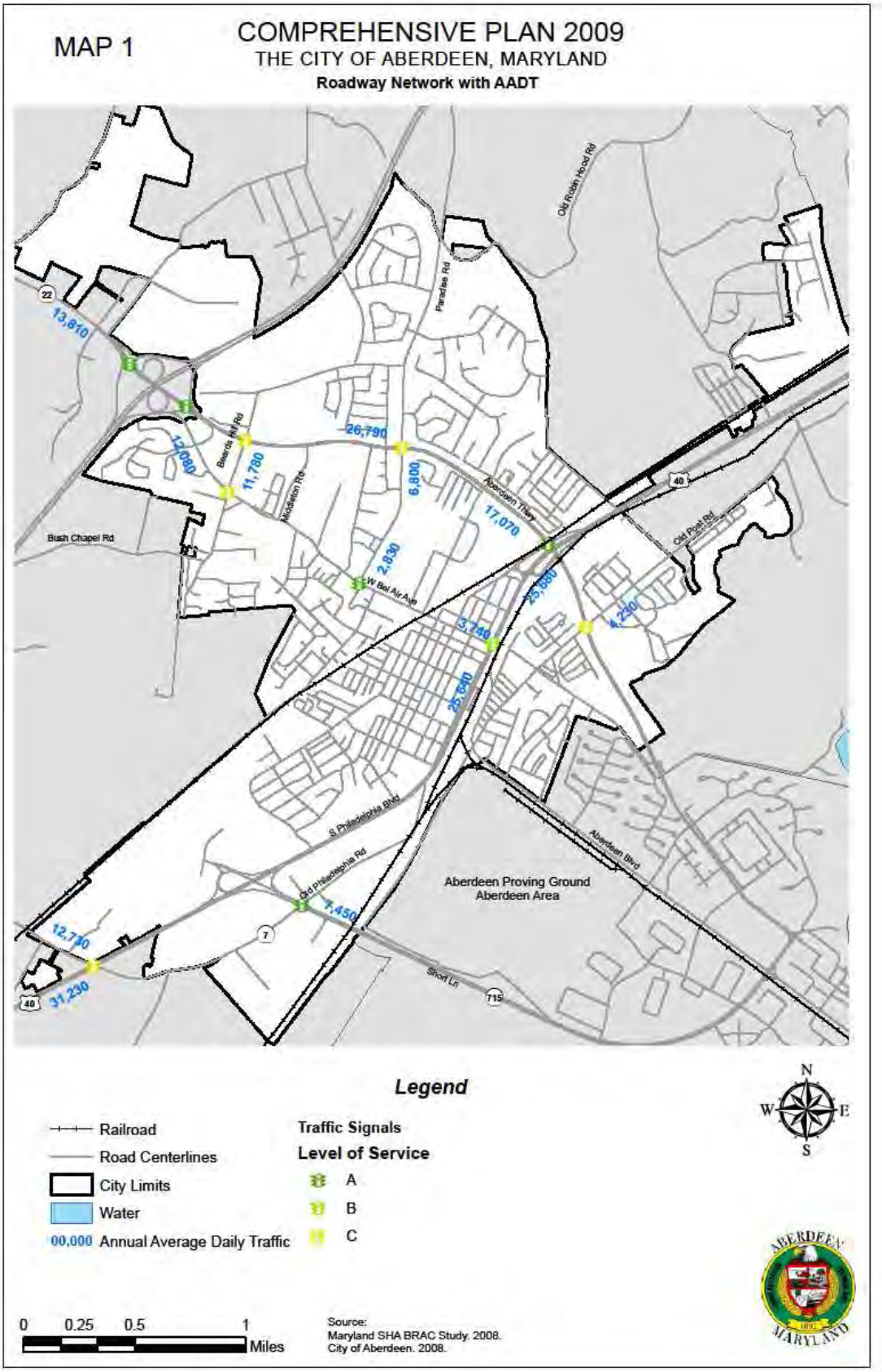
Aberdeen Thruway (MD 22)

Aberdeen Thruway serves as the primary connection between I-95, Ripken Stadium and attractions within the City, including downtown Aberdeen and APG. The roadway is currently classified as a Freeway/Expressway, which limits access and prioritizes through movements. MD 22 has grade-separated interchanges at I-95 and US 40. The route provides access to large-commercial centers and residential neighborhoods from signal-controlled cross streets. A cluster of housing fronts the road to the north and south around the Paradise Road intersection.

Philadelphia Boulevard (US 40)

Philadelphia Boulevard is classified as an Other Principal Arterial and provides a regional connection between Aberdeen and Havre de Grace to the northeast, and Belcamp/Edgewood to the southwest. The roadway has two travel lanes in each direction, and is separated by a center median at some points. Philadelphia Boulevard runs adjacent to downtown and separates it from the Amtrak/MARC rail station. The road is designed as an open section with shoulders as it approaches strip commercial development on either side of downtown Aberdeen.

[1] MDTA is currently conducting a study of I-95 from north of MD 43 to north of MD 22.


MAP 1
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Roadway Network with AADT
Old Robin Hood Rd
Paradise Rd
22
13,810
Beards Hill Rd
12,080
11,780
26,790
6,800
Middleton Rd
Aberdeen Thwy
17,070
40
Old Post Rd
Bush Chapel Rd
2,830
W Bel Air Ave
25,680
4,230
3,740
25,680
S Philadelphia Blvd
Aberdeen Blvd
Aberdeen Proving Ground
Aberdeen Area
Old Philadelphia Rd
7,450
7
12,730
40
31,230
Short Ln
715
Legend
Railroad
Road Centerlines
City Limits
Water
00,000 Annual Average Daily Traffic
Traffic Signals
Level of Service
A
B
C
N
W
E
S
0
0.25
0.5
1
Miles
Source:
Maryland SHA BRAC Study. 2008.
City of Aberdeen. 2008.
ABERDEEN
MARYLAND

The approaches introduce suburban and urban features including 5-foot sidewalks, a service road, on-street parking, commercial driveways, and signage designating it as a bicycle route. Block spacing through the urban section is approximately 475 feet, with signals located over a mile apart.

Paradise Road (MD 462)

Paradise Road is a Minor Arterial that provides access to Aberdeen from the north across MD 22 and MD 132. Direct access is available to Paradise Road from individual properties along the roadway. The roadway also offers access across MD 22 to Aberdeen High School. The adjacent land uses are primarily residential, with a significant area between MD 22 and MD 132 dedicated to use by the high school.

West Bel Air Avenue (MD 132)

West Bel Air Avenue is classified as a Minor Arterial and provides an east-west connection through the City, offering relief to the Aberdeen Thruway. The roadway serves both commercial and residential land use, producing a rapid transition in character and traffic accommodation. Toward the northwest portion of the City it acts as a suburban-style roadway, accommodating shopping plaza access with limited bicycle and pedestrian facilities and wide block spacing (about 650 feet on average). W Bel Air Avenue also provides access to downtown between the CSX rail corridor and the intersection with Philadelphia Boulevard, balancing through traffic demand and town center multimodal access. Approaching downtown, the road passes through a traditional neighborhood of historic homes and more walkable streets. The more urban setting found within the downtown core includes on-street parking, sidewalks, marked crosswalks, and relatively close block spacing (about 450 feet on average).

Short Lane (MD 715)

Short Lane is classified as a Minor Arterial and provides primary access to the visitors and employees of APG from South Philadelphia Boulevard. It intersects with South Philadelphia Boulevard as a grade-separated interchange and is currently under construction as part of the Aberdeen BRAC improvements. Short Lane is a divided, four-lane facility with limited access and shoulders, with no on-street parking, sidewalks, or marked bicycle accommodation.

Post Road (MD 132 B)

Post Road, classified as a Collector, offers a north-south connection within the City and provides an alternative to Philadelphia Boulevard. It runs on the south side of the Amtrak rail tracks, making it one of the few connector roads in the southern neighborhood and near the APG. The road is designed to accommodate residential uses (on-street parking provided in front of residential properties) and commercial uses; both uses have individual access driveways and on-site parking.

Beards Hill Road (MD 132 A)

Beards Hill Road, also classified as a Collector, operates as a north-south link running north from West Bel Air Avenue across Aberdeen Thruway and serves large format commercial uses concentrated in the City's western portion. The roadway rapidly shifts to a more rural character north of Aberdeen Thruway and to a transitional portion of Bush Chapel Road south of West Bel Air Avenue. Between the two major roads, Beards Hill Road is a five-lane, divided roadway accommodating suburban-style retail centers. There are no sidewalks or bike lanes on the west side of Beards Hill Road, and block spacing is about 625 feet on average.

Bush Chapel Road

Bush Chapel Road is classified as a Collector transitioning from a rural lane to one that creates access to the west to land area adjacent to Stepney Road. Between West Bel Air Avenue and Kretlow Drive, the roadway transitions from commercial to residential use. Access to the road is available via individual driveways, including through a new single-family residential section. Along the roadway sidewalks are provided adjacent to the most recent development, but much of the road has no bicycle or pedestrian amenities. Roadway widening, sidewalk additions and disabled access improvements were recently completed to make the road compatible with re-development near West Bel Air Avenue and Kretlow Drive. While some areas have been widened and improved, there are narrow portions (about 24 feet) without a curb and gutter. Block spacing is staggered and is about 145 feet on average.

Local Roads

Local roads in the City of Aberdeen take several forms:

- In and around downtown and to the east of Amtrak, they occur as an urban grid in smaller blocks. These areas are generally well connected on all sides except where there are rail barriers. Examples of local roads include Norman Avenue and Smith Avenue.

- A second form occurs in the City's more recent residential neighborhoods, where internal streets are well connected but rely on only one or two access points typically oriented to one side of the neighborhood.

- A third type is the single road with direct connection to the main line. This occurs in parts of the City that are still rural.

Opportunities

The City can begin to change a course that has focused on internally oriented site circulation and access. Two major opportunities are the growth areas beyond the City limits that will occur through annexations. These areas offer an opportunity to plan for connections that will link to existing City streets. Future annexation areas should be envisioned with a transportation framework that will make the most of developer investment in infrastructure. New development and re-development areas present opportunities for paths and street connections that will link to the existing system.

A more robust network of functioning collectors that are sized appropriately for alternative transportation modes will disperse the traffic and, in doing so, preserve vehicle capacity on existing facilities. This type of approach will permit the City to enjoy the benefits of growth with fewer impacts on the existing infrastructure and quality of life. It is important to make the best use of roads designed to handle through and truck traffic, such as MD 715, MD 22 and US 40, and to reduce impacts to scenic rural roads and neighborhood streets. Maintaining routes for through traffic, as well as for comfortable and safe links between neighborhoods, employment districts, and civic uses, with accommodations for cyclists, pedestrians, and transit riders, balance the system for all users.

Traffic Conditions

Traffic operations were analyzed for all signalized intersections in Aberdeen by SHA as part of the BRAC study.[2] The analysis is based on manual turning movement counts. The method used was the Critical Lane Volume analysis, which is a high planning-level analysis. Table 4-2 summarizes the existing Levels of Service (LOS)[3] at the major intersections in Aberdeen. As shown in Table 4-2, all of the major intersections operate at LOS C or better during the peak hours of the day.

Opportunities

While there are currently no significant congestion issues in Aberdeen, opportunities exist to manage travel demand by providing viable alternative modes of travel. Additionally, roadway extensions can be made within the existing grid network to reduce point loading and balance network demand.

[2] URS Corporation on behalf of Maryland State Highway Administration. *BRAC Transportation Study, Aberdeen Proving Ground, Harford County*: Technical Memorandum No. 2A: Future Conditions (Year 2015 and 2030) Analyses Final Report. 2008.

[3] Level of Service or LOS is a measure used to indicate the quality of an intersection or roadway performance for the user, typically and in this case, the motorist. LOS designations range from A to F, with grade A typically providing the least travel delay. Signalized intersection LOS should typically be rated C or D to be sure the capacity available is being efficiently managed by the traffic signals. LOS of E & F are considered failing and suggest the need to change signal timing, or add capacity at the location or at an alternative location nearby.

Table 4-2: Existing Conditions at Major Intersections

Intersection	Control	AM		PM	
		LOS	V/C	LOS	V/C
W Bel Air Ave / Beards Hill Rd	Signal	A	0.47	C	0.77
W Bel Air Ave / Paradise Rd	Signal	A	0.48	A	0.46
W Bel Air Ave / S Philadelphia Blvd	Signal	B	0.64	B	0.67
Aberdeen Thruway / I-95 SB Off Ramp	Signal	A	0.29	A	0.32
Aberdeen Thruway / I-95 NB Off Ramp	Signal	A	0.32	A	0.48
Aberdeen Thruway / Beards Hill Rd	Signal	A	0.56	C	0.72
Aberdeen Thruway / Paradise Rd	Signal	C	0.80	C	0.74
Aberdeen Thruway / Philadelphia Blvd On/Off Ramps	Signal	A	0.55	A	0.57
Philadelphia Blvd / Aberdeen Thruway On/Off Ramps	Signal	A	0.48	A	0.51
Aberdeen Thruway / N Post Rd	Signal	A	0.53	C	0.75
Short Ln. / Philadelphia Blvd EB On Ramp	Signal	A	0.18	A	0.39
Short Ln. / Philadelphia Blvd WB On/Off Ramp	Signal	A	0.20	A	0.38
Short Ln. / Old Philadelphia Rd	Signal	A	0.51	A	0.54

Parking

Three municipal parking lots in downtown Aberdeen provide 237 free spaces. In addition, there is free on-street parking in the City. The parking lots are located at Park and Walnut, Festival Park, and Rogers Street across from the Main Firehouse. There is minimal enforcement of the two-hour limit for on-street parking.

Opportunities: The demand for parking in Aberdeen has increased with the City's growth and enforcement of the parking limits will probably become necessary. As downtown activity increases, on-street parking spaces need managing to ensure availability of short-term parking for customers. Managed parking typically leads to parking fees. The fees result when costs are incurred by the local jurisdiction for enforcement of the parking regulations. As demand at the nearby rail station increases, there may also be commuter encroachment into on-street spaces in downtown.

The City should assure that the Development Code permits shared parking downtown and in future mixed-use areas and zones to accommodate the demands for both short-term and long-term parking that will arise. The City should consider a cap on the amount of parking to be provided in the vicinity of the future transit center. If the parcels around the station are mixed-use developments that promote walkability, parking caps can lead to increased pedestrian and bus access to the rail station.

Transit Services and Facilities

Rail Station and Service

The Aberdeen Rail Station, located downtown at the intersection of US Route 40 and Bel Air Avenue, is served by Amtrak and the MARC system. Although not designed as such, the station parking lot serves as a transit hub for local and regional buses. The station is situated along Amtrak's Northeast Corridor, which links Washington, D.C., to Boston. On weekdays and weekends, five Amtrak trains travel north from Aberdeen toward Wilmington and Philadelphia, and five trains head south toward Baltimore and Washington, D.C. There are five southbound MARC trains and six northbound MARC trains each weekday. No weekend MARC service is provided. The Maryland Transit Administration (MTA) operates the MARC system and provides free parking for commuters. There are 268 designated parking spaces at the station and within close proximity to the station. In 2007, an average of 214 people boarded MARC trains in Aberdeen destined to points south. Transit demand is increasing and recent MTA counts have

revealed 275 cars parking at the station. MTA will analyze data on the origins of existing commuters to better understand future commuter access and parking needs for this station.[4] Existing transit service is illustrated in Map 2 located on Pg. 4-12. The MTA Real Estate Department has obtained an appraisal for the Hinder Used Car lot and it is being reviewed with an offer expected in October 2010. This property will be part of the parking expansion project.

Opportunities: More frequent southbound MARC service will attract additional riders, but the present limitation on parking at the Aberdeen station may prevent new commuters from availing themselves of MARC service from Aberdeen. Northbound MARC service from Baltimore to Aberdeen is anticipated to support BRAC expansion at Aberdeen. The APG Garrison is completing plans to provide a shuttle from the Aberdeen Train Station to transport employees on the installation. The shuttle will be based on the demand. Secure bicycle parking and safe bicycle access to the station from nearby neighborhoods should be available for those able to use this more affordable, healthy, and environmentally responsible alternative to driving.

APG Road is adjacent to the MARC station and is owned by APG. The MTA proposes to expand commuter parking by providing additional spaces along APG Road and on a parcel north of the station. This near-term improvement is dependent upon successful negotiations with APG officials. This effort will provide up to 180 additional parking spaces. The MTA's free-parking policy gives an advantage to those who drive rather than walk and those riding transit to the station.

Currently, the station functions mainly as a boarding location for Aberdeen-area commuters headed south on the MARC train. Amtrak passengers traveling in both directions also board at the station. The influx of jobs associated with the BRAC expansion at APG introduces the potential for the station to become a more significant rail destination. There is considerable interest in the establishment of a multimodal transit center in Aberdeen, and MDOT has funded a feasibility study to examine the economic potential for it.

Harford County, the MTA, and the City have completed an additional study examining options for a multimodal transit center. The most desirable scenario examined re-development of the existing rail station area into a well-functioning, multimodal station. Since the existing rail station is situated within the designated revitalization district in downtown Aberdeen, alternative future uses for the station site were identified in the study.

[4] There is also an historic CSX Train station located at the crossing of Bel Air Avenue and the CSX rail line west of downtown. The CSX freight train does not stop in Aberdeen. There is an at-grade rail crossing at Bel Air Avenue. The station structure has been vacant for some time and is deteriorated.

Bus Services

Aberdeen is served by a local bus circulator, in addition to fixed bus routes throughout the population centers of Harford County, and a commuter bus route. Harford County Transit LINK (http://www.harfordcountymd.gov/services/transportation) operates the local circulator known as the Doodlebug and the fixed bus routes connecting the major population centers and destinations within the County. The commuter bus service to Baltimore is provided by MTA. Transfers between the different bus lines and rail can be made at the MARC Rail Station in Aberdeen.

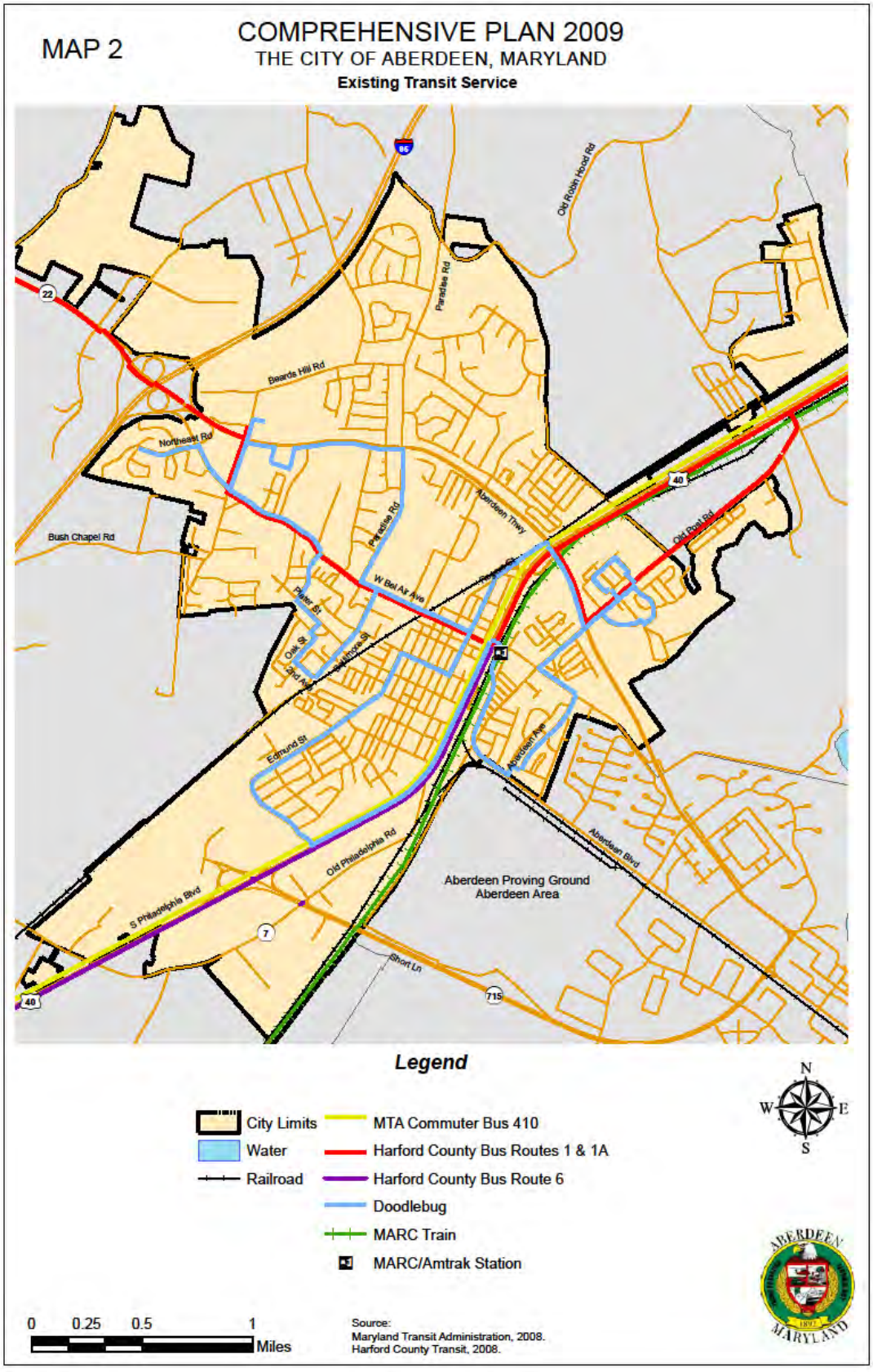
The Doodlebug (Route #4) generally operates from 8:30 a.m. to 3:30 p.m. and serves various locations within Aberdeen. The most recent data indicate that the Klein's Shop Rite Store and Wage Connection on Beards Hill Road are the busiest of the 20 designated Doodlebug stops. An average of 56 people travel on the Doodlebug each day.

Harford Transit LINK bus routes 1, 1A, and 6 provide connecting transit service to Aberdeen on weekdays (excluding holidays) from 6 a.m. to 6 p.m. Routes 1 and 1A operate as continual fixed routes going in opposite directions linking Aberdeen with Bel Air and Havre de Grace. Major destinations on the route include Harford Memorial Hospital, Harford Community College, Harford Mall, and the MARC Rail Station in Aberdeen. Traveling the route from end to end takes approximately one hour depending on the time of day due to traffic conditions. LINK Route 1 has the heaviest use of all LINK services with an average daily ridership of 265 trips. The MARC Rail Station in Aberdeen is the busiest connection point between routes.

LINK Route 6 operates on weekdays between Aberdeen, Perryman, and Edgewood. This route serves a number of destinations including the Riverside Business Park, Rite Aid Distribution Center, Wal-Mart, and the MARC Rail Station in Aberdeen. Route 6 has an average daily ridership of 220. The MARC Rail Station in Aberdeen is the busiest stop on the Route 6 bus line.

The MTA's #420 Commuter Bus Line provides five trips each weekday starting in Havre de Grace, with stops in Aberdeen and Edgewood, before continuing into downtown Baltimore. On an average day, 22 people board the #420 at the MARC Rail Station in Aberdeen. The MTA reports that ridership on the overall line grew by 7% between 2007 and 2008. There are three other commuter bus stops along US 40 in the Aberdeen area that are designated with an MTA bus stop sign. The links below provide information on MTA and LINK bus service to and from Aberdeen.

MTA Commuter Service – http://mta.maryland.gov/services/commuterbus/schedules SystemMaps/index.cfm



2009 Map may not reflect the current transit services; refer to website on pg 4-11

Opportunities: Transit has the potential to provide a commuting alternative for those heading to APG and its immediate environs.

Together, both rail and bus services could help meet the needs of commuters and reduce the number of vehicles traveling through Aberdeen. Establishing a commuter parking lot convenient to I-95 with shuttle service to APG is to be considered. This could involve lease agreements with private property owners. There is no shuttle service from the existing park-and-ride lot on Technology Drive, and the lot is underutilized. Potential locations for a larger and more prominent park-and-ride facility are the City-owned Ripken Stadium lot, or nearby shopping centers where peak demand is complimentary to daytime use by APG staff. The MTA and Harford County Transit Services (HCTS) are both interested in assessing the viability of direct transit services to APG. The APG Garrison is completing plans to provide a shuttle from the Aberdeen Train Station to transport employees to the installation. The shuttle will be based on the demand. As part of its BRAC initiatives, the MTA is also looking into the feasibility of providing additional commuter bus services. Potential future services to APG could originate in Baltimore City, Baltimore or Cecil counties, Southern Pennsylvania, or New Castle County, Delaware. A transfer connection to the APG shuttle is important.

The MTA's recently completed MARC Growth and Investment Study identified short- and long-term improvements for commuter rail services throughout the state. In the short term, the MTA is exploring the viability of putting morning deadhead trains to Perryville in service to Aberdeen. MTA may also try to coordinate with Amtrak to take advantage of available capacity on its existing trains. MTA's long-term strategies include increasing mid-day and weekend service, and station and yard improvements. In addition, MTA is seeking a location for a new rail yard in the corridor.

Pedestrian Facilities

The term "pedestrian facilities" includes sidewalks, handicapped accessible ramps (ADA ramps), off-road paths, crosswalks, and pedestrian signals, all of which are components of a complete pedestrian network. The surrounding environment and the exposure to auto traffic, even where facilities are present, contribute to perceptions of safety and security experienced by pedestrians. In Aberdeen, as in other older cities, the conditions of pedestrian facilities differ from one area to another. Accessible facilities exist in some areas of Aberdeen, and in other areas pavement may be deteriorated and crosswalks unavailable. As areas in the City develop or redevelop, the pedestrian activity and circulation patterns change. These factors give rise to regular needs assessments for pedestrian facilities. In some of the City's older residential areas partial sidewalks exist along one side of the street. Map 3 located on Pg. 4-17 presents the 2008 inventory of sidewalks completed by City staff. There are inconsistencies with sidewalks; for example, Plater and Custis have sidewalks but nearby Washington and Bonnett do not. For minor residential streets with low traffic volumes, it may be acceptable to not have a sidewalk. The gaps that exist in the pedestrian network on busier roads are to be filled in as maintenance is conducted or utility work undertaken. All pedestrian facilities are to be made fully accessible. This can mean adding intersection or driveway ramps, and relocating utility poles or other obstacles that interfere with the path of travel.

The need to designate safe pedestrian crossings will increase as traffic volumes on the roadway network and overall growth in Aberdeen increase. Already such facilities are needed along US 40. The absence of pedestrian facilities will deter some people from walking at all and will cause others to walk in the street or to cross at locations that are risky. The ability of children to walk to school is affected by the presence of adequate pedestrian facilities.[5]

According to current SHA policy, the recent roadway improvements on State routes have incorporated sidewalks, accessible ramps, and pedestrian crossings. Crosswalks have been installed along some sections of Aberdeen Thruway (MD 22) at I-95, along portions of Bel Air Avenue (MD 132) and along Paradise Road (MD 462). However, pedestrian facilities are notably absent along most portions of Philadelphia Boulevard (US 40) outside of the City center, and south of the City where major businesses are located.[6] Sidewalks are not continuous,

[5] In spring 2008, the City submitted an application for a Safe Routes to School grant to improve pedestrian facilities in the vicinity of the George D. Lisby School. The grant has been awarded.
[6] SHA Accessibility Guidelines include a range of factors for consideration in determining the need for a crosswalk. In particular, need is assessed whenever there are a substantial number of pedestrian crossings per day =>150.

connections to the existing bus stops are absent, and designated crossings of US 40 are not provided. The frequent parking lot and driveway entrances along US 40 also create potential conflicts between pedestrians and motorists. Walking is considered a viable mode of transportation and an alternative to driving that promotes health and air quality. Historically, local jurisdictions have provided trails or off-road paths for recreation, such as those in Aberdeen's Festival Park. Off-road paths are typically separated from the roadway with a buffer and, if wide enough, they can be used by pedestrians, cyclists, and in-line skaters. In Aberdeen there are off-road paths such as these at local schools.

Opportunities: Perceptions of safety and security are also part of the pedestrian experience and help to determine the location and scale of facilities. When pedestrian facilities do not exist they are to be provided consistent with the recommended road typology. Sidewalk gaps and missing segments are to be provided as development or re-development occurs along a roadway, when roads are re-paved, or as part of a specific pedestrian facility improvement program. When utility work is undertaken, the City should assure that all opportunities to improve pedestrian facilities are taken. Utility poles should be moved out of pedestrian walkways if possible and no additional poles or equipment permitted.

Creating walkable places involves prioritizing the pedestrian experience in the earliest stages of the development process as roads are laid out, buildings located, and users identified. Well-designed, accessible pedestrian facilities and environments should be required in all new development areas through the Aberdeen Subdivision Regulations. Priority connections to bus stops, schools, parks, public facilities and retail areas, even those beyond the site, should be identified and provided. The City will explore State and Federal grant programs that provide funds for sidewalk retrofits in older areas.

Bicycling Facilities

The term "bicycle facility" typically refers to improvements made to accommodate or encourage bicycling. On-road improvements can include designated bike lanes, shared roadways, and bicycle route signage. Typically these improvements will be supported by shared-use paths and bicycle parking in destination areas. Designating particular routes helps guide cyclists to roads that are more suitable for their use and away from other roads that may be less accommodating. Markings also inform drivers to expect cyclists in the travelway and can help to manage conflict areas.

Currently, the only formal bicycle routes in Aberdeen are on State-maintained roads. Philadelphia Boulevard (US 40) in Aberdeen is designated by the SHA on the statewide bicycle map (Please refer to Map 4 located on Pg. 4-18). Bicycle route signs are posted and paved shoulders are marked with bike symbols. However, the downtown area's overly wide cross-section and intermittent driveways is confusing and potentially unsafe. The Transportation Element of the City's 2002 Comprehensive Plan identified the following as primary bicycle routes:

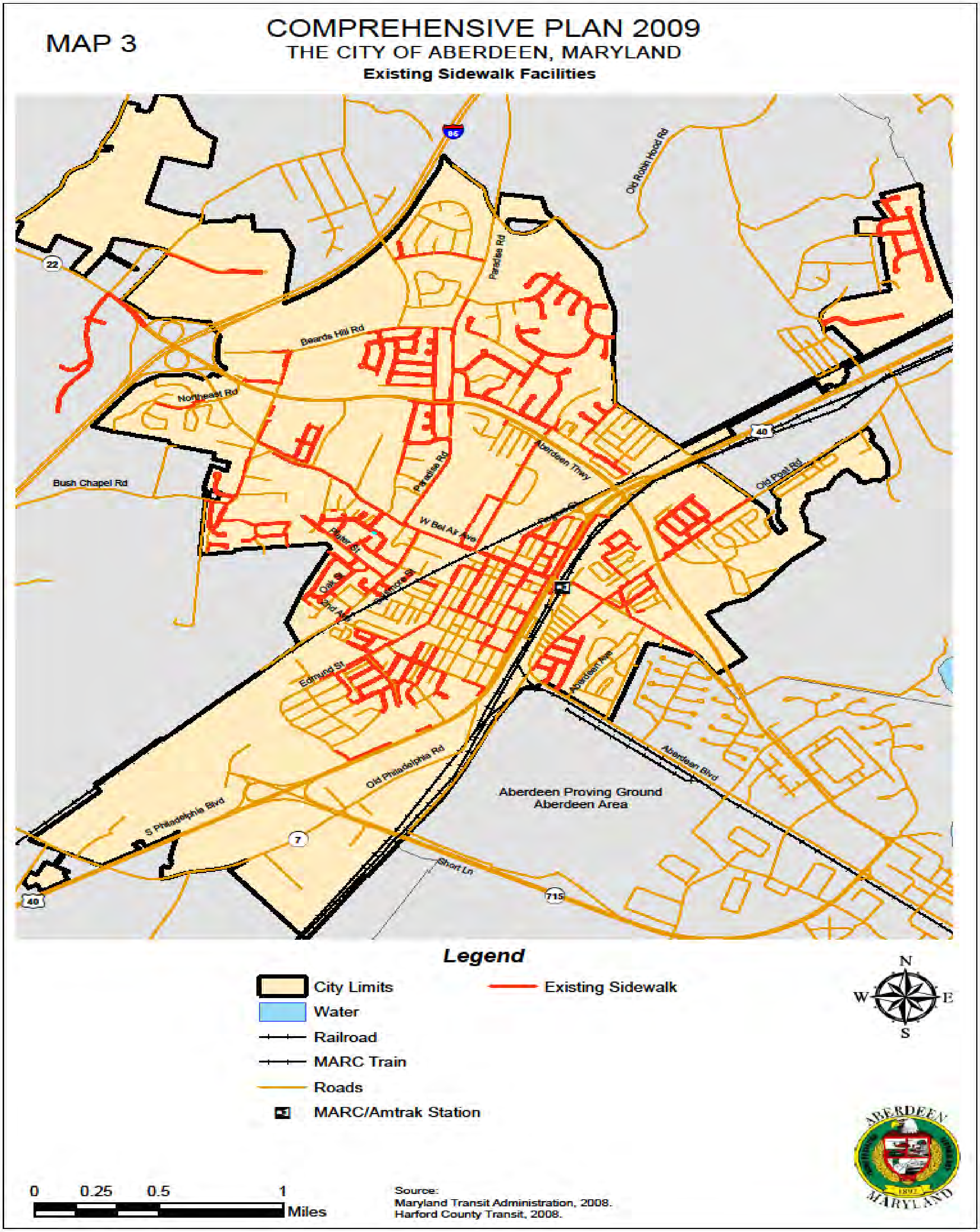
- Aberdeen Thruway (MD 22)
- West Bel Air Avenue (MD 132) from US 40 to Northeast Road
- Paradise Road (MD 462) from MD 22 to Robinhood Road

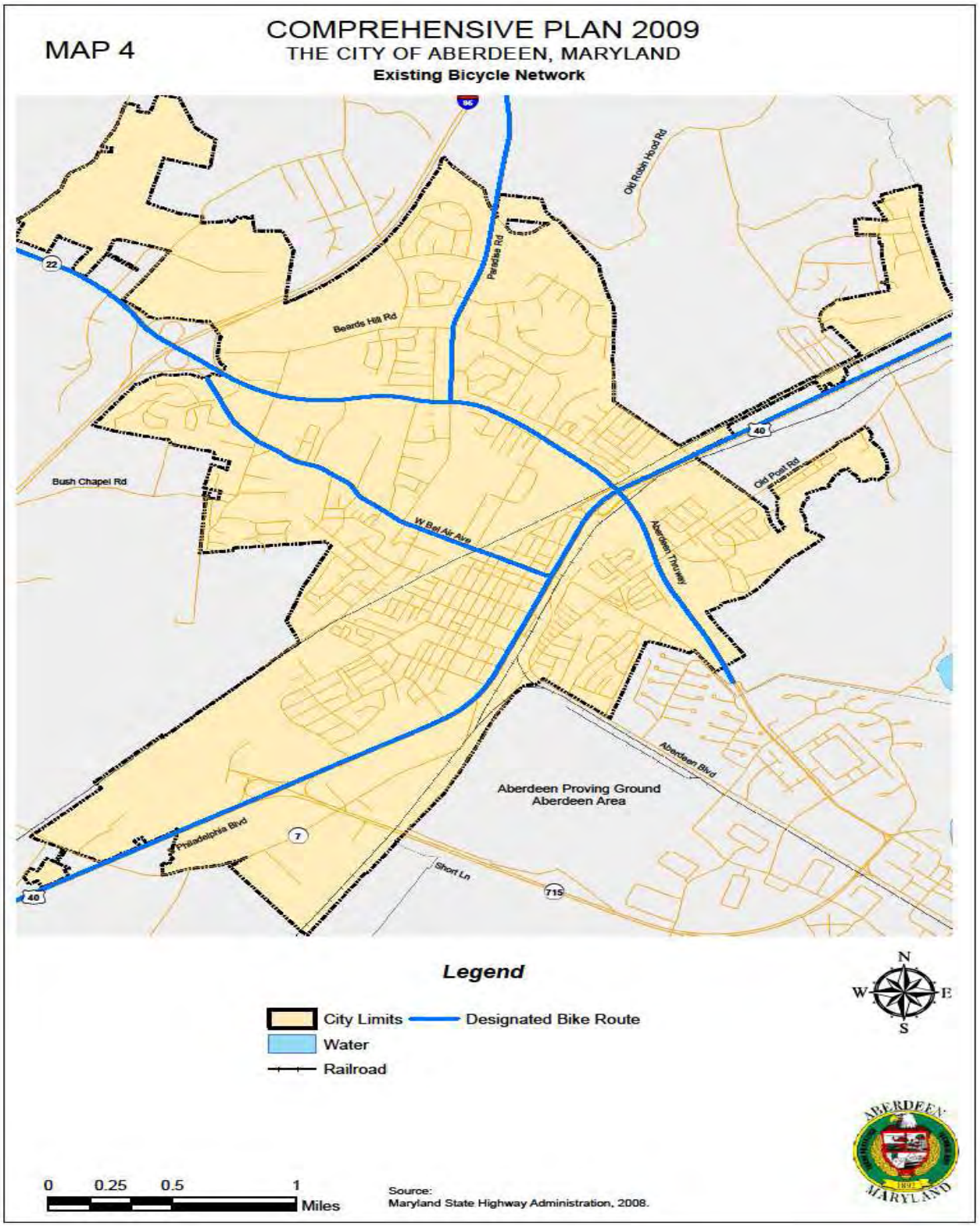
These bicycle routes have minimal markings and designation. The inventory conducted as part of the Maryland Department of Transportation's (MDOT) 2002 Bicycle and Pedestrian Plan identified needs for bicycle improvements along segments of US 40, MD 22, MD 132,MD 462, MD 7, and MD 715.

Opportunities: Promotion of bicycling supports City objectives for transportation, recreation, quality of life, and the environment. Interest is increasing in bicycling for the purposes of transportation, particularly where transit is present, and can be a major attractor for recreation and community building. Its accommodation is to be considered from all of these perspectives. A complete streets approach will include provisions for bicycling as routine accommodation rather than as an exception.

An assessment of existing arterial roads may reveal enough width to designate bikeways within the existing pavement. Simply adding striping can serve to re-allocate the space between motorists and cyclists. Where adequate pavement width does not exist and bicycle accommodation has been recommended, it may be necessary to pave shoulders, consider the use of "sharrows" (shared-use markings) or assess the potential for off-road bikeways.[7]

[7] The needs of cyclists differ according to age and skill level, and a range of users should be considered in planning. Low-volume streets and designated bikeways are best for most cyclists. The striping and marking of lanes or shoulders as bikeways indicates to the motorist and the bicyclist the portion of the roadway intended for use by bicycles. Striping separates cyclists from motorists and helps to reduce confusion about where cyclists should operate. More experienced cyclists are comfortable riding with traffic but still need sufficient operating space. Wider lanes can accommodate these cyclists. Children most often ride on residential streets to neighborhood destinations, schools, and parks. Local streets with low traffic volumes and speeds do not require striping, but may warrant signage and be candidates for traffic calming that can also increase bicycle use. Bicycle route signs provide cyclists with information on designated routing. "Share the Road" signs help to increase motorist awareness of the presence of cyclists.


MAP 3
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Existing Sidewalk Facilities
Beards Hill Rd
Northeast Rd
Bush Chapel Rd
Paradise Rd
Old Robin Hood Rd
Aberdeen Thwy
W Bel Air Ave
Old Post Rd
Edmund St
Old Philadelphia Rd
S Philadelphia Blvd
Aberdeen Blvd
Aberdeen Ave
Short Ln
Aberdeen Proving Ground
Aberdeen Area
Legend
City Limits
Water
Railroad
MARC Train
Roads
MARC/Amtrak Station
Existing Sidewalk
N
S
E
W
0
0.25
0.5
1
Miles
Source:
Maryland Transit Administration, 2008.
Harford County Transit, 2008.


MAP 4
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Existing Bicycle Network
Old Robin Hood Rd
Paradise Rd
Beards Hill Rd
Bush Chapel Rd
W Bel Air Ave
Old Post Rd
Aberdeen Thruway
Aberdeen Blvd
Aberdeen Proving Ground
Aberdeen Area
Philadelphia Blvd
Short Ln
Legend
City Limits
Designated Bike Route
Water
Railroad
N
W
E
S
0 0.25 0.5 1
Miles
Source:
Maryland State Highway Administration, 2008.

Traffic Assessment

Analysis of Existing Traffic

Existing traffic conditions were analyzed using the level-of-service (LOS) procedures stated in the 2000 *Highway Capacity Manual*[8]. LOS is a concept developed to quantify the degree of comfort afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various levels of service from "A" to "F".

As shown in Table 4-2, all of the existing signalized intersections operate at LOS C or better and below a 0.80 volume-to-capacity ratio in both the a.m. and p.m. peak hours. There are no major sources of congestion causing serious traffic concerns in existing conditions. Of all the facilities in Aberdeen, MD 22 experiences the highest traffic volume, though it continues to operate efficiently.

The BRAC Commission undertook a study to analyze the impacts to traffic operations that are anticipated based upon the effects of BRAC on APG, and to develop recommendations for transportation improvements that would allow operation at an acceptable level of service, LOS D or better, in 2015 and 2030. The study incorporated all development that may be expected to occur as a byproduct of BRAC at APG, such as additional employment for spouses and additional retail and development to support the increased population. The following scenarios were analyzed:

- Existing Conditions
- 2030 No-BRAC Conditions
- 2030 With BRAC – with Aberdeen Gate. This is the gate at APG Road that is currently closed to traffic.
- 2030 With BRAC – without Aberdeen Gate. This takes into account the BRAC growth but does not include use of the APG Road gate for traffic.

Table 4-3 illustrates the two-way traffic volumes for the p.m. peak hour under existing conditions and each of the 2030 scenarios. Appendix #1 includes a map that shows the Traffic Analysis Zones (TAZs) that were used in the development of the traffic forecasts.

[8] Transportation Research Board. *Highway Capacity Manual*. 2000.

Table 4-3: PM Peak Hour Traffic Volume Comparison

Roadway	Segment		PM Peak Hour Two-Way Volumes			
	From	To	Existing Conditions	2030 Future Conditions		
				No BRAC	with BRAC	with BRAC (no APG Gate)
MD 22	Paradise Rd	Philadelphia Blvd	2,595	3,605 (1.6%)	4,755 (3.5%)	5,655 (4.9%)
US 40	Bel Air Ave	Aberdeen Thruway	1,940	2,745 (1.7%)	4,090 (4.6%)	4,205 (4.9%)
MD 132	Paradise Rd	Philadelphia Blvd	1,125	1,810 (2.5%)	2,510 (5.1%)	2,105 (3.6%)

(X%) - percent growth per year compared to existing conditions

The traffic growth shown in Table 4-3 is based on population and employment projections conducted as a part of the BRAC study. As a result, these projections are heavily influenced by the growth at APG (over 56% of the expected employment growth in Aberdeen and the surrounding planning areas is projected to occur within APG). Exactly how and when this growth will occur is largely unknown. As shown in Table 4-3, the anticipated two-way p.m. peak hour volumes indicate significant growth between the scenarios. However, that these volumes are traffic demand estimates do not reflect any adjustments for mode split or travel demand management efforts.

Specifically, corridor studies along MD 22 and US 40 would allow the City, Harford County, and SHA to proactively plan for future growth and accommodation of all travel modes and evaluate options for off-site parking and shuttle service as an alternative to road widening. Table 4-4 illustrates the results of the existing conditions, Level of Service (LOS), and volume-to-capacity (v/c) analysis from the BRAC study, assuming existing lane configurations are in place (no improvements).

Table 4-4: 2030 No-BRAC Conditions

Intersection	Control	AM		PM	
		LOS	V/C	LOS	V/C
W Bel Air Ave (MD 132) / Beards Hill Rd (MD 132A)	Signal	F	1.09	F	1.73
W Bel Air Ave (MD 132) / Paradise Rd (MD 462)	Signal	C	0.74	D	0.90
W Bel Air Ave (MD 132)/ S Philadelphia Blvd (US 40)	Signal	C	0.78	D	0.87
Aberdeen Thruway / I-95 SB Off Ramp	Signal	A	0.42	A	0.58
Aberdeen Thruway / I-95 NB Off Ramp	Signal	A	0.32	C	0.76
Aberdeen Thruway (MD 22)/ Beards Hill Rd (MD 132A)	Signal	C	0.79	F	1.02
Aberdeen Thruway (MD 22)/ Paradise Rd (MD 462)	Signal	F	1.04	F	1.04
Aberdeen Thruway (MD 22)/ Philadelphia Blvd On/Off Ramps	Signal	B	0.67	C	0.80
Philadelphia Blvd (US 40) / Aberdeen Thruway On/Off Ramps	Signal	B	0.70	B	0.70
Aberdeen Thruway (MD 22) / N Post Rd	Signal	A	0.55	E	0.92
Short Ln (MD 715) / Philadelphia Blvd EB On Ramp	Signal	A	0.20	A	0.43
Short Ln (MD 715) / Philadelphia Blvd WB On/Off Ramp	Signal	A	0.22	A	0.41
Short Ln (MD 715) / Old Philadelphia Rd	Signal	B	0.70	B	0.69

As shown in Table 4-4, four intersections are projected to operate at LOS E or F during the p.m. peak hour in 2030. The West Bel Air Avenue/Beards Hill Road intersection is also estimated to have a demand far exceeding its capacity. The other three intersections (MD 22/MD 132A, MD 22/MD 462, and MD 22/Post Road) are estimated to operate just beyond capacity. Due to the nature of the planning-level analysis, there is an opportunity to mitigate these intersections with improved signal timing or other techniques that do not involve adding infrastructure.
Table 4-5 illustrates the LOS and V/C results for 2030 with the BRAC scenario.

Table 4-5: 2030 with BRAC Traffic Conditions

Intersection	Control	AM		PM	
		LOS	V/C	LOS	V/C
W Bel Air Ave (MD 132) / Beards Hill Rd (MD 132A)	Signal	F	1.28	F	1.87
W Bel Air Ave (MD 132) / Paradise Rd (MD 462)	Signal	F	1.10	F	1.09
W Bel Air Ave (MD 132)/ S Philadelphia Blvd (US 40)	Signal	F	1.49	F	1.49
Aberdeen Thruway / I-95 SB Off Ramp	Signal	A	0.60	A	0.67
Aberdeen Thruway / I-95 NB Off Ramp	Signal	B	0.64	C	0.94
Aberdeen Thruway (MD 22)/ Beards Hill Rd (MD 132A)	Signal	F	1.15	F	1.38
Aberdeen Thruway (MD 22)/ Paradise Rd (MD 462)	Signal	F	1.72	F	1.42
Aberdeen Thruway (MD 22)/ Philadelphia Blvd On/Off Ramps	Signal	F	1.17	F	1.18
Philadelphia Blvd (US 40) / Aberdeen Thruway On/Off Ramps	Signal	F	1.02	F	1.08
Aberdeen Thruway (MD 22) / N Post Rd	Signal	F	1.21	F	1.64
Short Ln (MD 715) / Philadelphia Blvd EB On Ramp	Signal	A	0.63	F	1.09
Short Ln (MD 715) / Philadelphia Blvd WB On/Off Ramp	Signal	B	0.65	F	1.05
Short Ln (MD 715) / Old Philadelphia Rd	Signal	F	1.94	F	1.69

Table 4-5 indicates that, with the potential growth at APG from BRAC, most of the signalized intersections will operate at LOS F and over capacity during both the a.m. and p.m. peak hours. The corridors that would experience the greatest congestion are MD 22 and US 40, as they serve primary routes to commuters at APG. Capacity improvements and travel demand management programs will be necessary to allow these facilities to operate acceptably. Table 4-6 illustrates the 2030 growth with BRAC and without the Aberdeen Gate being opened to traffic.

Table 4-6: 2030 with BRAC Traffic Conditions (without Aberdeen Gate)

Intersection	Control	AM		PM	
		LOS	V/C	LOS	V/C
W Bel Air Ave (MD 132) / Beards Hill Rd (MD 132A)	Signal	F	1.09	F	1.81
W Bel Air Ave (MD 132) / Paradise Rd (MD 462)	Signal	C	0.80	F	1.04
W Bel Air Ave (MD 132)/ S Philadelphia Blvd (US 40)	Signal	F	1.03	F	1.17
Aberdeen Thruway / I-95 SB Off Ramp	Signal	No Change			
Aberdeen Thruway / I-95 NB Off Ramp	Signal	No Change			
Aberdeen Thruway (MD 22)/ Beards Hill Rd (MD 132A)	Signal	F	1.25	F	1.40
Aberdeen Thruway (MD 22)/ Paradise Rd (MD 462)	Signal	F	1.86	F	1.51
Aberdeen Thruway (MD 22)/ Philadelphia Blvd On/Off Ramps	Signal	F	1.42	F	1.32
Philadelphia Blvd (US 40) / Aberdeen Thruway On/Off Ramps	Signal	E	0.95	F	1.17
Aberdeen Thruway (MD 22) / N Post Rd	Signal	F	1.48	F	1.88
Short Ln (MD 715) / Philadelphia Blvd EB On Ramp	Signal	No Change			
Short Ln (MD 715) / Philadelphia Blvd WB On/Off Ramp	Signal	No Change			
Short Ln (MD 715) / Old Philadelphia Rd	Signal	No Change			

As shown in Table 4-6, traffic operations without the Aberdeen Gate are similar to those with the gate (shown in Table 4-5). While some intersections will experience even greater delay and traffic demand, the challenges remain the same. Increasing capacity and instituting transportation demand programs will be necessary in either scenario.

Transportation Recommendations

Roadway Classification

Purpose - Roadway facilities are classified according to the relative importance of the mobility and access functions they are intended to provide for motorists. More vehicular access to land uses along a roadway generally reduces efficiency and, conversely, more efficiency results when vehicular access is more concentrated to fewer points. Assigning a functional classification is a broad strategy to identify the priority function for the roadway to provide motorists with more efficiency or more direct access to property. A deficiency of the functional classification rating criteria is the assumption that the motor vehicle is the only user of the roadway. The functional classification system is however very useful as a necessary first step to understanding the road network as a framework for transportation in Aberdeen.

Functional classification creates a hierarchy for automobile movements on roadways within a jurisdiction and is best presented on a highway network map (Refer to Map 5 located on Pg. 4-27). The network map allows for a visual assessment of the access to and circulation within each area of the City. With adequate connectivity, traffic flows are evenly disbursed through a network and streets are receiving the types of traffic that they are designed to handle. If adequate connectivity is not provided, automobile traffic is point loaded at certain intersections and on fewer streets, resulting in congestion and/or larger, more complicated intersections and wider streets. Poor connectivity can also encourage out-of-direction travel, which is particularly inconvenient for cyclists and pedestrians. Also, incidents and temporary street closures exacerbate congestion in a network that lacks sufficient connectivity.

Since a roadway functional classification system alone does not address the range of uses for the roadway, a second level of classification is needed to consider the circulation and access needs for efficient transit service, safe and convenient bicycling, and comfortable pedestrian trips. Street typologies are a way to characterize roadways within the context of the adjacent land uses and in consideration of all transportation functions they are intended to serve. An example of a typology is a local street that allows the greatest driveway access also being typed as a neighborhood street that recognizes the priority for children walking from home to a nearby elementary school.

The current classification system and typologies in the Transportation Element of the Plan will be consistent with the street types and right-of-way widths discussed in all of the City's implementation documents, such as the Subdivision Regulations and Site Plan Requirements of the Aberdeen Development Code. Together, the functional classification system and street typology will guide mobility planning and serve as the basis for the City's road design standards. Consistency between the plan and the implementation tools will help the City to establish clear priorities for mobility needs and for the allocation of funds for improvements and maintenance. The functional roadway classifications as defined in Harford County's 2010 Transportation Element Plan are provided below.

Freeway/Expressway - A divided highway, with either full control of access on which all crossroads and railroads are grade separated. All entrance and exit maneuvers are by way of interchange ramps, or partial control of access where a great distance between the intersections is provided and no direct access to abutting land between major intersections is allowed. Design speeds are lower or similar to interstate systems, but are generally higher than arterial highways.

Principal Urban Arterial - Links major centers of activity of a metropolitan area. Its primary function is for mobility and carries a high proportion of total trips entering, exiting or passing through an urbanized area. It is not intended to provide direct access to individual properties along its path, and such service should be purely incidental to the primary function of the road for use of through traffic.

Minor Urban Arterial - Interconnects with and augments the Principal Urban Arterial. It provides a lower level of travel and trip lengths as compared to a Principal Arterial and it serves intra-community continuity. Spacing between Minor Urban Arterials varies from 1/8 to ½ miles in the central business district to 2 to 3 miles in the suburban areas. Although mobility is the primary function of this type of arterial system, it may provide limited access to major community centers along its path.

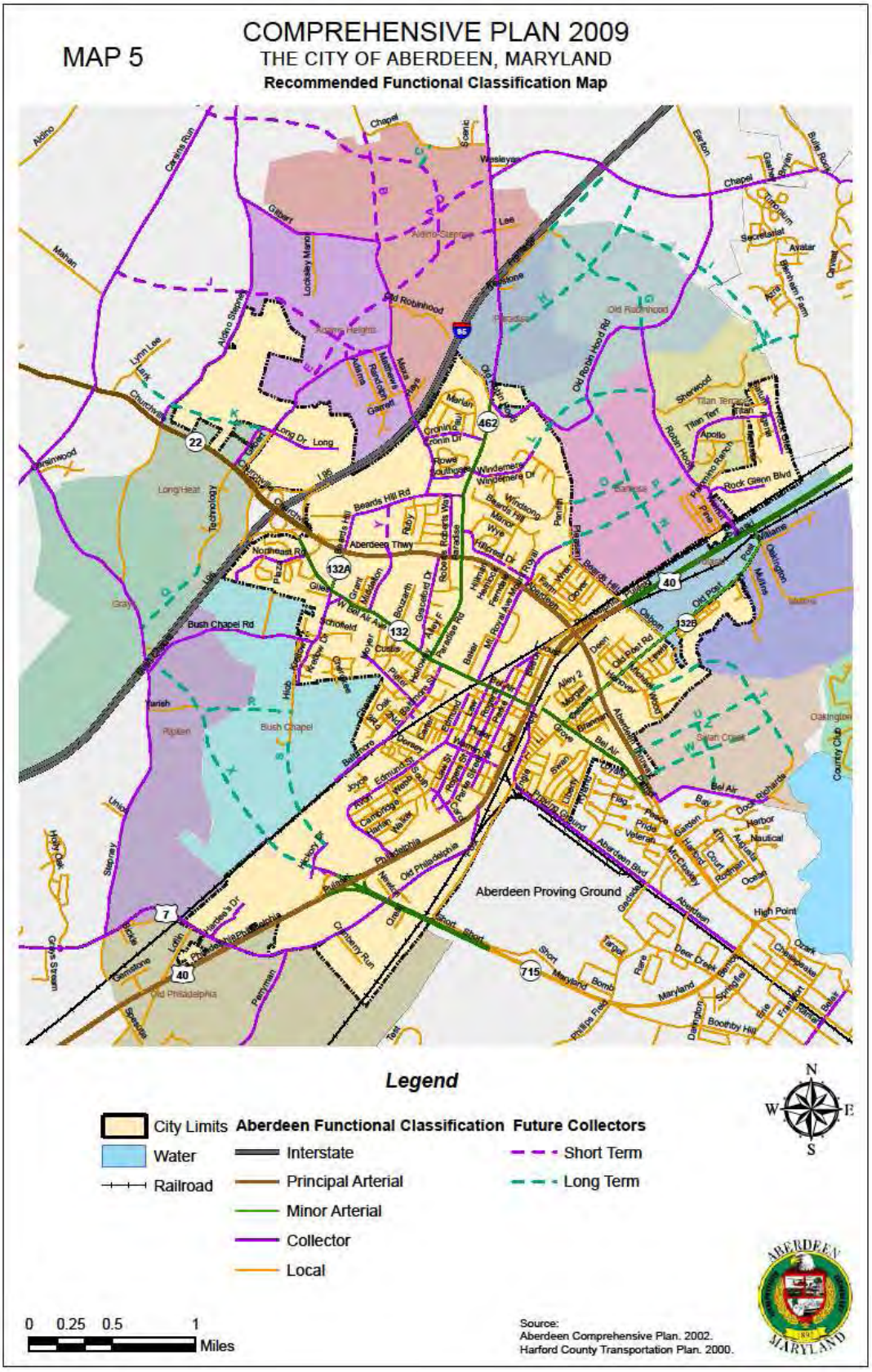
Urban Collector - Provides both access to abutting land and circulation within neighborhoods and business areas. It serves residential, commercial, and industrial areas by collecting and distributing motorists from local streets and channelizing them onto arterials for reaching their final destination. The amount of access provided to abutting land is important and the length of a collector street is typically 2 to 3 miles.

Principal Rural Arterial – Serves trips of substantial length such as statewide or interstate travel; connects urban areas of 50,000 or more; and provides an integrated network without stub connections except where unusual geographic conditions exist, such as international boundary connections.

Minor Rural Arterial - This roadway works in conjunction with Principal Rural Arterials and forms a network of rural roads that links cities, towns, and other major activity centers; serves the populated rural areas of the state; and provides mobility in the areas with minimal interference to through traffic.

Major Rural Collector – Provides service to towns that are not served by Principal Arterials.

Minor Rural Collector - Provides access and service to neighborhoods and direct access to residential, commercial, and industrial land uses.


COMPREHENSIVE PLAN 2009
MAP 5
THE CITY OF ABERDEEN, MARYLAND
Recommended Functional Classification Map
Aberdeen Proving Ground
Legend
City Limits
Water
Railroad
Aberdeen Functional Classification
Interstate
Principal Arterial
Minor Arterial
Collector
Local
Future Collectors
Short Term
Long Term
N
W
E
S
0 0.25 0.5 1
Miles
Source:
Aberdeen Comprehensive Plan. 2002.
Harford County Transportation Plan. 2000.
ABERDEEN
MARYLAND

Street Typologies

Fully addressing mobility needs requires that adjacent land use characteristics be taken into account. These land uses and road locations will also affect the types of transit service levels present, need for pedestrian accommodation, and bicycle facility types. So while the traditional functional classification organizes vehicular routes by other transport modes within a given area, a finer grain of classification is needed.

Refinement of Aberdeen's functional roadway classifications has led to the establishment of street typologies that describe the City's expectations for bicycle, pedestrian, and transit provisions for arterials and collectors in a variety of land uses settings. This suggests that a street may have different typology designations as it moves through different areas or is critical to a bicycle or transit network. Proposed street typologies are listed below and detailed on Table 4-7.

Arterial Streets

The following four arterial street types are proposed for consideration:

1. Regional Connector – This is an arterial street with a combination of free-flow ramp and signalized points of access. It primarily provides mobility through Aberdeen for motor vehicle, truck, and commuter bus traffic, as well as access to major destinations within Aberdeen. Provision of space for bicycle and pedestrian travel is secondary to motor vehicle movement but not optional, and the design should emphasize frequent, safe crossings for cyclists and pedestrians. Examples include MD 22 and the southern end of US 40.

2. Commercial Primary – An arterial street segment that serves (or is planned to serve) a low- or medium-density commercial area that may be equally oriented to retail stores, service, and industrial use. This street emphasizes transit and motor vehicle travel, including truck movements. It also facilitates bicycle access. Examples include Hickory Drive and MD 7.

3. Village Center Mixed Use – An arterial street segment that serves a compact mixed-use area that is fronted by (or planned to be fronted by) a variety of commercial, institutional, government, and/or residential uses. The street design emphasizes pedestrian, transit, and bicycle travel with adequate facilities provided within the street right-of-way. An example of this is US 40 near the rail station.

4. Residential – An arterial street that serves and traverses a primarily residential neighborhood and is fronted by (or planned to be fronted by) residential, park, or institutional property. This

street's design emphasizes bicycle and pedestrian travel, local motor vehicle travel, and transit access. An example is Paradise Road.

Collector Streets

Village Center Streets

Village Center Streets are collector or local streets located in a medium or high-density residential, commercial, or mixed-use area. These streets, often called side streets, may include street level shops, but do not have the same level of pedestrian and vehicular activity as arterial streets. In some locations, these streets provide service, utility, and emergency vehicle access to alleys, loading docks, and building service areas for loading and unloading goods, recyclables, and refuse. Access to the street system from off-street and garage parking may also be located on Village Center Streets. Sidewalks, landscaping, and furnishings are provided on the streets, but they are at a reduced scale when compared with arterial streets. Typically, such streets will have one 10- or 11-foot-wide travel lane per direction, plus on-street parking. Special bicycle facilities and bus service are typically not needed but can be added as space allows and demand supports. In some locations, these streets allow motorists to avoid using arterials for short trips in the same corridor. These streets may provide pedestrians and cyclists a quieter alternative to arterial traffic. Village Center Streets have a posted speed limit of 25 mph and are eligible for traffic calming measures should a significant speeding problem be identified on them. Examples include Parke Street and West Bel Air Avenue.

Neighborhood Principal Streets

Neighborhood Principal Streets occur in lower-density residential areas and provide access for fronting properties and links to adjacent streets. Neighborhood Principal Streets have two travel lanes, can vary from 28 to 36 feet in width, and have posted speed limits of 25 mph. Like Village Center Streets, they provide a way for travel to and from home, connections to local resources, and a shared space in the neighborhood for walking, biking, talking with neighbors, and conducting everyday activities. On-street parking is a priority but is regulated according to need and space availability. It may be provided on one or both sides, or not at all, based on each street's conditions. Marked bicycle lanes may be provided, however, most often cyclists would share the travelway with motor vehicles. Neighborhood Principal Streets can be converted into Bicycle Boulevards, which prioritize bicycle traffic and discourage non-local, vehicular, cut-through traffic. Auto accommodations focus on access and local uses, so low speeds are required. Transit services are

usually provided by small buses and paratransit vans or cabs. Examples include Roberts Way, Kretlow Drive, Middelton Lane, and Edmund Street.

Neighborhood Minor Streets

Neighborhood Minor Streets occur in low- and medium-density residential areas. These streets are very similar to Neighborhood Principal Streets in form and function. The distinctive feature of these streets is their nearly exclusive orientation to providing access to residences. Since residential streets have low traffic volumes with infrequent travel by large vehicles, all users other than pedestrians can be accommodated within a relatively narrow travelway. On-street parking is usually provided, and sidewalks are needed along at least one side. Minor Streets place the highest transportation priority on pedestrian, bicyclist, and local motor vehicle access. Because emergency vehicles and school buses are often routed on Neighborhood Principal and Minor Streets, the streets also must allow for the safe operation of these larger vehicles. Social use of Minor Streets for community gatherings and other functions is accommodated and encouraged. A concept for shared use could be considered for some of these local streets.

Table 4-7: Proposed Street Types

Street Type	Travel Lanes	Median Priority	Target Speed (mph)	Transit Service	Bicycle Facilities	Limit Driveway Access	Parking Priority	Pedestrian Way
Arterial Streets								
Regional Connector	4-6	High	35-45	Limited	Shared-use trail or paved shoulder	Yes	None	6 ft. sidewalk or 10 ft. shared-use path plus 6+ ft. landscape strip
Commercial Primary	4 + turning	Medium	30	Frequent	Bike lane	No	Low	6-8 ft. sidewalk plus 6 ft. landscape zone
Village Center Mixed Use	2-4	None	20-25	Frequent	Bike lane/ shared lane	Yes	High	6-12 ft. sidewalk plus 6 ft. landscape zone
Residential	2-4	Medium	25-30	Moderate	Bike lane/ shared lane	No	Medium	6-8 ft. sidewalk plus 5-6.5 ft. landscape strip
Collector Streets								
Village Center Local	2	Low	20-25	Limited	Bike lane/ shared lane	No	High	6-8 ft. sidewalk plus 2.5-6 ft. landscape strip
Neighborhood Principal or Minor	2	Low/None	20-25	Limited	Shared lane	No	Medium	4-5 ft. sidewalk plus 2.5-4.5 ft. landscape strip

Proposed Road Improvements

Table 4-8 identifies significant changes in classification that are recommended to support the City's Comprehensive Plan.

Table 4-8: Proposed Functional Classification Changes

Roadway	Limits		Functional Classification	
	From	To	Existing	Proposed
Aberdeen Thruway (MD 22)	I-95	APG Gate	Freeway/Expressway	Principal Arterial
Beards Hill Road	MD 22	MD 462	Local	Collector
Gilbert Road	Long Dr	Aldino Stepney Rd	Local	Collector
Maxa Road	Gilbert Dr	Beards Hill Rd	Local	Collector
Aldino Stepney Road	MD 22	MD 156	Local	Collector
Plater Street	West terminus	Baltimore St	Local	Collector
Old Post Road	Bel Air St	MD 22	Local	Minor Arterial
Old Robin Hood Road	MD 462	Robin Hood Rd	Local	Collector
Old Philadelphia Road	US 40	US 40	Local	Collector

Transit Improvement Plans

Rail Station

Aberdeen, Harford County, and MDOT have completed a station-area transit needs assessment and market analysis. The assessment has provided an array of improvements that would be needed to establish a multimodal transit center in Aberdeen. The assessment included an analysis of BRAC-related growth, and a determination of the potential for transit to play a greater role in meeting the transportation demands of new residents and employees. The study also analyzed the market opportunity for transit-oriented development around the multimodal transit center.

The existing rail station is within Aberdeen's downtown revitalization district. The transit needs study indicated that the existing station area can accommodate a multimodal transit center. The implementation of this type of project will take several years and will likely require the City to acquire land and put zoning in place to allow mixed-use, transit-oriented development. The City would also need to work with MDOT and Amtrak to find funding for development of the transit center.

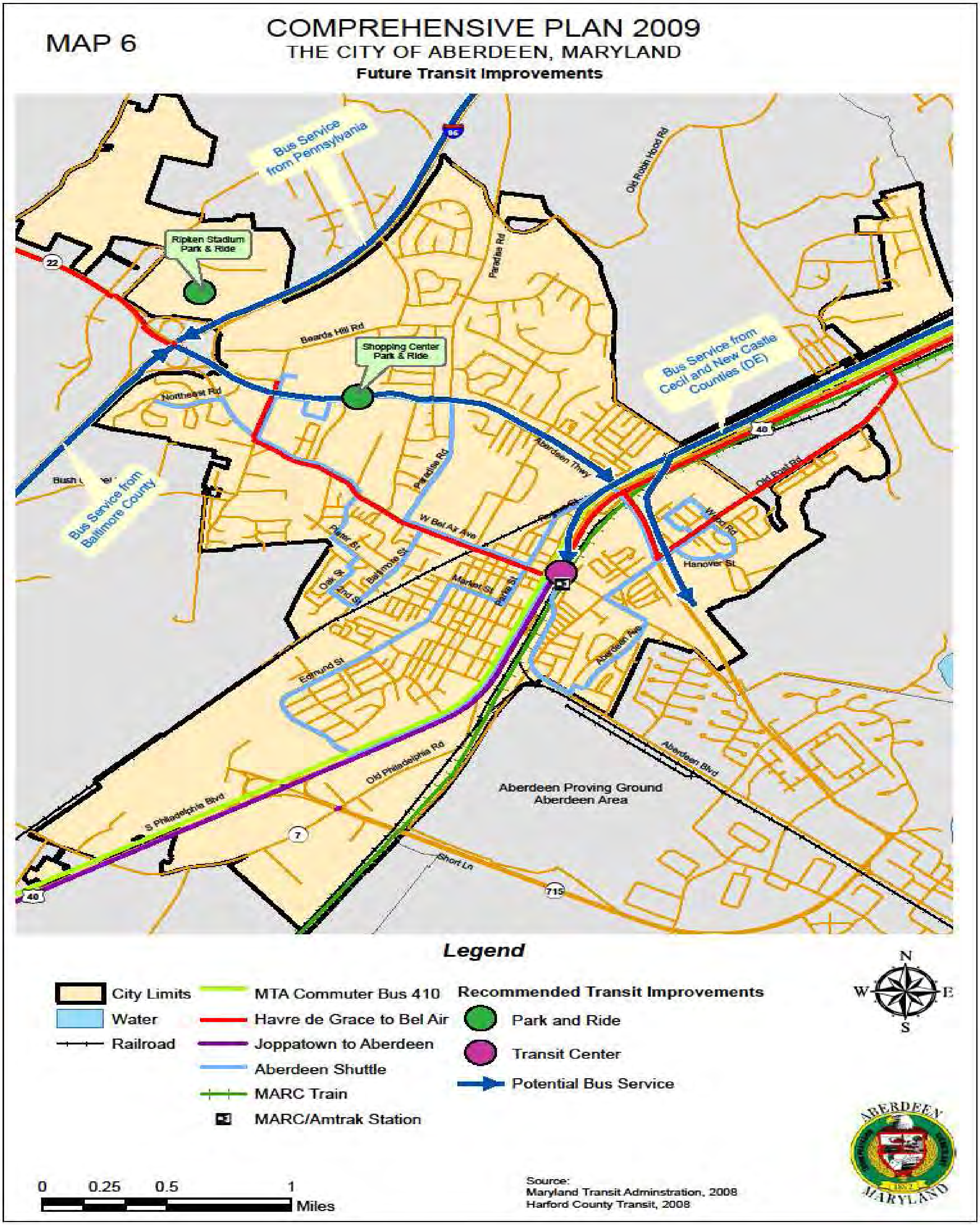
Map 6 found on Page 4-34 shows future transit improvements for Aberdeen, including additional bus routes to APG, a transit center, and a park-and-ride facility.

Aberdeen will support short-term improvements at the existing station that promote its viability as a multimodal hub, including expansion of commuter parking by MTA, provision of bike racks, and local taxi information at the station. The City will work with HCTS to coordinate bus schedules with train arrival times. HCTS and MTA bus schedules will be made available at the station and at other locations within Aberdeen. Added MARC service between Washington D.C. and Delaware is also planned. This service improvement would utilize Aberdeen's rail station.

Bus Service

A long-term strategy for bus service improvements will be strongly influenced by the establishment of a multimodal transit center. Optimally, timed transfers between services will contribute to the center's success as a multimodal hub. Shuttles from APG and services linking new development areas will be part of the mix of services available.

Aberdeen has a pivotal role in advocating for a shuttle service into APG. A shuttle from the existing park-and-ride lot or a new commuter parking facility near I-95 could help to reduce the traffic on MD 22 and, with other transportation system management measures, could reduce the need for widening. People are generally more willing to take advantage of transit as an alternative when they have a major change occurring, such as a new job or new home. This suggests that the shuttle will be operating when the majority of new BRAC employees arrive.


MAP 6
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Future Transit Improvements
Bus Service from Pennsylvania
Ripken Stadium Park & Ride
Shopping Center Park & Ride
Bus Service from Cecil and New Castle Counties (DE)
Bus Service from Baltimore County
Beards Hill Rd
Northeast Rd
Paradise Rd
Old Robin Hood Rd
Aberdeen Thwy
W Bel Air Ave
Old Post Rd
Hanover St
Plater St
Baltimore St
Market St
Parke St
Edmund St
Aberdeen Ave
Old Philadelphia Rd
S Philadelphia Blvd
Aberdeen Blvd
Short Ln
Aberdeen Proving Ground Aberdeen Area
Legend
City Limits
Water
Railroad
MTA Commuter Bus 410
Havre de Grace to Bel Air
Joppatown to Aberdeen
Aberdeen Shuttle
MARC Train
MARC/Amtrak Station
Recommended Transit Improvements
Park and Ride
Transit Center
Potential Bus Service
N
S
E
W
0 0.25 0.5 1
Miles
Source:
Maryland Transit Adminstration, 2008
Harford County Transit, 2008
ABERDEEN
MARYLAND

Promotions and advertising will explain the Federal tax advantages available to commuters who take transit or vanpools, and APG will be encouraged to promote employee and contractor use of the shuttle.[9] Aberdeen is considered to be within the Washington Region for Federal employees. Over the next several years, until the transit center is established, the City will work with HCTS on route modifications to help improve on-time performance. The City will include references to the accommodation of existing and future bus stops in the requirements for Subdivision and Site Plan review. Bus operations and pedestrian access to bus stops is considered in the review of site plans.

The City will work with HCTS to assure that pedestrian accommodations are provided at all bus stops. Considerations in bus-stop placement include safety, proximity to intersections and traffic signals, ADA compliance, and visibility. Rider convenience is also important. There are MTA bus stop spacing guidelines for urban, suburban, and rural settings that can serve as a guide.[10]

The City will encourage transit use as a matter of public policy. Businesses within Aberdeen will be encouraged to provide transit information to employees.

Pedestrian Improvement Plans

Aberdeen is faced with a number of physical barriers that present challenges to circulation. In particular, pedestrian circulation is hindered by the rail line and station facility, I-95, and APG. Because of its width, traffic speeds, and the lack of designated crossings, Philadelphia Boulevard is a barrier for many pedestrians. The Aberdeen Thruway (MD 22) has become a barrier since it can only be crossed in designated places due to the median and the volume and speed of traffic. As traffic increases on MD 22 it will become more of a barrier. For community cohesion, it is important to reduce or minimize barriers to mobility. Where barriers cannot be eliminated, safe, visible pedestrian crossings must be provided.

[9] Section 132 of the Internal Revenue Code and Title 26 of the US Code allows employers to give their workers up to $230 each month for transit or vanpool commuting costs as a tax-free benefit. It also allows employers to give employees the option to use payroll deductions to avoid paying taxes on up to $230 a month in commuting costs. Alternatively, employers can share these costs with their workers by paying part of their monthly commuting costs and letting workers pay the balance using pre-tax dollars. Either way, both employers and their employees can save money by participating in this simple plan.

[10] Maryland Transit Guidelines May 2002

The recommended street typologies serve as a guide for the pedestrian accommodations to be provided. In areas where pedestrian activity should be expected or is to be encouraged, the sidewalks should be wider and landscaping provided to create a pleasant walking environment.

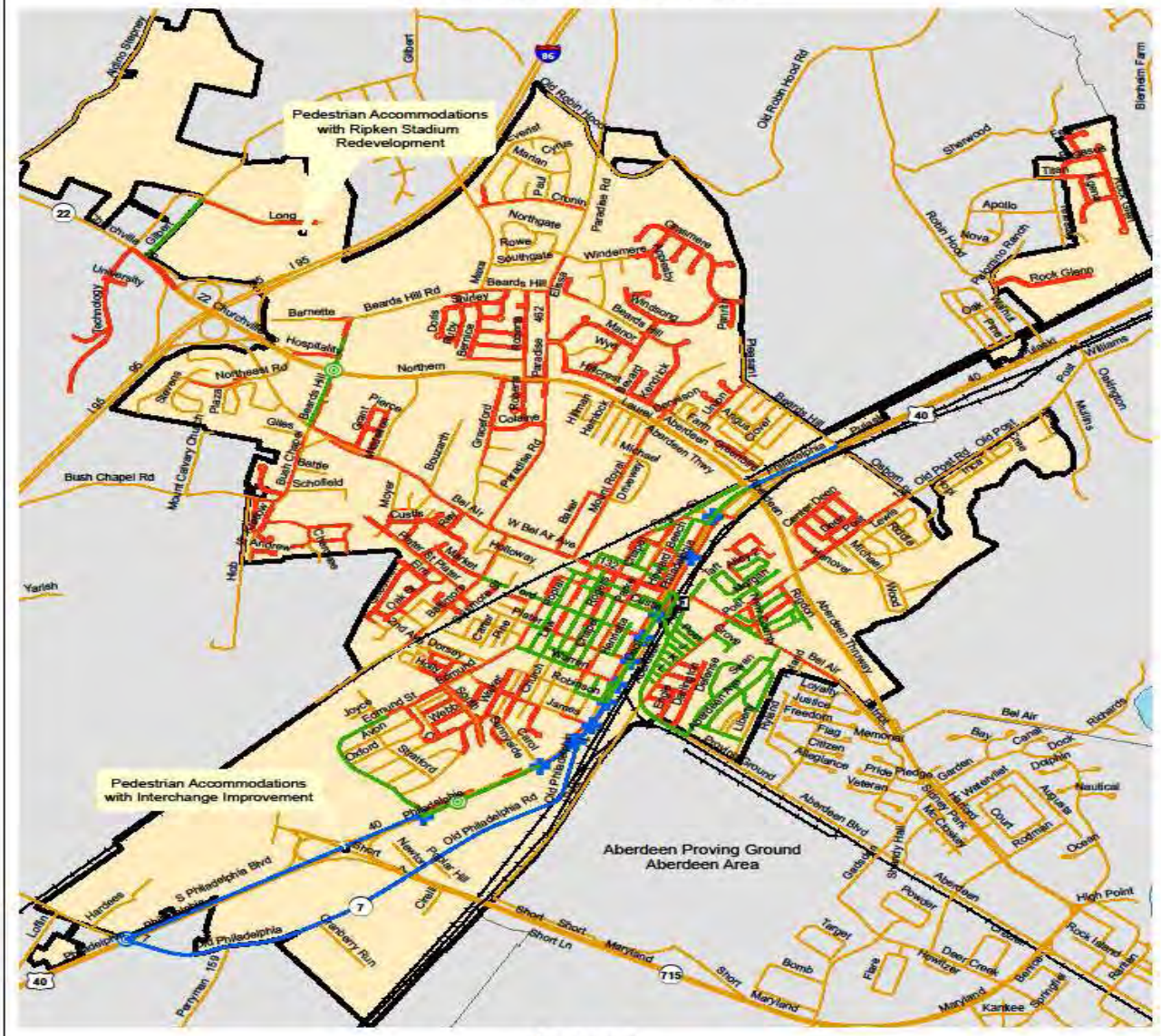
New buildings should be oriented to the street with no blank walls. Parking impacts on the pedestrian environment, with driveways and surface lots at the street edge, should be avoided. The specific sidewalk design requirements for newly developing areas are provided in the Development Code. Existing streets should be retrofitted with sidewalks and crosswalks as needed when road maintenance, rehabilitation, or other public improvements are undertaken. The City's inventory of sidewalks provides information on gaps in the existing network. Additionally, there are many areas where accessible ramps and crosswalks are needed. The City must prioritize facility needs and establish an annual pedestrian facility improvement program. One approach often taken is to establish pedestrian priority zones wherein City efforts would be targeted for a period of time. The outcomes will be more noticeable and encourage public support for further improvements in other areas.

State policy now requires that the SHA address pedestrian needs as part of routine road maintenance and improvements. A joint corridor study for Philadelphia Boulevard has been recommended to assure that local concerns are taken into account as improvements are made. When the SHA and the City conduct the study for improving Philadelphia Boulevard, the focus will be to make a "complete street," which means including plans for providing sidewalks, designated pedestrian crossings with pedestrian signals, improved bicycle access, and well-designed transit stops. (This type of corridor study is recommended in the Plan.)

As areas are annexed and development occurs, it will be important to assure that pedestrian connections are made to existing City streets. This will prevent additional barriers to pedestrian mobility from being created. Map 7 found on Page 4-37 identifies priority areas for pedestrian improvements based on the identified gaps in the existing sidewalk network, the areas where transit service is provided, and the locations where land uses already generate pedestrian activity that should be safely accommodated.

MAP 7

COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Recommended Sidewalk Facilities



Bicycle Network Plan

On-Street Bicycle Network

Bicycle improvements are needed throughout Aberdeen and its planning areas to establish a complete network. The means by which the improvements are implemented will vary. City staff and developers will refer to the typology guide to determine the type of facilities recommended for the area served. All new transportation facilities will follow the guide and, more specifically, the bicycle facility requirements of the Development Code. The proposed bicycle facilities map (Map 8 found on Page 4-40) shows the recommended network of on-road bicycle lanes and designated shoulders. These facilities will serve as the framework for the bicycle network, but must be connected by a system of neighborhood and local streets throughout the City that adequately accommodate bicycles. They are meant to provide a guide for network connections that will be considered in greater detail in sub-area plans and proposals.

Corridor studies for US 40 and MD 22 will expressly include the provision of safe on-street bicycle facilities. Access management to consolidate driveways and reduce conflicts with turning vehicles, and a better-defined shared space are particularly important on US40.

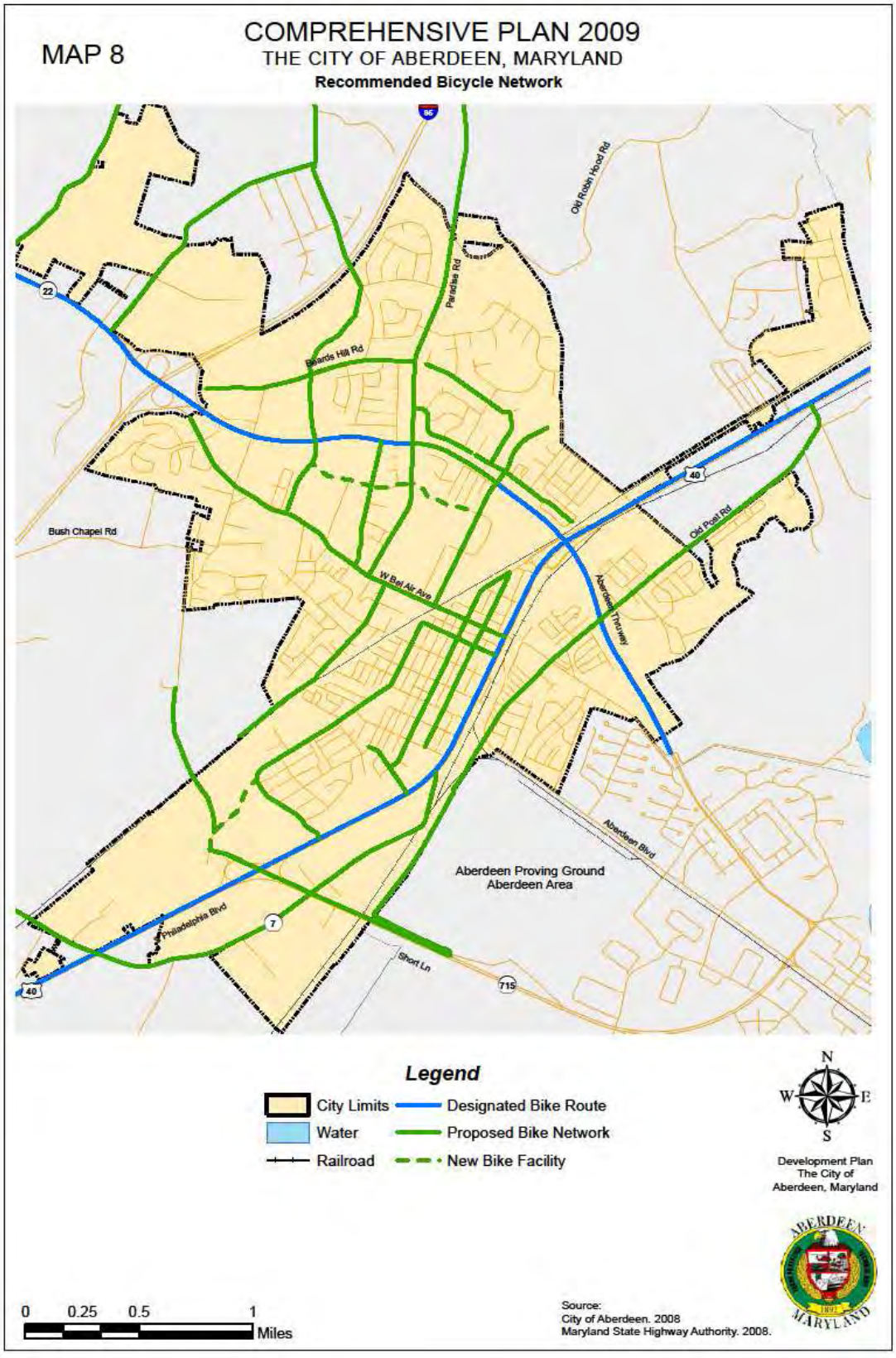
Existing streets will be retrofitted with bicycle accommodations as road maintenance, rehabilitation, or improvements are undertaken. It will be necessary to create wide outside lanes on existing local streets and install bike symbols and signs.

Bicycle Parking

Additionally, bike parking will be provided at all community facilities where people gather. All schools, parks, and public buildings, such as the Municipal Center, the library, and the rail station, will provide bike racks. The City will encourage that bike parking be provided downtown and at shopping centers, office buildings, and other large activity centers through its permitting process. The commuter rail station will also dedicate space for long-term secure parking. This could be lockers or potentially a “manned” bike station that could improve “eyes on the street” in the station area. It could be combined with a bicycle retailer or cooperative.

Hiker/Biker Paths

The off-road components of the Planned Bicycle Facilities map identify segments that could be widened to serve as multi-use trails. When such facilities connect parks and playgrounds or open spaces, they are often suitable for hiking, skating, or skateboarding as well as for bicycling. Where feasible, the City can combine needs for recreational trails with links in the bicycle network. This will require making paths wider and clearly designating them as multiuse trails. State and Federal funding sources are available for implementing bicycle improvements. The City will establish priorities and develop a strategy to seek funding assistance for these improvements.


MAP 8
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Recommended Bicycle Network
Old Robin Hood Rd
Paradise Rd
Beards Hill Rd
Bush Chapel Rd
W Bel Air Ave
Old Post Rd
Aberdeen Thruway
Aberdeen Blvd
Aberdeen Proving Ground
Aberdeen Area
Philadelphia Blvd
Short Ln
Legend
City Limits
Water
Railroad
Designated Bike Route
Proposed Bike Network
New Bike Facility
N
W
E
S
Development Plan
The City of
Aberdeen, Maryland
0 0.25 0.5 1
Miles
Source:
City of Aberdeen. 2008
Maryland State Highway Authority. 2008.

Thoroughfare Plan

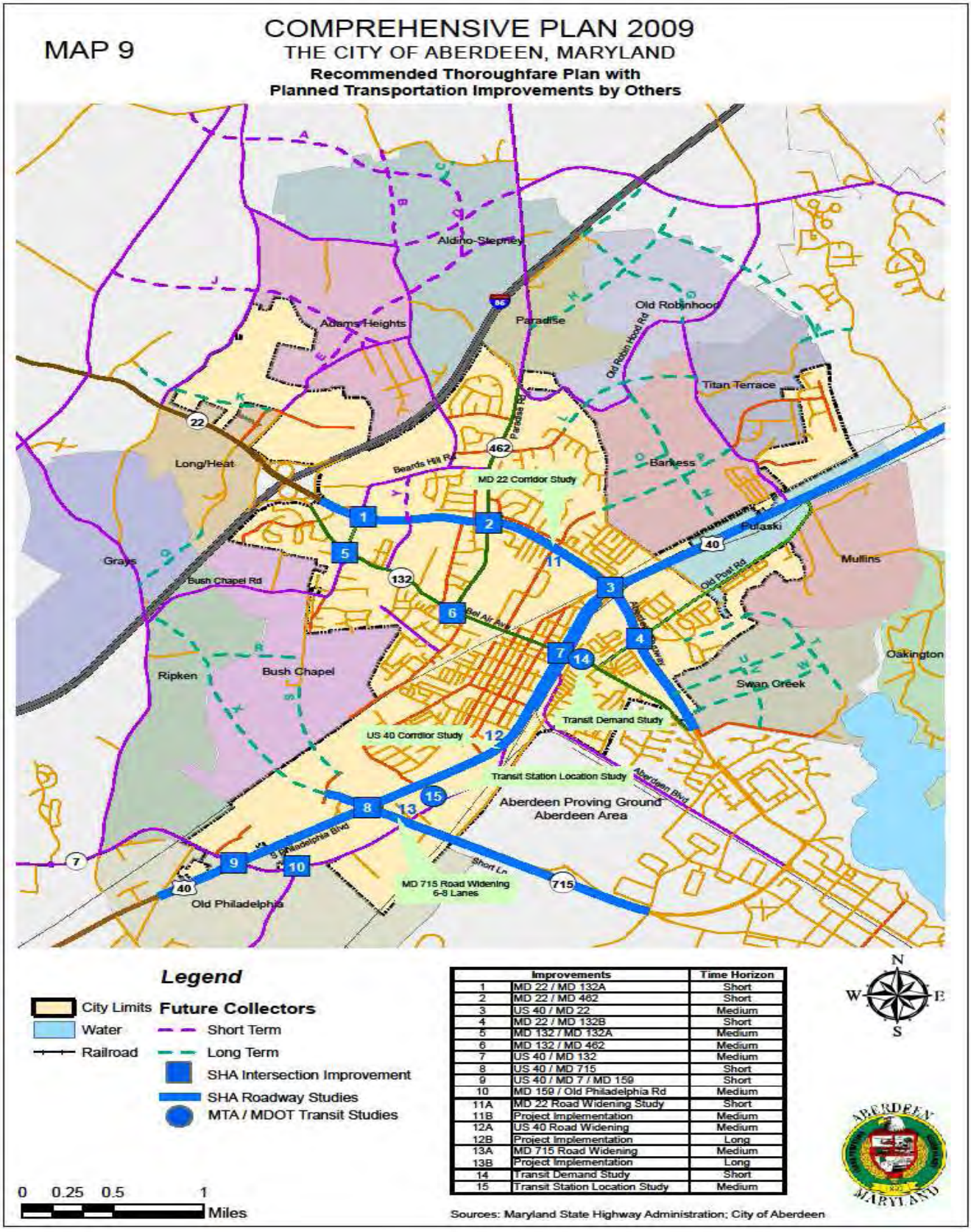
Map 9 found on Page 4-42 provides the Thoroughfare Plan and shows the long-range roadway improvements needed to support the development/re-development in Aberdeen and the planning areas considered for growth. The map also shows proposed new roadway links and significant changes to existing roadways recommended to support the City's growth plan.

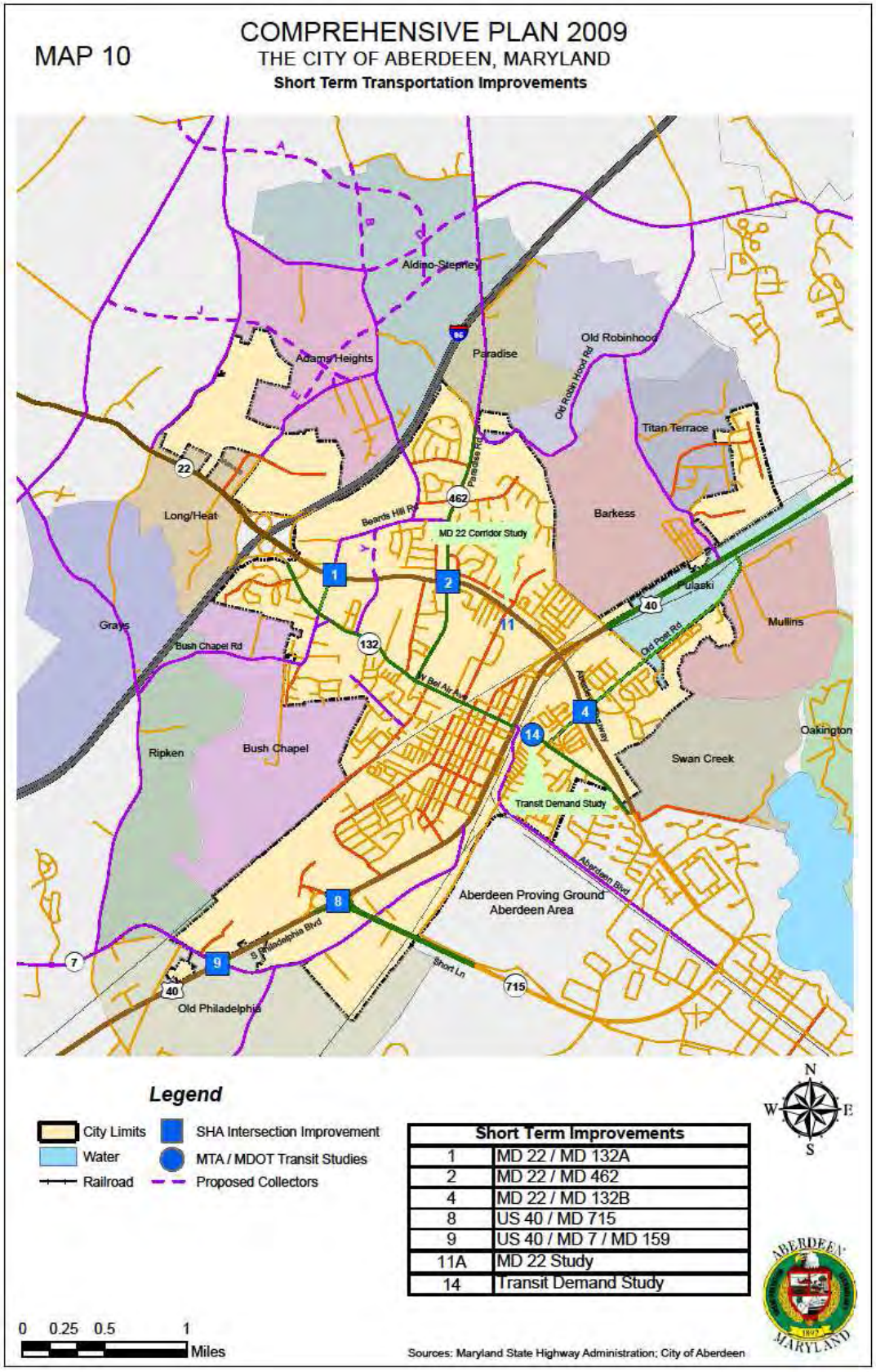
In addition, the plan includes Map 10 found on Page 4-43 showing short-term and Map 11 found on Page 4-44 showing mid-term transportation improvements. Two corridor studies are included among the recommendations to evaluate opportunities and impacts of potential roadway widening to accommodate anticipated BRAC traffic.

Prioritization of Transportation Improvements

Short-Term Plan (approved and not yet built)

The limits of the new and improved roadways recommended for the short-, medium- and long-term time frames have been identified. Short-term transportation improvements are those that have been included in budgets but not yet built. Table 4-9 identifies the short-term improvements that are intended by SHA, or by developers as proposed projects are built. It also includes the MD 22 corridor study, which will be completed before long-range improvements are designed.


MAP 9
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Recommended Thoroughfare Plan with
Planned Transportation Improvements by Others
Aldino-Stepney
Adams Heights
Paradise
Old Robinhood
Titan Terrace
Long/Heat
Barkess
MD 22 Corridor Study
Pulaski
Mullins
Grays
Bush Chapel Rd
Old Post Rd
Ripken
Bush Chapel
Oakington
Swan Creek
Transit Demand Study
US 40 Corridor Study
Transit Station Location Study
Aberdeen Proving Ground
Aberdeen Area
MD 715 Road Widening
6-8 Lanes
Old Philadelphia
Legend
City Limits
Water
Railroad
Future Collectors
Short Term
Long Term
SHA Intersection Improvement
SHA Roadway Studies
MTA / MDOT Transit Studies
0 0.25 0.5 1
Miles
Improvements
Time Horizon
1 MD 22 / MD 132A Short
2 MD 22 / MD 462 Short
3 US 40 / MD 22 Medium
4 MD 22 / MD 132B Short
5 MD 132 / MD 132A Medium
6 MD 132 / MD 462 Medium
7 US 40 / MD 132 Medium
8 US 40 / MD 715 Short
9 US 40 / MD 7 / MD 159 Short
10 MD 159 / Old Philadelphia Rd Medium
11A MD 22 Road Widening Study Short
11B Project Implementation Medium
12A US 40 Road Widening Medium
12B Project Implementation Long
13A MD 715 Road Widening Medium
13B Project Implementation Long
14 Transit Demand Study Short
15 Transit Station Location Study Medium
N
W
E
S
Sources: Maryland State Highway Administration; City of Aberdeen


COMPREHENSIVE PLAN 2009
MAP 10
THE CITY OF ABERDEEN, MARYLAND
Short Term Transportation Improvements
Aldino-Stepney
Adams Heights
Paradise
Old Robinhood
Old Robin Hood Rd
Titan Terrace
Paradise Rd
Long/Heat
Beards Hill Rd
MD 22 Corridor Study
Barkess
Pulaski
Grays
Bush Chapel Rd
Mullins
Old Post Rd
W Bel Air Ave
Ripken
Bush Chapel
Oakington
Swan Creek
Transit Demand Study
Aberdeen Proving Ground
Aberdeen Area
Aberdeen Blvd
S Philadelphia Blvd
Short Ln
Old Philadelphia
Legend
City Limits
Water
Railroad
SHA Intersection Improvement
MTA / MDOT Transit Studies
Proposed Collectors
Short Term Improvements
1 MD 22 / MD 132A
2 MD 22 / MD 462
4 MD 22 / MD 132B
8 US 40 / MD 715
9 US 40 / MD 7 / MD 159
11A MD 22 Study
14 Transit Demand Study
N
W
E
S
0 0.25 0.5 1
Miles
Sources: Maryland State Highway Administration; City of Aberdeen
ABERDEEN
1892
MARYLAND

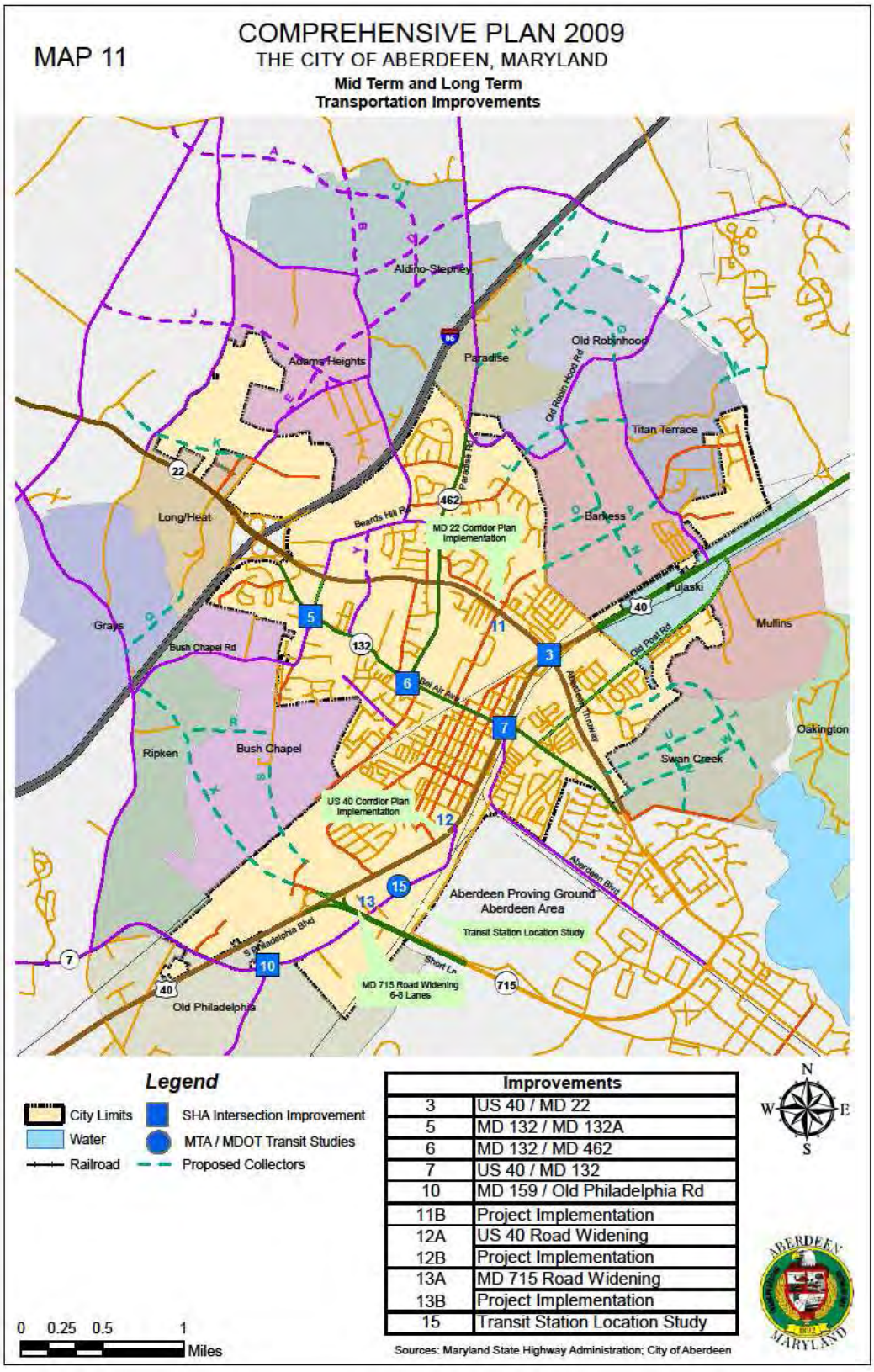

MAP 11
COMPREHENSIVE PLAN 2009
THE CITY OF ABERDEEN, MARYLAND
Mid Term and Long Term
Transportation Improvements
Aldino-Stepney
Adams Heights
Paradise
Old Robinhood
Old Robin Hood Rd
Titan Terrace
Long/Heat
Beards Hill Rd
MD 22 Corridor Plan Implementation
Barkess
Pulaski
Mullins
Old Post Rd
Grays
Bush Chapel Rd
Bel Air Rd
Ripken
Bush Chapel
Oakington
Swan Creek
US 40 Corridor Plan Implementation
Aberdeen Proving Ground
Aberdeen Area
Transit Station Location Study
Aberdeen Blvd
S Philadelphia Blvd
Short Ln
MD 715 Road Widening 6-8 Lanes
Old Philadelphia
Legend
City Limits
Water
Railroad
SHA Intersection Improvement
MTA / MDOT Transit Studies
Proposed Collectors
Improvements
3 US 40 / MD 22
5 MD 132 / MD 132A
6 MD 132 / MD 462
7 US 40 / MD 132
10 MD 159 / Old Philadelphia Rd
11B Project Implementation
12A US 40 Road Widening
12B Project Implementation
13A MD 715 Road Widening
13B Project Implementation
15 Transit Station Location Study
N
W
E
S
0 0.25 0.5 1
Miles
Sources: Maryland State Highway Administration; City of Aberdeen
ABERDEEN
1892
MARYLAND

Table 4-9: Short-Term Transportation Improvements (2009-2015)

Map Reference Number	Existing Location or proposed limits	Implementing Agency/Entity	Description
1	Aberdeen Thruway (MD 22)/ Beards Hill Road (MD 132A)	SHA	Add left turn lanes to each approach; thru lanes on MD 22
2	Aberdeen Thruway (MD 22)/ Paradise Road (MD 462)	SHA	Add northbound right-turn lane, 2 southbound left-turn lanes, and thru lanes on MD 22
4	Aberdeen Thruway (MD 22)/ Old Post Road (MD 132B)	SHA	Extend turn lane pockets on MD 132B, add thru lanes on MD 22
8	Philadelphia Boulevard (US 40)/ Short Lane (MD 715)	SHA	Add thru and turn lanes to US 40 eastbound on- and off-ramps, thru lanes to MD 715
9	Philadelphia Boulevard (US 40)/ Philadelphia Road (MD 7)/ Old Philadelphia Road (MD 159)	SHA	Add turn lanes to MD 7 and MD 159, two thru lanes in each direction to US 40
11A	Aberdeen Thruway (MD 22)	SHA/City of Aberdeen	Corridor Study between I-95 and APG
14	Existing Aberdeen Rail Station @ Philadelphia Road (US 40)/ W Bel Air Avenue (MD 132)	MDOT	Study feasibility and implementation of transit center
A	From Carsins Run Road to Road E	Developer(s)	New collector roadway to accommodate planned development
B	From Chapel Road to Gilbert Road	Developer(s)	New collector roadway to accommodate planned development
D	From Gilbert Road to Paradise Road/Chapel Road	Developer(s)	New collector roadway to accommodate development
E	From Gilbert Rd/Adams Rd to Paradise Rd/Lee Rd	Developer(s)	New collector roadway to accommodate development
J	From Carsins Run Rd to Gilbert Rd/Adams Road	Developer(s)	New collector roadway to accommodate development
Y	Extend Middleton Rd from Aberdeen Thruway (MD 22) to Beards Hill Rd	SHA/City of Aberdeen/ Developer(s)	Extension of existing collector to accommodate development

The transportation improvements identified in Table 4-9 are illustrated in Map 10 found on Page 4-43.

Mid-Range Plan (2020)

Table 4-10 identifies mid-range transportation projects and improvements that, based on expected growth and development, will be needed by 2020.

Table 4-10: Mid-Range Transportation Improvements (2015-2020)

Map Reference Number	Existing Location or Proposed Limits	Implementing Agency/Entity	Description
3	Aberdeen Thruway (MD 22)/ Philadelphia Road (US 40)	SHA	Increase interchange capacity
5	W Bel Air Avenue (MD 132)/ Beards Hill Road (MD 132A)	SHA	Increase intersection capacity
6	W Bel Air Avenue (MD 132)/ Paradise Road (MD 462)	SHA	Increase intersection capacity
7	Philadelphia Road (US 40)/ W Bel Air Avenue (MD 132)	SHA	Increase intersection capacity
10	Perryman Road (MD 159)/ Old Philadelphia Road	SHA	Increase intersection capacity
11B	Aberdeen Thruway (MD 22)	SHA	Implement findings of Corridor Study
12A	Philadelphia Road (US 40)	SHA	Corridor Study between Robin Hood Road and MD 7
13A	Short Lane (MD 715)	SHA	Corridor Study between US 40 and APG Gate
15	Existing MARC/Amtrak Rail Station	MDOT/MTA/Amtrak City of Aberdeen	Implementation of transit center improvements including plans for mixed use Transit Oriented Development (TOD)

Long-Range Plan (2030)

Table 4-11 identifies long-range transportation projects needed to support the growth and development anticipated in this comprehensive plan by 2030. These are improvements that will provide access to newly developing or redeveloping areas as well as widening and changes to access on the existing transportation network.

Table 4-11: Long-Term Transportation Improvements (after 2020)

Map Reference Number	Existing Location or Proposed Limits	Implementing Agency/Entity	Description
12B	Philadelphia Road (US 40)	SHA	Implement findings of Corridor Study
13 B	Short Lane (MD 715)	SHA	Implement findings of Corridor Study
C	From "A" to Chapel Road	Developer(s)	New collector roadway to accommodate development
F	From Frontage Road to Chapel Road	Developer(s)	New collector roadway to accommodate development
G	From Frontage Road to Robin Hood Road	Developer(s)	New collector roadway to accommodate development
H	From Paradise Road to Chapel Road	Developer(s)	New collector roadway to accommodate development
I	From "H" to "M"	Developer(s)	New collector roadway to accommodate development
K	From Lark Drive to Long Drive	Developer(s)	New collector roadway to accommodate development
L	From Old Robinhood Road to Robin Hood Rd /Sherwood Lane	Developer(s)	New collector roadway to accommodate development
M	From Sherwood Lane to Blenhiem Lane	Developer(s)	New collector roadway to accommodate development
N	From Old Robin Hood Road to CSX Rail line	Developer(s)	New collector roadway to accommodate development
O	From Grasmere Drive to "N"	Developer(s)	New collector roadway to accommodate development
P	From Mt Royal Avenue to Robin Hood Road	Developer(s)	New collector roadway to accommodate development
Q	From Stepney Road to Technology Drive	Developer(s)	New collector roadway to accommodate development
R	From Hiob Lane to "X"	Developer(s)	New collector roadway to accommodate development
S	From Hiob Lane to Hickory Drive	Developer(s)	New collector roadway to accommodate development

T	From Michael Lane to Richard's Lane	Developer(s)	New collector roadway to accommodate development
U	From Aberdeen Thruway (MD 22) to "T"	Developer(s)	New collector roadway to accommodate development
V	From "U" to Richard's Lane	Developer(s)	New collector roadway to accommodate development
W	From Aberdeen Thruway (MD 22) to "T"	Developer(s)	New collector roadway to accommodate development
X	Extend MD 715 to Yarish Lane	Developer(s)	New collector roadway to accommodate development

The improvements identified in Table 4-11 are illustrated in Map 11 found on Page 4-44, the Mid Term and Long Term Transportation Improvements.

Recommended Actions for Implementation

Improved City coordination with Harford County

Currently, BRAC-focused update meetings are held with State, City, and County staff. Similar meetings on a broader range of transportation issues are recommended between the City and County on a quarterly basis to coordinate and share information on transportation plans and the status of transportation projects to be implemented.

Improved City coordination with MTA

It is important for the City to be informed about the status of MTA initiatives on the rail station, commuter bus services, MARC service improvements, MARC maintenance facility, and any other future initiatives. The City should request that MTA provide bi-monthly updates in person or by conference call with all relevant agency staff involved.

City Policy

The City's Downtown Re-development Strategy should endorse (by reference) specific transportation objectives and policies from this plan.

The Aberdeen Development Code and Subdivision Regulations should be revised to be consistent with this chapter. Specific recommendations on roadway classification, road typologies and provision of transit, bicycle, and pedestrian facilities are specifically important.

For the station area, the City will also need to address transit-friendly parking policy and regulation.

The City should adopt Traffic Impact Study guidelines and put in place a formal scoping and review process that includes access and circulation for all modes. Consideration should be given to implementing a Traffic Impact Fee at the building permit stage (in lieu of conditioning off-site improvements) to collect fees from private development that fund system-wide transportation improvements.

Downtown Revitalization Strategy

The City should be certain that its strategies for the Revitalization Overlay District and the Enterprise Zone support the intent of the Comprehensive Plan, including areas designated for transit-oriented development.

Additional Studies needed

- Joint City, Harford County, and SHA corridor study for MD 22 from I-95 to APG gate.

  There are several SHA highway improvements proposed as BRAC initiatives within the City in the design phase. SHA project managers should be requested to provide City

officials with project updates at each phase. The City should carefully consider the proposed improvements within the context of the Comprehensive Plan recommendations and provide written comments to SHA so that City concerns and priorities can be taken into account by SHA.

Several intersection improvements are currently proposed by SHA for MD 22 in Aberdeen. The potential improvements to address forecasted traffic demand on MD 22 could conflict with the City's transportation objectives for that route. The City, Harford County, and SHA should pursue a comprehensive corridor study for MD 22 to identify and evaluate options to roadway widening, including transportation system management (TSM) and transportation demand management (TDM)[11] measures. The corridor study should engage stakeholders from the community as well as from APG to balance the competing needs for mobility and accessibility.

- US 40 corridor study within the boundaries of the City's planning areas to determine how to accommodate traffic while meeting the City's goal for providing an integrated transportation system and promoting complete streets and compatible re-development.

Regulatory Revisions

The Subdivision Regulations and the Development Code should be consistent with the recommendations in the Comprehensive Plan to ensure consistency with the Transportation Element.

Functional Classifications, road typologies and road design standards must be consistent with the plan; otherwise, it will be difficult to achieve plan objectives. The City may need to update the Development Code and provisions of the Revitalization Overlay District to allow for compact mixed-use development typical of a transit-oriented development. The City may also want to review building setbacks, parking policy, and other requirements to be sure they are not inconsistent with the intent to create environments that encourage pedestrian, transit, and bicycle options.

[11] TSM and TDM are techniques that improve safety and mobility without widening streets. Examples of TSM techniques include signal timing, traveler information, access management, changes in allocation of user space through road markings, etc. Examples of TDM include increasing traveler incentives and awareness of transit and bicycling options.

Measures of Progress

The City should review its progress toward meeting the transportation system objectives regularly. A bi-annual report should be prepared for elected officials and the public on transportation projects implemented, policies enacted or amended, and strategies assessed or undertaken to meet transportation system objectives. This report will help City officials and the public to understand progress made in achieving its transportation system goal. Efforts can then be refocused as needed to improve progress or shift areas of emphasis.

Public Funding Strategies

There are various funding strategies for the City to consider as it implements the plan recommendations. Certain federal and state funding and assistance programs are targeted to local jurisdictions for specific types of transportation-related projects. Additionally, there are mechanisms the City could establish to generate funds for needed transportation improvements through private development. A brief description of a range of options under these two potential strategies is provided below.

Transportation Enhancement Program - A Federal-aid funding program administered by SHA for transportation-related, community projects designed to strengthen the intermodal transportation system. Projects are intended to improve quality of life and enhance the transportation experience. The projects that can be funded are deemed non-traditional in nature.

Bicycle and Sidewalk Retrofit Programs - These are State programs administered by the SHA Office of Planning and Engineering intended for minor projects along State highways.

Community Safety and Enhancement Program - This is a SHA program intended mainly for streetscape improvements in designated neighborhoods and priority funding areas.

Safe Routes to School Program - This is a Federal grant program administered by the SHA Highway Safety Office that provides funds to substantially improve the ability of primary and middle school students to walk and bicycle to school safely. Funds are available for infrastructure and non-infrastructure projects. The City has received two grants through this program as referenced in the footnote on page 4-14.

Congestion Mitigation and Air Quality Improvement Program (CMAQ**) -** This is a Federal highway and transit administration program intended for projects or programs that will improve air quality and help relieve congestion.

National Recreational Trails Program - This is intended for the development and maintenance of recreational trails.

Highway Safety Improvement Program - This is a Federal program administered by SHA intended to significantly reduce traffic fatalities. In Maryland, this program has sponsored Walkable Communities Workshops in various communities.

BRAC Revitalization and Incentive Zones - Maryland legislation will allow local jurisdictions to establish BRAC zones that would provide tax and financial incentives for the local jurisdiction and businesses. This program may help to spur transit-oriented development at the future Aberdeen multimodal station. The City received designation from the Maryland Department of Business and Economic Development for the Aberdeen BRAC Enhancement and Revitalization Zone on June 15, 2009.

Development-based Funding Mechanisms

Transportation Impact Fees - A one-time fee charged to new development with a goal of raising revenue for construction of new or expansion of existing facilities. These fees allow local governments to shift the costs of new public facilities from existing taxpayers to those responsible for and materially benefiting from the development. Much like water and wastewater hookup charges, the fee charged should have a direct relationship or "nexus" to the impact created by the use. The jurisdiction must have a fee schedule, a method for determining the fees, an established benefit district (and possibly assessment districts within the district), and it must be updated. This can be accomplished by first identifying the amount of funding necessary to support a compilation of transportation improvement projects. The jurisdictions then determine the number of new trips that will be added to these transportation facilities upon build out of the local area. By dividing the total cost of improvements by the number of new trips that will be added to the roadways through local development, a cost-per-trip can be determined. In Maryland, local governments must obtain explicit authority from the General Assembly before imposing a development fee.

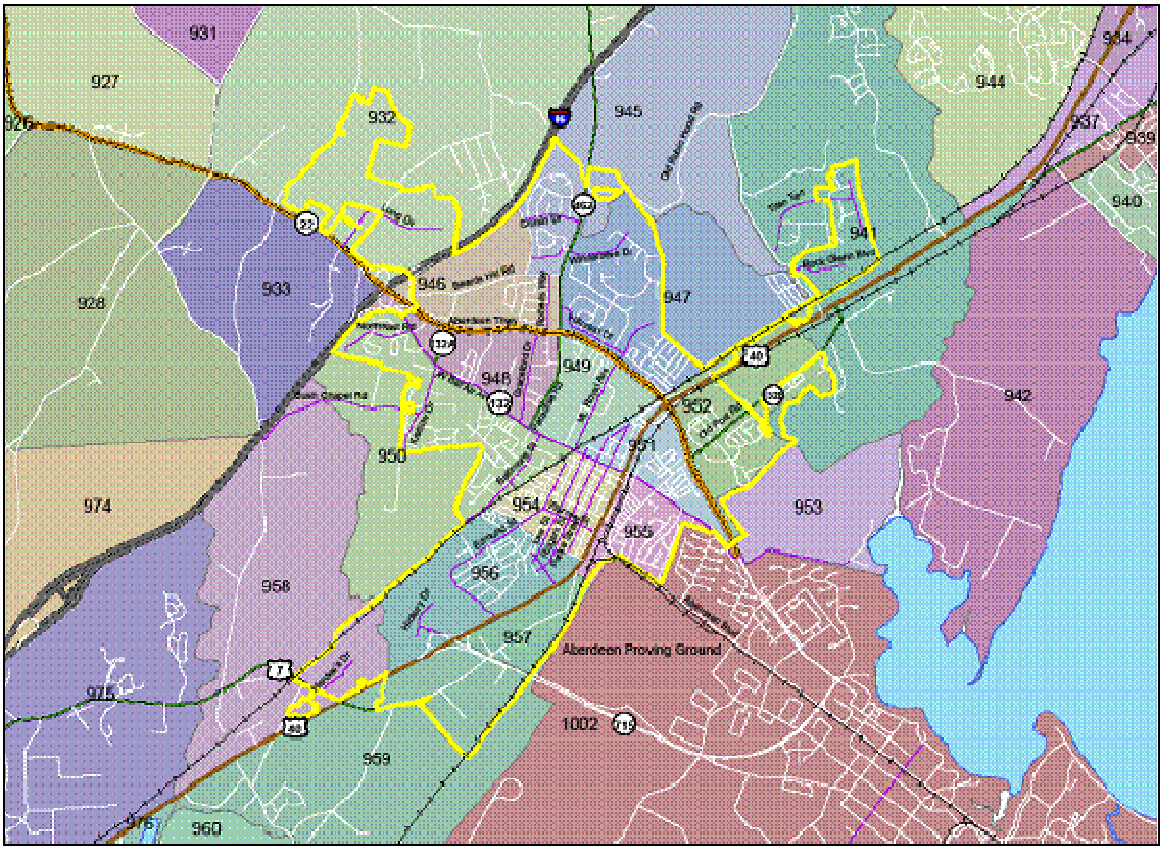
Road Club - Local improvement districts, or Road Clubs, are a tool by which a group of property owners can finance local area infrastructure needs over a long-term period. Road Clubs are typically used when the benefits of added value to individual properties exceed the cost of the improvement. Road Clubs require property owners to agree to participate and spread costs across multiple property owners proportional to the amount of benefit that individual properties receive. When a determination is made that the transportation facility is inadequate, the first to develop can proceed by making improvements that result in meeting adequacy requirements. The improvements made create excess roadway capacity, allowing other developers the opportunity to build and reimburse the original developer at a pro-rated amount for the capacity that their project will consume. When the capacity is consumed, the Road Club is closed.

Adequate Public Facilities Ordinance (APFO) – A growth management tool intended to link the timing of new development to the availability of facilities needed to service it. They are intended to slow the pace of development or delay development approval until adequate facilities are in place. Roads and schools are the most common type of infrastructure linked to APFOs, but other facilities can also be included. There should be a strong link between an APFO and a jurisdiction's capital improvement program and the comprehensive plan so that the needed infrastructure is put in place in a timely fashion. Impact fees are often linked with APFOs and provide for developers to contribute funds toward the provision of adequate infrastructure. Aberdeen intends to establish an APFO, and it should be considered whether transportation fees would be included among its provisions.

Tax Increment Financing - A tool available in Maryland through explicit action from the General Assembly. Tax increment financing can be used as an economic development tool to finance public transportation improvements within a re-development area by applying the new (or incremental) tax revenues generated by the project after completion. In essence, tax increment financing allows a given jurisdiction to borrow money to construct improvements in the near-term and then earmark the property tax revenue associated with the increase in assessed property value (the tax increment) to finance the borrowing. Tax increment financing may be appropriate for infrastructure related to large-scale, transit-station area development.

Appendix

Appendix #1 Aberdeen Area Transportation Analysis Zones



Chapter 5 - COMMUNITY FACILITIES ELEMENT

INTRODUCTION

This chapter describes the City's approach to providing major facilities and services. Community facilities are extremely important to maintaining and enhancing the public health, safety, and welfare of the residents and visitors of Aberdeen. Attractive public facilities are important in maintaining the confidence of homeowners and business owners in the community at-large. Schools, libraries, parks, and other facilities are all highly valued by residents and are important factors in where to buy or rent a home.

The location of community facilities should be consistent with plans for future growth and development in the City. Besides helping build a sustainable community, attractive public facilities also build community pride.

Community facilities include all properties and buildings owned by and/or providing a service to the City of Aberdeen. These facilities are grouped into five categories: (1) open space, (2) parks and recreation areas, (3) public buildings and services, (4) schools and cultural facilities, and (5) health services. The following sections detail the current status and projected needs of each of these community resources.

OPEN SPACE

Important elements of this chapter are the public parks, recreation, and open space opportunities that are a key component of our community's quality of life. A distinction must be made between planning for parks and recreation and planning for open space. Open space is necessary to adequately provide and plan for parks and recreation. At the same time, open space is also required for the protection of environmental features and resources. Currently, there are approximately 120 acres of recorded open space within the City limits that includes storm water management facilities, non-tidal wetlands, floodplains, forest conservation easements, and required open space.

In the future, land designated as open space should be controlled or acquired to ensure that it is not utilized for development. One approach may be to have the land that is impacted by sensitive areas deeded to the City and provide pockets of open space areas in subdivisions. Developers or homeowners associations may be interested in allowing the City to own these areas and provide passive recreational opportunities. Another approach may include the City coordinating with the Lower Susquehanna Heritage Greenway Commission to determine if any adjoining lands can be acquired in order to enhance and expand the Greenway. There are many advantages to being part of the Greenway, which include promoting existing natural, cultural, historical, and recreational resources.

PARKS AND RECREATION AREAS

There are many different types of parks and recreational facilities that serve various areas of the City (see attached Existing and Proposed Park Areas Map on page 5-5):

Existing Facilities

1. Plater Street Park

   Plater Street Park is a neighborhood park with improvements including a pavilion, a picnic area with grills, and playground equipment. The park is located off Plater Street near Moyer Drive. The City installed new playground equipment in 2009 that was funded by the Department of Natural Resources Parks and Playgrounds Grant Program. The park comprises 0.94 acre and is located in the southwest portion of Aberdeen. It is zoned R-2. The City of Aberdeen's Department of Public Works maintains this park. The Aberdeen Board of Parks and Recreation handles organization, sponsorship, and program coordination of the park.

2. A. B. DeMarco Park

   A. B. DeMarco Park is a community park featuring open space for a variety of active and passive recreational activities. This park is located off Ruby Drive and MD 22 near Beards Hill Shopping Plaza. A parking lot with pedestrian access is located to the rear of the Beards Hill Shopping Plaza. Access off Middelton Lane will be provided in the future. The park is 3.79 acres in area with a zoning of R-2. The City of Aberdeen's Department of Public Works maintains this park. The Aberdeen Board of Parks and Recreation handles organization, sponsorship, and program coordination of the park. The City is currently working with the Harford County Department of Parks and Recreation and the State of Maryland’s Department of Natural Resources to relocate this facility to an area located off Beards Hill Road.

3. North Deen Park

   North Deen Park is a community park featuring active and passive leisure opportunities in a residentially developed area. Primary access to the park is from Old Post Road and the North Deen residential community. This park is the second largest park in Aberdeen and is improved with a baseball/softball field, a football/soccer/lacrosse field, an in-line hockey rink, seating, a tot lot, a skateboard facility, and a large parking lot. The park is 11 acres in area and is zoned R-3. The City of Aberdeen's Department of Public Works maintains this park. The Aberdeen Board of Parks and Recreation handles organization, sponsorship, and program coordination of the park.

4. Victory Street Park

   Victory Street Park is a neighborhood park located on Victory Street between Swan and Liberty Streets. Improvements include playground equipment, a pavilion with picnic tables and grills, and a basketball court. This park is 6.20 acres in area and is zoned R-3. The park features mature trees and plentiful on-street parking. The City of Aberdeen's Department of Public Works maintains this park. The Aberdeen Board of Parks and Recreation handles organization, sponsorship, and program coordination of the park.

5. Aberdeen Festival Park

   Aberdeen Festival Park is a beautifully landscaped community park offering opportunities for picnics, concerts, festivals, and open-air activities. The annual summer concert series and the annual Earth Day festival are held in this park. This park is located downtown on the west side of Howard Street between Centennial Lane, Franklin Street, and Parke Street with nearby on-street parking. Aberdeen Festival Park is improved with a pavilion, walking path, seating, restrooms, and a children's playground. Festival Park is zoned B-2 and is 2.16 acres in area. The City of Aberdeen's Department of Public Works maintains this park. The Aberdeen Board of Parks and Recreation handles organization, sponsorship, and program coordination of the park.

6. Twin Oaks

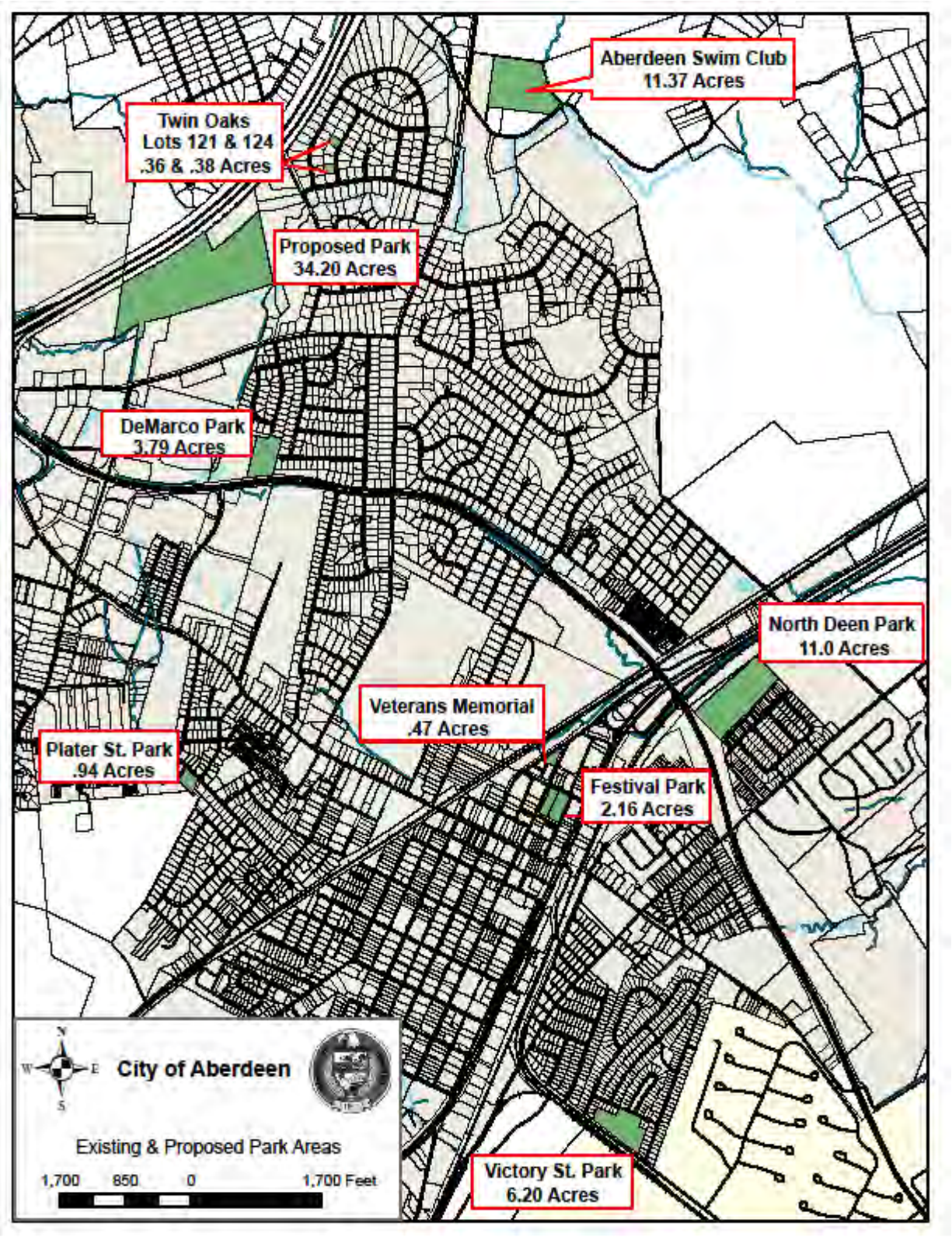
   Twin Oaks was purchased for neighborhood open space in the Maxa Woods subdivision located off Courtney Drive and Cronin Drive. The open space area consists of two residential lots, one of which features an historic oak tree that is estimated to be over 100 years old. Both lots are landscaped and can be used as picnic areas for the residential community. The City of Aberdeen's Department of Public Works maintains this area.

7. Veterans Memorial Park

   Veterans Memorial Park is traditionally used for Veterans Day activities. It is landscaped with azaleas and mature shade trees and is home to a field artillery piece. Veterans Memorial Park is zoned B-2 and is located immediately north of the intersection of North Rogers Street and North Parke Street. The park is approximately 0.47 acre in area and the City of Aberdeen's Department of Public Works maintains this park.

8. Aberdeen Family Swim Center

Aberdeen Family Swim Center is developed for recreation and leisure opportunities. It is owned by the City of Aberdeen. It features an Olympic size outdoor swimming pool, pavilion, picnic area, and restrooms. It is the largest park in the City at 11.37 acres. It is located off Paradise Road and Old Robin Hood Road and is 1 mile north of MD 22. A summer youth camp is available at this facility. The City of Aberdeen's Department of Public Works maintains the facilities.


Aberdeen Swim Club
11.37 Acres
Twin Oaks
Lots 121 & 124
.36 & .38 Acres
Proposed Park
34.20 Acres
DeMarco Park
3.79 Acres
North Deen Park
11.0 Acres
Veterans Memorial
.47 Acres
Plater St. Park
.94 Acres
Festival Park
2.16 Acres
Victory St. Park
6.20 Acres
N
W
E
S
City of Aberdeen
Existing & Proposed Park Areas
1,700 850 0 1,700 Feet

PROPOSED PARK PLAN

In the Aberdeen area, outdoor recreational opportunities are varied, but facilities are not extensive. As the City grows, areas that offer advantages as large open spaces should be preserved as part of the park system. Special recreation facilities can then be developed in accordance with a detailed park plan. Other areas would remain in a natural state.

The City of Aberdeen has developed and maintained a number of public parks and recreational facilities. With the anticipated growth of the City as stated in Chapter 3 – Municipal Growth Element, the demand for active and passive recreational areas will continue to increase.

The proposed park plan for Aberdeen is designed to guide new park and recreational opportunities and to stimulate interest in the existing recreational venues. In preparing the proposed park plan, existing parks, open space, and recreational opportunities have been evaluated to determine their viability and need for future improvements in order to assure their success. In order to provide the most current data for the proposed park plan, the 2005 Harford County Land Preservation, Parks, and Recreation Plan was used as a source of information.

Neighborhood Parks and Playgrounds

Within the City limits, neighborhood recreation needs can be met by making active use of school playgrounds as well as City managed parks. The school-park concept allows City residents to utilize the elementary, middle, and high school playgrounds and athletic fields for passive recreational opportunities. The Harford County Board of Education and the Harford County Department of Parks and Recreation have a joint use agreement for all of the school recreation facilities. Baseball diamonds, football/soccer fields, and tennis and basketball courts are an integral part of the Aberdeen recreation system.

In the future, neighborhood parks will be needed in new large-scale residential subdivisions and developers will be required to make adequate provisions for them. This can be accomplished through the preliminary site plan process and by requiring this through the Aberdeen Development Code

Community Parks

As residential growth in Aberdeen continues, the City will need to develop additional community parks. The City owns approximately 34.19 acres off Beards Hill Road, bounded by I-95 and Carsins Run. The proposed plan for this area in the northwestern part of the City includes athletic fields, nature trails, a community center, and associated parking lot. The City is currently working with the Harford County Department of Parks and Recreation and the State of Maryland’s Department of Natural Resources on this project.

Open Space and Greenways

The existing and planned community park areas should, where possible and practical, be incorporated into a greenways network. Walking and bicycle paths could eventually be provided which would meander through the City and form a visual border for our residential neighborhoods. Potential connections to a greenway network may be formed by Cranberry Run to the south and by Carsins Run and Swan Creek to the north.

Permanent greenways and open space fall into two major categories. The first categories include land in public or semi-public ownership, but not necessarily open to the public; the second category includes the remainder, controlled by other means.

The proposed greenway network would provide Aberdeen with a connection to the existing park system to be enjoyed not only by all age groups of the immediate community, but also by Harford County as a whole. The elements of the plan should not be expected to be accomplished immediately, but should evolve over time as development proposals are reviewed or as land becomes available. Civic groups, organizations, and individuals should be encouraged to participate in this plan by sponsoring, promoting, and administering the proposed greenway network.

Developers should be required to set aside open space areas for passive recreation for the community they are creating. This method of acquiring and creating open space and community parks is a recognized part of the development process, with the play area or park commonly maintained by a homeowner's association or deeded over to the City of Aberdeen.

In addition, the City should encourage future connections to the Lower Susquehanna Heritage Greenway (LSHG). The LSHG area is a walking trail through history that builds on tourism and preservation areas. The LSHG is projected to include 40 miles of trails, of which 22 miles are already developed. The LSHG has trails leading to Aberdeen but not throughout the City. It would also be beneficial for the City, where feasible, to explore future linkages with Aberdeen Proving Ground and the LSHG to promote our military history.

PUBLIC FACILITIES AND SERVICES

High quality public facilities and services are important because they support private investment in neighborhoods, help retain residents and businesses, and build community pride and improve the quality of life. An important factor in the City's ability to sustain long-term fiscal health will be the way in which it manages growth and re-development. Expanding the tax base without over-committing to expenses will help pay for the facilities and services that help renew the City and attract new residents and businesses.

Existing Conditions and Future Needs

The City of Aberdeen has well developed facilities to support all aspects of community services. This section reviews the existing status of each of these facilities. For the purposes of this chapter, the United States Post Office is also considered a public facility.

Public Offices and Administrative Facilities

Aberdeen's City Hall is located in the Municipal Center at 60 North Parke Street. The Municipal Center houses the City's administrative and finance offices, as well as the Police Department. The two wings of the building meet at a central lobby, with each wing also having a separate entrance. The Council Chamber, located off of the main lobby, is a 2,600 square-foot octagonal room. The City Administration wing totals 11,200 square feet of space, while the Police Department side encompasses 12,800 square feet. The Municipal Center opened in 2000.

Fire Protection

The Aberdeen Fire Department, Inc., is responsible for fire suppression and prevention, rescue services, and emergency medical services. Fire and rescue services in Aberdeen are provided by both volunteer firemen and paid emergency medical technicians.

The City of Aberdeen is served by three fire stations. The main fire station, located on Rogers Street, is centrally located in its service area and has ready access to major streets in all directions. In addition to the main fire station, the City also has two substations, one located on MD 22 (which has been recently rebuilt and expanded), and the other located on East Bel Air Avenue. There is also one substation located in Perryman that is owned and operated by the Aberdeen Fire Department, but not within the corporate limits of Aberdeen.

Police Protection

The City of Aberdeen's Police Department is the primary provider of police protection. Primary financing for the City Police Department is provided by City taxes, with additional support from County, State, and Federal sources. The Police Department currently employs forty-four sworn officers, full-time dispatchers, and clerical staff.

The City of Aberdeen has seen a constant pattern of growth in various areas over the past two decades. Statistics show that while the City's population grew 23% between 1980 and 2005, the number of officers did not keep pace with this growth. From 1995 to 2005, annexation expanded the City's geographic area by 576 acres and calls for service to the Aberdeen Police Department increased by 230%. During this same time period, the allocation for sworn officers remained static. The overall continuing increase in calls for service is reflective of activities taking place at our public schools and Ripken Stadium, combined with additional bank, business, and infrastructure security checks. A manpower assessment was completed in January 2009 resulting in a recommendation for patrol officer staffing at 42 sworn officers.

Department of Public Works

The Department of Public Works Maintenance Facility is located off Michaels Lane next to the Aberdeen Wastewater Treatment Facility. The office building is 11,000 square feet, with an additional 8,000 square foot covered storage area housing maintenance vehicles, equipment, and refuse trucks.

U.S. Post Office

The Aberdeen Post Office is located on West Bel Air Avenue. There are no current plans by the U.S. Postal Service to relocate or expand this facility.

Library

The Aberdeen branch of the Harford County Library is located on Franklin Street, across from the Aberdeen Municipal Center. The branch has meeting room space and public use computers equipped with Internet access and access to the library's catalog and on-line databases.

Aberdeen Senior Activity Center

The City of Aberdeen's Senior Activity Center is located at 7 Franklin Street. The building is 7,800 square feet in area. The Aberdeen Senior Activity Center offers a variety of programs for senior citizens that include day trips, crafts, cards, computers, dance, exercise, billiards, health and nutrition, music lessons, and fellowship. There is a growing need to expand the Senior Activity Center and possibly relocate the center to a larger community facility envisioned on City-owned land located off Beards Hill Road.

Harford County Boys' and Girls' Club

The Aberdeen unit of the Harford County Boys and Girls Club is located at 100 East Bel Air Avenue. The Boys and Girls Club is open to children ages five to seventeen. Their stated mission is "to enable all young people, especially those who need us most, to reach their full potential as productive, caring, responsible citizens."

Ripken Stadium

The Ripken Stadium is a 6,000-seat state-of-the-art minor league baseball facility, located off Long Drive and MD 22. The stadium opened in June 2002. The IronBirds enjoy sellout crowds for each of their 38 home games. The stadium features two pavilions with ample seating, concession stands, and entertainment for children.

Ripken Youth Baseball Academy

The Ripken Youth Baseball Academy is host to the Cal Ripken World Series. Cal Sr.'s Yard is a youth-sized version of Oriole Park at Camden Yards featuring a 3,500-seat stadium with concession stands and restroom facilities. The Academy also features additional youth fields used for instruction during the many camps held at this facility.

SCHOOLS AND CULTURAL FACILITIES

Aberdeen has three elementary schools, one middle school, and one high school. Harford County Government funds all of the public schools in Aberdeen. St. Joan of Arc Catholic School is our only parochial school, providing instruction for students from kindergarten through 8th grade.

Aberdeen High School, 251 Paradise Road, consists of 209,150 square feet located on an educational campus with Bakersfield Elementary School. There is 20 acres of outdoor activity area. An 18,350 square foot addition that includes 12 classrooms and 255 seats was completed in 2008. The 2009/10 enrollment for Aberdeen High School was 1,464, with a State Rated Capacity of 1,679. The Science and Mathematics Academy at Aberdeen High School (SMA) is a magnet school for all high school freshmen residing in Harford County and is located on the third floor of the school. In order to get into the SMA, one must apply in 8th grade, and only 50 students per school year are selected. It was the first magnet school within the Harford County Public School system, welcoming its first class of students in the fall of 2004.

Aberdeen Middle School, 111 Mt. Royal Avenue, consists of 196,800 square feet. The 2009/10 enrollment for Aberdeen Middle School was 1,095, with a State Rated Capacity of 1,444. Aberdeen Middle School was constructed in 1973. The school was renovated and an elevator installed in 1982. There is 17 acres of outdoor activity area.

Bakerfield Elementary School, 36 Baker Street, consists of 65,687 square feet. The 2009/10 enrollment for Bakerfield Elementary School was 438, with a State Rated Capacity of 455. Bakerfield Elementary School was constructed in 1961 and renovated in 1999. There is 8 acres of outdoor activity area.

George D. Lisby Elementary School at Hillsdale, 810 Edmund Street, consists of 56,295 square feet. The 2009/10 enrollment for George D. Lisby Elementary School was 316, with a State Rated Capacity of 432. The George D. Lisby Elementary School was constructed in 1968, and renovated in 1997. There is 15 acres of outdoor activity area.

Hall's Cross Roads Elementary School, 203 East Bel Air Avenue, consists of 63,082 square feet. The 2009/10 enrollment for Hall's Cross Roads Elementary School was 415, with a State Rated Capacity of 632. The Hall's Cross Roads Elementary School was constructed in 1943 and renovated in 1997. There is 9 acres of outdoor activity area that is currently being improved with new playground equipment, an active play area, and a walking trail.

Aberdeen Room Archives and Museum, Inc., 18 North Howard Street, was incorporated on February 25, 1991. Students, businesses, and organizations use the facility to conduct research for their projects, and open houses at the Museum are always a part of Aberdeen's many activities and celebrations.

HEALTH SERVICES

Aberdeen is served by Upper Chesapeake Health Center and the Harford Memorial Hospital. The Upper Chesapeake Health Center was opened in 2000 and is located off Maryland Route 24 in Bel Air. Harford Memorial Hospital is located in Havre de Grace.

Patient First, a primary and urgent care medical provider, recently opened at the corner of Beards Hill Road and Hospitality Way. Patient First offers prompt medical service with laboratory and x-ray facilities available on-site.

Aberdeen offers numerous medical, dental, and physical therapy services in the west end business district and downtown area.

Chapter 6 - MINERAL RESOURCES

Natural gravel deposits in Harford County are located generally along the Piedmont Region fall line, which passes through the Aberdeen area. Deposits in the Aberdeen vicinity occur out along Bel Air Avenue, west of Paradise Road, extending out to Carsins Run.

Past gravel extractions have taken place south and east of the MD 22/I-95 area. These sand and gravel reclamation sites have since been abandoned and residential and commercial uses have been successfully constructed on many of the former gravel pits.

For more information on non-coal surface mine locations in Harford County, you may refer to the Maryland Department of the Environment website at www.mde.state.md.us.

The City of Aberdeen does not foresee permitting mineral extraction activities in the future within the corporate boundaries or future planning areas that may be annexed.

Chapter 7 - SOLID WASTE PROGRAM

The City is not proposing any changes to the current Residential Waste Collection operations as described below. These services are planned to continue and expand into residential areas where growth occurs.

RESIDENTIAL WASTE COLLECTION

CITY OPERATION

The City has utilized three 25-yard rear load packer trucks for curbside collections since April 2004. Prior to 2004, solid waste collection was a contracted service.

TRASH COLLECTION

The City offers residents curbside collection of trash once per week. The City's residential areas are divided into 4 zones, with trash collection occurring Monday through Thursday each week. Residents are required to place a pre-paid trash sticker on their trash bag or container. Stickers may be obtained at 6 retail outlets in the City and at City Hall. The cost of the sticker is designed to cover the trash-tipping (dumping) fee that is charged by Harford County at its landfill or incinerator. The current charge is $50 per ton of trash. This "Pay as You Throw" system has been in place since 1993. Recyclables, bulk items, and yard waste are collected free of charge to the resident and therefore do not require placement of a sticker.

CURBSIDE RECYCLING

The City offers residents curbside collection of recyclables once per week in conjunction with regular trash collection. The City's residential areas are divided into 4 zones and recycling collection occurs Monday through Thursday each week, on the same day as trash collection. In September 2010, the City joined with Harford County in offering single stream recycling to its residents, allowing for a greater variety of items to be recycled and without the necessity of sorting paper and bottles into separate piles. Each residence has been given a 22-gallon green and a 22-gallon blue bin for storage of recyclables and collection each week. Residents may purchase more recycling bins as needed at City Hall.

ELECTRONICS

The City collects electronics (computers, monitors, TV, cell phones, etc.) during weekly curbside collection for all residents. Electronics contain hazardous metals, such as lead, that should be kept clear of the landfill and incinerator. The electronics are shipped to a reclamation facility. Residents are required to place a pre-paid trash sticker on electronic items except, for cell phones.

SCRAP METAL AND BULK ITEMS

Residents may call in for special curbside collection of metal items such as refrigerators, washers, dryers, and bicycles, as well as other bulk items such as sofas and mattresses. This service is free of charge. Appointments are set for each Friday for collection of these materials. The scrap metal is staged on City grounds in 30-yard roll-off containers. An outside contractor

then transports the containers to a recycling facility in Baltimore. Products with Freon based gases have the Freon removed prior to being recycled. Other bulk items are taken to the Harford County landfill.

YARD WASTE

The City offers residents curbside collection of yard waste, free of charge, 2 times per month from April through January. The City's residential areas are divided into 2 zones, with yard waste collection occurring the 1st and 3rd or 2nd and 4th Fridays, depending on location. The yard waste is taken to the Harford County composting facility.

OIL & ANTIFREEZE

The City of Aberdeen offers self-service drop off of used motor oil and antifreeze. The City of Aberdeen has consolidated its waste oil collection sites to one location at 361 Michael Lane. There are separate receptacles each for non-contaminated motor oil and anti-freeze. The containment area is under cover and is open to the public 24 hours a day.

ENVIRONMENTAL AWARENESS

In April of each year, the City hosts an Earth Day celebration at Festival Park in downtown Aberdeen. The groups involved have a dedicated interest in preserving our environment and passing the word on to others. The City and sponsors present the event to give participants entertaining and educational information on a variety of environmental topics. In 2010, the City had over 50 exhibitors that included groups interested in land preservation, Chesapeake Bay education, recycling, clean water, hazardous waste clean-up, composting, native plant gardening, environment-friendly products, wildlife care, and animal rights.

The City had 13 carnival-type games all made from recyclables and scrap. All of the 19 prize items awarded also had recycled content. One of the highlights the last 3 years has been the 30-foot high rock-climbing wall. Free Tie Dye has also been offered the last 5 years. Anyone bringing a cotton T-shirt or purchasing a recycled Earth Day logo T-shirt could tie-dye his or her shirt for free. Overall attendance at the 2010 Earth Day Festival was estimated at over 4,000.

Chapter 8 - SENSITIVE AREAS ELEMENT

OVERVIEW

The Economic Growth, Resource Protection, and Planning Act of 1992 requires local governments to adopt a "Sensitive Areas" element in the Comprehensive Plan to address specific environmental resources. The Act requires protection of the following four types of sensitive areas across the State: (1) streams and their buffers; (2) 100-year floodplains; (3) habitats of threatened and endangered species; and (4) topography and steep slopes. The Act also permits local governments to define each sensitive area and to determine levels of protection.

This chapter describes Aberdeen's approach to protecting eight distinct types of Sensitive Areas, defining each and justifying the level of protection for each: (1) streams and their buffers; (2) 100-year floodplains; (3) habitats for threatened and endangered species; (4) steep slopes; (5) forests; (6) hydrogeology; (7) critical areas; and (8) historical sites. Each sensitive area is justified to the extent that it is regulated by the City of Aberdeen.

STREAMS, WETLANDS, AND THEIR BUFFERS

Aberdeen and the future planning areas contain a network of tributaries, streams, and creeks that feed into the Chesapeake Bay. The streams and creeks located within Aberdeen and the future planning areas are Swan Creek, Carsins Run, Gashey's Creek, Cranberry Run, and Gray's Run.

Definitions

Streams are defined as any natural or man-made watercourse that conveys stormwater runoff and maintains a base flow for at least nine months of the year.

Stream buffers are defined by the State as areas that extend a minimum of twenty-five feet from the top of each stream bank along both sides of a stream.

Justification for Protection

Streams and their buffers are valuable to people and vital to our natural resources. Streams and their buffers are home to numerous species of animals and plants, and the streams themselves serve as lifelines to the Bay.

Buffers provide habitat for birds and other animals and can serve as good areas for hiking, hunting, and nature observation. Establishing natural buffer areas along tributaries to the Chesapeake Bay is one of the most important components of the Bay cleanup effort. Healthy buffers hold soils in place, can provide a refuge for threatened animals and plants, filter storm water runoff pollutants, hide predators and their prey, and keep streams shaded and cool. Stream buffers ideally include:

- Floodplains, where most streamside wetlands are formed and where energy dissipation, natural filtration, food storage, and water storage occur.

- Stream banks and steep slopes, which should remain intact to prevent erosion from clogging the stream bed and provide habitat for plants and animals.

- Stream side forests and other vegetation, which provide habitat, stabilize banks, provide shading, reduce pollutants, and produce leaf-litter supporting a host of microscopic shredders, filter feeders, and decomposers that form the base of a healthy stream food chain.

100-YEAR FLOODPLAINS

The Aberdeen Floodplain Management Ordinance was originally adopted in 1992 and, as a result of Federal Emergency Management Administration (FEMA) updates to the Flood Insurance Rate Maps (FIRM) and Floodway Maps, amended in 2000. The City regulates floodplain management and construction activity within designated floodplains. These provisions establish standards for new construction or substantial improvements to existing structures in accordance with FEMA guidelines, in order to prevent, as far as possible, damage to buildings and structures from flooding. For further information refer to the Code of the City of Aberdeen, Chapter 275, Floodplain Management.

Definition of a Floodplain

a. A relatively flat or low land area adjoining a river, stream, or watercourse that is subject to partial or complete inundation.
b. An area subject to the unusual and rapid accumulation or runoff of surface waters from any source.
c. An area subject to tidal surge or extreme tides.

Justification for Protection

The historical reasons for floodplain protection have been to guard against injury to people and to prevent the destruction of property. Undisturbed floodplains serve a variety of functions having important public purposes and benefits.

Floodplains moderate storm floodwaters, absorb wave energies, and reduce erosion and sedimentation. Wetlands found within floodplains help maintain water quality, recharge groundwater, protect fisheries, and provide habitat and natural corridors for wildlife. Stream buffers found within floodplains also help to maintain water quality.

Safeguarding the many natural functions performed by the floodplains benefits adjoining and downstream communities by minimizing the risks (and costs) associated with the loss of life and

property; by contributing to the maintenance of water quality and quantity which may directly affect drinking water supplies and recreation opportunities; and, in many cases, by helping to restore the health of the Chesapeake Bay.

Mapping of the Floodplain

Copies of the adopted Flood Insurance Rate Map for Aberdeen may be viewed at City Hall.

HABITATS OF THREATENED AND ENDANGERED SPECIES

Definition

An area that, due to its physical or biological features, provides important elements for the maintenance, expansion, and long-term survival of threatened and endangered species listed in the Code of Maryland Regulations (COMAR). This area may include breeding, feeding, resting, migratory, or overwintering areas. Physical or biological features include (but are not limited to): structure and composition of the vegetation; faunal community; soils, water chemistry and quality; and geologic, hydrologic, and microclimatic factors. This area may need special management or protection because of its importance to conservation of the threatened or endangered species.

Justification for Protection

The Wildlife and Heritage Service of the Maryland Department of Natural Resources tracks the status of over 1,100 native plants and animals that are among the most rare in Maryland. The State law that regulates the listing of endangered species is the Nongame and Endangered Species Conservation Act (Annotated Code of Maryland 10-2A-01). This Act is supported by regulations (COMAR 08.03.08) that include the official list of State Threatened and Endangered Species. The City will pursue all efforts to protect habitats of threatened and endangered species.

TOPOGRAPHY/STEEP SLOPES

Definitions

Topography is defined as the slope gradient of a site expressed as a relationship of vertical feet of elevation over horizontal feet of distance (rise over run) as well as the visual lay of the land. Topography has specific implications for site development. It controls the location of roads, buildings, and utilities. Topography also affects the overall visual character of the site.

Steep slopes are defined as areas with slopes greater than 25%.

Justification for Protection

Slopes provide an environment for movement of soil and pollutants when land disturbance occurs. While soils have varying degrees of erodibility, all are nonetheless subject to movement, and increasingly so as the slope of the land increases.

Preservation of steep slopes adjacent to watercourses is especially important because of the potential harm to water quality and aquatic habitat. The identification and protection of steep slopes within an area helps to protect both the immediate and downstream communities from these hazards.

AGRICULTURAL AND FOREST LANDS INTENDED FOR RESOURCE PROTECTION OR CONSERVATION

Definition

Agriculture is defined as all methods of production and management of livestock, crops, vegetation, and soil. It also includes the activities of feeding, housing, and maintaining of animals such as cattle, dairy cows, sheep, goats, hogs, horses, and poultry.

A forest is a biological community dominated by trees and other woody plants covering a land area of 10,000 square feet or greater. A forest includes areas that have at least one hundred live trees per acre, with at least 50% of those trees having a two-inch or greater diameter at 4.5 feet above the ground. A forest also includes areas that have been cut but not cleared. A forest does not include orchards.

Justification for Protection

In the late 1970s, Harford County began its preservation efforts through programs offered by the Maryland Environmental Trust and the Maryland Historic Trust. In 1982, Harford County began its first agricultural preservation program with the Maryland Agricultural Land Preservation Foundation. In addition, Harford County continues to protect agricultural lands utilizing the Rural Legacy Program and Forest Legacy Program and recently developed a Priority Preservation Area Plan. The City recognizes Harford County's efforts and will work closely to support them on preserving those properties that are designated as a Priority Preservation Area.

The Forest Conservation Act became effective July 1, 1991 and applies to all tracts of land proposed for development and measuring 40,000 square feet or more. Permit requirements under the Act took effect in Aberdeen on February 1, 1993 (Ordinance Number 405-92). Mitigation is required as part of the Aberdeen Forest Conservation Ordinance. For further information refer to the Code of the City of Aberdeen, Chapter 280, Forest Conservation.

HYDROGEOLOGY

Justification for Protection

In 2009, the City of Aberdeen's water supply system served a population of over 14,000 and has over 4,800 connections. The water is currently supplied by 13 wells and supplemented by additional purchases of bulk water from Harford County. In 2000, the City entered into an agreement with the U.S. Army to own and maintain the Chapel Hill Surface Water Treatment Plant. For further information on the City's water supply system refer to Chapter 10 – Water Resource Element.

Aberdeen's 13 wells draw water from the Talbot Formation, which is part of the Coastal Plain sediments of Harford County. The Talbot Formation is within the Quaternary System and functions as an unconfined aquifer in this area. It consists of shallow silt and clay facies, and a deeper gravelly sand facies, interbedded with dark clay layers. The lithology of the Coastal Plain sediments in Harford County is extremely variable and aquifer boundaries do not coincide with formation boundaries.

Aberdeen's wells draw water from an unconfined aquifer. In general, water supplies in unconfined aquifers are susceptible to contamination from land use activities. Therefore, continued routine monitoring of contaminants is essential in assuring a future supply of safe and healthful drinking water.

The City adopted a Wellhead Protection Overlay District and Wellhead Protection Ordinance in 2004, the purpose of which is to protect the groundwater resources of the community public water supply. The designation of the Wellhead Protection Overlay District regulates the permitted and prohibited activities within the district and reduces the potential for groundwater contamination. For further information refer to the Code of the City of Aberdeen, Chapter 524, Wellhead Protection.

CRITICAL AREA

Definition

An area within 1,000 feet of tidal waters and tidal wetlands and any additional areas that are deemed necessary to carry out the Chesapeake Bay Critical Area Act and the Chesapeake Bay Critical Area Program.

Justification for Protection

The State of Maryland has recognized the Chesapeake Bay as an estuarine system of significant importance and has enacted the Chesapeake Bay Critical Area Act and the Chesapeake Bay Critical Area Program. The City has within its corporate limits 92 acres located in a critical area. These lands are within 1,000 feet of tidal waters and the City is required by the Critical Area Commission to have a Critical Area Program. For further information refer to City Resolution No. 09-R-01 implementing the Chesapeake Bay Critical Area Program.

HISTORICAL SITES

Definition

An historic site shall mean the location of an event of historic significance or a structure, whether standing or ruined, which possesses historic, architectural, archeological, or cultural significance.

Justification for Protection

The Aberdeen Heritage Trust was created by a Resolution of the Aberdeen City Council on April 3, 1998. The City of Aberdeen has 57 structures on the Maryland Inventory of Historic Properties. Two of these structures are also on the National Register of Historic Places. The mission of the Aberdeen Heritage Trust is to safeguard the heritage of the City of Aberdeen, by preserving sites, structures and districts that have historical significance, and to promote preservation and appreciation of these sites, structures, and districts for the education of our community.

The structures/sites listed below are on the Maryland Inventory of Historic Properties:

9 E. Bel Air Avenue
27 E. Bel Air Avenue
31 E. Bel Air Avenue
41 E. Bel Air Avenue
45 E. Bel Air Avenue
201 E. Bel Air Avenue
11 W. Bel Air Avenue
115 W. Bel Air Avenue
200 W. Bel Air Avenue
202 W. Bel Air Avenue
302 W. Bel Air Avenue
B&O Railroad Station, 408 W. Bel Air Avenue
James B. Baker House, 452 W. Bel Air Avenue, circa 1890 (National Register of Historic Places)
468 W. Bel Air Avenue
502 W. Bel Air Avenue
508 W. Bel Air Avenue
514 W. Bel Air Avenue
602 W. Bel Air Avenue
603 W. Bel Air Avenue
610 W. Bel Air Avenue
614 W. Bel Air Avenue
617 W. Bel Air Avenue
619 W. Bel Air Avenue
623 W. Bel Air Avenue
626 W. Bel Air Avenue
627 W. Bel Air Avenue
631 W. Bel Air Avenue
644 W. Bel Air Avenue
653 W. Bel Air Avenue
658 W. Bel Air Avenue
671 W. Bel Air Avenue
681 W. Bel Air Avenue
684 W. Bel Air Avenue
685 W. Bel Air Avenue
210 Edmund Street
7 Holloway Lane
210 S. Law Street
211 S. Law Street
214 S. Law Street
17 Market Street
510 Maxa Road
700 Maxa Road
125 Mount Royal Avenue
214 Paradise Road
252 Paradise Road
269 Paradise Road
271 Paradise Road
471 Paradise Road
485 Paradise Road
493 Paradise Road
1 S. Parke Street
3 S. Parke Street
Poplar Hill, 115 Poplar Hill Road, circa 1749 (National Register of Historic Places)
Grove Cemetery, 95 Post Road
318 Roberts Way
Roberts' Way Cemetery, 345 Roberts Way
12 S. Rogers Street
16 S. Rogers Street

Chapter 9 - HOUSING ELEMENT

The Department of Planning and Community Development completed a Neighborhood Needs Assessment in 2009. The purpose of the assessment was to identify the average age of dwellings, condition of dwellings, property maintenance issues, and parks and recreation opportunities in residential developments. The assessment did not take into consideration apartment complexes or mobile home parks. The City's neighborhoods were divided into eight (8) sectors: Eastern Sector (north and south), Western Sector (north and south), Historic Sector (north and South), and the Central Sector (north and South). The Assessment found that the City offers a variety of housing types and unique architectural styles and that the City's housing stock ranges in age from over 100 years old to new construction.

The City has worked with Harford Habitat for Humanity since 1995 in identifying opportunities for re-development, and has provided assistance in the form of incentives for their re-development efforts. Harford Habitat for Humanity has constructed new single-family dwellings on Baltimore Street, Baltimore Street extended, Darlington Avenue, Elmhurst Street, First Street, Holloway Lane, Moyer Drive, Post Road, Schmechel Street, Schofield Road, Second Street, Third Street, Warren Street, and Washington Street.

Each year, Harford County receives Federal grant funding from the U.S. Department of Housing and Urban Development (HUD) to address housing and community development needs in the County. As part of the requirements for receiving these funds, Harford County must submit a Consolidated Five-Year Plan to HUD. The Consolidated Plan incorporates citizen participation to identify community needs and lays out Harford County's Strategic Plan to address those needs. The current Harford County Consolidated Plan was written to address the five-year period covering fiscal years 2008 through 2012.

In addition to the Consolidated Plan, Harford County produces two additional related reports each year. The Annual Action Plan, distributed each spring, outlines goals for the coming year. The Consolidated Annual Performance and Evaluation Report (CAPER) provide an assessment of program performance and accomplishments by Harford County in the use of its HUD housing and community development entitlement funds during the previous year.

The City receives an annual allocation of Community Development Block Grant (CDBG) funds from Harford County Government. The City has previously used CDBG funds to conduct feasibility and planning studies for public infrastructure improvements, perform road maintenance in low and moderate income communities, and to construct the Boys and Girls Club facility, a skateboard park, and the Senior Citizens Center.

The Harford County Consolidated Plan for fiscal years 2008 to 2012 has progressed in meeting the Affordable Housing goal listed below:

> Affordable Housing – The objective is decent affordable housing and the anticipated outcome is affordability and availability/accessibility through:

- Preservation and rehabilitation of existing housing stock
- Homeownership assistance
- Expansion of affordable rental housing
- Continued support of the County's public and assisted housing programs
- Affirmatively furthering fair housing on a regional level through various County programs

The City and Harford County Government are working with The Shelter Group to construct Winston's Choice, a 22-unit townhouse development to be marketed for workforce housing.

Chapter 2 – Land Use Element further addresses housing needs in the Goals and Objectives section.

Chapter 10 - WATER RESOURCES ELEMENT

INTRODUCTION

In 2006, the Maryland Legislature Session, House Bill 1141 was enacted which required all counties and municipalities to examine their water resources when planning for future growth. The Water Resources Element requires municipalities to perform an analysis of a) potable water systems including supply, treatment, storage, and distribution; b) wastewater systems including collection, treatment, and disposal; and c) stormwater management including point and non-point source loadings. When looking at future growth needs, the City of Aberdeen must address any shortcomings through modifying future land use patterns to eliminate problem areas or provide specific solutions to address any limitations. This chapter, "Water Resources Element", was prepared by Davis, Bowen, and Friedel, Inc., for and with the cooperation of the City of Aberdeen.

The following section examines the City of Aberdeen's existing water resources in conjunction with its current development and planning for future growth. Where necessary, improvements and alternatives to solve any water resource problems are discussed. This section is based on a twenty (20) year planning period with updates every six (6) years.

The City of Aberdeen and Harford County Government has ongoing inter-jurisdictional coordination and cooperation by serving areas outside their jurisdictions on agreed terms and conditions. The City of Aberdeen and Harford County have entered into a Water Service Purchase Contract, also known as the "Bulk Water Agreement", in June of 1995 wherein Harford County has agreed to provide potable water for purchase by the City of Aberdeen. Recently, the agreement was amended for the 6th time in October of 2009 to provide a maximum of 0.9 million gallons per day (MGD) to the City of Aberdeen to serve BRAC related commercial and industrial development within the corporate limits of the City of Aberdeen. An additional 0.6 MGD is anticipated to be available for purchase from the County contingent upon an agreement between the City of Baltimore and Harford County and the City paying a capital charge by June 30, 2011; this could provide a maximum of 1.5 MGD available to the City. The City of Aberdeen may purchase an additional 1.1 MGD of potable water from Harford County in the future, should the City deem in necessary and the County has available capacity to sell; this would be handled through a future amendment to the Bulk Water Agreement.

WATER OVERVIEW:

The City of Aberdeen provides water to through the use of groundwater wells, treatment facility, storage tanks, and various sized distribution lines and booster stations. Currently the City of Aberdeen has a Water Appropriation and Use Permit (WAUP) for its community water system which allows for withdrawal an average of 1.5 MGD on an annual basis and up to 2.0 MGD during the month of maximum use from its sixteen (16) wells. The City of Aberdeen also operates a water treatment facility with a capacity to treat 3.0 MGD of groundwater by disinfecting (chlorine), fluoridation, degasification (forced aeration towers), and pH adjustment

(soda ash). The City of Aberdeen's distribution system is separated into three (3) distinct systems which are operated simultaneously. In conjunction with the distribution system, the City of Aberdeen utilizes three (3) 250,000 gallon storage tanks and one (1) 440,000 gallon storage tank. In general, the City of Aberdeen can provide an average of 1.5 MGD of water from the municipal wells and 0.6 MGD of bulk water from Harford County for a total of 2.1 MGD on an average day. The City of Aberdeen has a maximum daily capacity of 2.0 MGD from municipal wells and 0.9 MGD of bulk water from Harford County for a total of 2.9 MGD. City of Aberdeen current average water demand is 1.485 MGD.

WASTEWATER OVERVIEW:

The City of Aberdeen wastewater system consists of various sized sanitary sewers and pumping stations which collects the City of Aberdeen's wastewater. The wastewater is ultimately received at the City of Aberdeen's Advanced Wastewater Treatment Plant (AWWTP). The AWWTP has a current and permitted capacity of 4.0 MGD with a peak flow capacity of 6.0 MGD. It is currently being upgraded to Enhanced Nutrient Removal (ENR) with an anticipated construction completion date of 2012. This upgrade will not increase the AWWTP's capacity but will improve the treatment process which will allow the City of Aberdeen to remove nutrients such as nitrogen and phosphorus and assist in the initiative to clean up the Chesapeake Bay. The AWWTP currently experiences average sewage flows of 2.23 MGD. Note that the limiting factor for growth within the City of Aberdeen is wastewater treatment capacity due to required nutrient loads that must be met at the AWWTP.

GROWTH PROJECTIONS

The City of Aberdeen has designated seventeen (17) planning areas, including the City of Aberdeen and Aberdeen Proving Ground (APG)[1], leaving 15 planning areas as future growth areas for a total of 8,283.11 acres. These growth areas will be served by public water and sewer either by the City of Aberdeen or by Harford County. Map 10-1: Water Service Areas and Map 10-2: Wastewater Service Areas indicate the Water and Sewer service areas per Harford County's Water and Sewer Master Plan adopted in April of 2010. Future Planning Areas: Bush Chapel, excluding 300 EDUs that are part of the Bosworth and Cornblatt annexations and will be served by the City of Aberdeen; Stepney; and Old Philadelphia would be served by Harford County while Swan Creek, Mullins, Oakington, Pulaski, and Long/Heat would be served by the City of Aberdeen. Future Planning Areas: Barkess, Titan Terrace, Paradise, and Old Robinhood, would be served with both water and sewer by the City of Aberdeen using the water purchased from Harford County through the Bulk Water service agreement. Future Planning Areas: Aldino-Stepney, Gilbert, and Gray are currently mapped as "no planned" service based on the current Harford County Water and Sewer Master Plan. Future Planning Area 17 - Aberdeen Proving Ground is currently served by a separate water and wastewater district, although the treatment plants are operated by the City of Aberdeen. Aberdeen Proving Ground (APG) is not included in the Water and Sewer capacity calculations that are part of Water Resource Element. As part of this comprehensive plan, it is recommended that the City of Aberdeen work with

[1]Future Growth Area Aberdeen Proving Ground (APG) is not included in accessing the impacts on the City's Water resources, Wastewater capacity, or Stormwater runoff; this area is a separate district.

Harford County to designate the "no-planned" service areas (Aldino-Stepney and Gilbert) as "planned service" areas which will be served by the City of Aberdeen.
The City of Aberdeen will be planning infrastructure extensions to the growth areas based on the phasing of the growth areas as described in the Municipal Growth Element. The ultimate build-out and planned growth for all growth scenarios are discussed on page 10-17 of the Water Resource Element.

Excluding existing development within the growth areas, when completely developed, a potential of 34,554 equivalent dwelling units (EDUs)[2] (see Scenario 1 in Table 10-1: Growth Area Summary) is possible of which 30,697 EDUs will be served by the City of Aberdeen and 3,857 EDUs will be served by Harford County. To support this development existing, and infill, based on the average day demand of 250 gallons per day (gpd) per EDU, the City of Aberdeen would need an additional 8.381 MGD of water (10.481 MGD total – 2.1 MGD existing = 8.381 MGD) and 6.481 MGD of wastewater capacity (10.481 MGD total – 4.0 MGD existing = 6.481 MGD). Based on peak day demands, the City will need an additional 13.765 MGD (16.665 MGD total peak – 2.9 MGD existing = 13.765 MGD) of water capacity and 35.9 MGD (41.9 MGD total peak – 6 MGD existing = 35.9 MGD) of wastewater capacity. Currently, the City of Aberdeen has a capacity to withdrawal a maximum of 2.0 MGD from existing wells; treat 3.0 MGD at the water treatment plant along with purchasing maximum of 0.9 MGD of potable water per an agreement currently in place with Harford County. The City of Aberdeen's National Pollutant Discharge Elimination System (NPDES) permit for its Advanced Wastewater Treatment Plant (AWWTP) allows for an average discharge of only 4.0 MGD with a peak capacity of 6.0 MGD.

2 Equivalent Dwelling Unit (EDU) is a measure where one unit is equivalent to water demand or wastewater effluent from one home, which is 250 gallons per day per home (1 EDU = 250 gallons per day). This amount is based on most textbooks and resources estimating an average of 100 gallons of water/wastewater per person and based on the national average home occupancy of 2.5 persons per home.

Table 10-1: Growth Area Summary

Growth Areas	Area	Scenario 1 Ultimate Build out [1]	Scenario 2 City's Planned Growth[2]	Served by[3]
	Acres	EDU	EDU	
Planning Area 1 - Swan Creek[4]	365.44	1,815	300	City Water and Sewer
Planning Area 2 - Mullins[4]	443.43	1,186	0[7]	City Water and Sewer
Planning Area 3 - Oakington[4]	883.88	1,375	0[7]	City Water and Sewer
Planning Area 4 - Pulaski[4]	218.34	738	240	City Sewer/ Bulk Water
Planning Area 5 - Barkess[4,8]	497.85	1,808	1,011	City Sewer/ Bulk Water
Planning Area 6 - Titan Terrace[4,7]	292.64	142	223	City Sewer/ Bulk Water
Planning Area 7 - Old Robinhood[4,7]	515.11	2,665	300	City Sewer/ Bulk Water
Planning Area 8 - Paradise[4,8]	262.59	756	919	City Water and Sewer
Planning Area 9 - Aldino-Stepney[6]	849.53	4,418	2,973	Mapped No Planned Service
Planning Area 10 - Gilbert[6]	564.53	2,467	2,104	Mapped No Planned Service
Planning Area 11 - Long / Heat[4]	294.85	339	400	City Water and Sewer
Planning Area 12 - Grays[6]	838.28	4,359	0[7]	City Water and Sewer
Planning Area 13 - Bush Chapel[5][9]	127.65	300[9]	300[9]	City Water and Sewer
	521.81	3,857[5]	1973[5]	County Water and Sewer
Planning Area 14 – Stepney[5]	552.75	2,653	0[7]	County Water and Sewer
Planning Area 15 - Old Philadelphia[5]	1054.43	5,676	0[7]	County Water and Sewer
Future Growth Areas	8283.11	34,554	10,743	Total EDU's
		30,697	8,770	EDU's served by City
Planning Area 16 – City of Aberdeen Infill + Existing[4]	4,144	11,230	11,230	City Water and Sewer
Planning Area 17 – APG*[6]	72,518	0	0	
EDUs	84,945.11	45,784	21,973	Total EDU's
		41,927	20,000	EDUs served by City
Water demand/ sewer flows (GPD)[10]		11,446,000	5,493,250	Total demand
		10,481,750	5,000,000	Total City demand

Source: City of Aberdeen

(1)Ultimate build out of growth areas, not including the existing development with higher density to support smart growth principals but includes the existing development within the Planning Area 16 – City of Aberdeen.
(2)Proposed EDU's with restricted densities, not including the existing development in the growth areas. Existing development services will be determined on a case by case basis and will be incorporated into the existing infill EDUs if necessary.
(3)Jurisdiction serving the growth area as mapped by Harford County Water and Sewer Master Plan and illustrated on Map 10-1: Water Service Area and Map 10-2: Wastewater Service Area.
(4) Identified in the City DPW growth areas.
(5) Identified to be provided by Harford County water and wastewater.
(6) Areas mapped as "No Planned Service" in the Harford County Water and Sewer Master Plan but City intend to serve.
(7) Proposed EDU's for these growth areas is zero. Infrastructure extension to these areas is not expected in the near future.
(8) Areas served by the City using the Bulk Water received from the County through agreement recently amended in October of 2009.
(9) Planning Area 13 accounts for the Bosworth & Cornblatt annexations for a total of 300 EDUs which will be served by the City. The remaining EDUs served by the County are not included in the Water and Sewer capacity calculations but are included in the Stormwater runoff calculations that are part of Water Resource Element.
(10) New water and sewer demand was determined by 250 gpd/EDU.

* Aberdeen Proving Ground (APG) is included as Planning Area 17 but this area is not included in the Water and Sewer capacity calculations or Stormwater runoff calculations that are part of Water Resource Element.

However, the City of Aberdeen is only planning for a potential of 10,743 EDU's in its growth areas (see Scenario 2 in Table 10-1: Growth Area Summary), of which 8,770 EDUs will be served by the City of Aberdeen and 1,973 EDUs will be served by Harford County and therefore this Water Resource Element evaluates only the City's demand, capacity and limitations based on 8,770 EDU's. The City of Aberdeen's existing and infill development and its planned growth areas, with 20,000 EDU's (11,230 EDU's existing and infill, and 8,770 EDU's in growth areas), will result in average daily water usage of 5.0 MGD, of which 2.901 MGD of new demand will be served by the City of Aberdeen, 0.613 MGD of new demand will be served by the City of Aberdeen using the bulk water purchased from the Harford County; note that 0.493 MGD (water for 1,973 EDUs in the Bush Chapel area) of new demand will be served by Harford County; see Table -2 and detailed water calculations found later in the appendix. Currently the City of Aberdeen's average water demand is at 70.7% of its capacity (total well production + County bulk water) and will exceed its capacity with the planned growth based on Scenario 2, the City's chosen growth scenario. The water usage for the City of Aberdeen reaches 80% of its capacity with an additional 780 EDUs. At such point, and as recommended by MDE, the City of Aberdeen should complete a Water Capacity Management Plan and begin planning for additional potable water to meet increasing demand. Such options could include, but not limited to, increasing purchase of water from the Harford County or use of surface water. The City of Aberdeen can provide an average of 1.5 MGD of water and utilize 0.6 MGD bulk water from Harford County with an average safe yield capacity of 2.1 MGD of water; however this is not adequate for the required 5.0 MGD based on the chosen growth scenario, Scenario 2.

A potential increase of 3.156 MGD in wastewater flows would be realized under the planned 8,770 EDU's growth scenario as well. The City of Aberdeen and its growth areas will result in an average wastewater flow of 5.0 MGD, of which will be served by the Aberdeen AWWTP; note that 0.493 MGD (wastewater from 1,973 EDUs in the Bush Chapel area) will be served by Harford County; see Table -3 and detailed water calculations found later in the appendix. Currently the AWWTP is operating at 46.1% of its capacity. As the AWWTP reaches 80% of its capacity, and as recommended by MDE, the City should complete a Wastewater Capacity Management Plan and begin the planning process to increase its capacity to the required 5.0 MGD; an additional 5,424 EDU's will put the existing AWWTP at 80% capacity or 3.2 MGD. Possible options could include a capacity upgrade of the existing AWWTP, process modifications of the existing AWWTP that will further enhance the treatment and further reduce the nutrients which may subsequently increase permitted capacity, investigate alternate disposal methods such as spray irrigation, and/or investigate obtaining nutrient credits for additional capacity by connecting existing onsite sewage disposal systems to the City's AWWTP, wetland restoration, water reuse, oyster banking, algal farming.

WATER RESOURCES

Groundwater Sources

The City of Aberdeen's groundwater is harvested from the Talbot Formation which is part of Coastal Plain sediment of Harford County. The Talbot Formation is within the Quaternary System and functions as an unconfined aquifer in this area. The aquifer consists of shallow silt and clay facies and a deeper gravelly sand facies interbedded with dark clays. The lithology of the Coastal Plain sediments in Harford County is extremely variable and aquifer boundaries do not coincide with formation boundaries.

The City of Aberdeen currently uses sixteen (16) wells within the community water system to supply water to the public water distribution system. These wells draw water from the Quaternary aquifer. In general, water supplies in unconfined aquifers are susceptible to contamination from land use activities. Therefore, continued routine monitoring of contamination is essential in assuring a future supply of safe and healthful drinking water. When the City of Aberdeen published the "Annual Drinking Water Quality Report" for 2009, the report stated there were no violations of Environmental Protection Agency's (EPA) Maximum Contaminant Levels (MCL).

Private Wells

It is estimated that there are six (6) private wells within the City of Aberdeen that are in use. The City has no plans on connecting these properties to the City distribution system at this time however will be willing to should these wells fail and/or the property owners request to connect.

The City of Aberdeen adopted a Wellhead Protection Ordinance in September 2004. It is recommended that the City of Aberdeen periodically review the Wellhead Protection Plan to ensure potential source water contamination causes are being avoided as well as monitoring of water quality in the supply wells as necessary although there are no water quality issues at this time. The City of Aberdeen is reviewing the Wellhead Protection Ordinance and Zone Area maps and will be updating this to incorporate the Harford County wellhead Protection Area for the Perryman well field as well.

The purpose of the Wellhead Protection Plan as described in the City's Wellhead Protection Ordinance is to:

- Delineate the area contributing water to the source.
- Provide an overview of the susceptibility of the source to contaminants.
- Identify actual and potential sources of contamination within the contributing area.
- Provide a management plan to address activities and properties that threaten the source.
- Provide monitoring practices that will provide early warning of impending problems.
- Provide a contingency plan to address threats and maintain the water supply quality.
- Educate the public on the need to protect the source.

Surface Water Sources

The City of Aberdeen also receives water from Harford County which has contractual relationship for a temporary water purchase from the City of Havre de Grace. Harford County also owns and operates a treatment plant in City of Havre de Grace. Water supply to the City of Havre de Grace Water treatment plant and the County's City of Havre de Grace Treatment plant both come from the Susquehanna River, however, they have two different treatment processes. An agreement, as amended in October of 2009 between the City of Aberdeen and Harford County, allows for the purchase of up to 0.9 MGD of potable water on a peak day from the County system.

Well Production

Based on the City of Aberdeen's well production data from January 2005 through December 2009, the average daily well production was approximately 1.191 MGD. Wells #1 through #6, #11, #12, and #15 are located east of the Amtrak railway at the southeastern boundary of the City limits, and Wells #7 through #10 are located on the west side of Gadsden Road, Aberdeen Proving Ground. All wells combined have a maximum capacity of approximately 3.061 MGD which exceeds the permitted average and maximum month average day limit. Assuming the largest well is out of service, a safe yield capacity of 2.571 MGD can be realized. For planning purposes, the month of maximum use (July) is used to determine the well capacity required. In July 2009, the wells produced an average of approximately 1.214 MGD.

Accounting for infill and lots that have either been approved or are pending approval, the City of Aberdeen is currently reserving capacity for 945 EDUs which equates to 0.236 MGD. The City of Aberdeen is planning for 5,290 EDUs, including the 945 EDUs in reserve, within the current incorporated boundary and for the existing homes within the planning areas[3] for a total additional water demand of 1.322 MGD. As previously stated, all growth areas, when completely developed, have a development potential of 34,554 EDU's. However, the City of Aberdeen is only planning for a potential of 8,770 EDUs in its growth areas. The City of Aberdeen can expect an increase of 4.008 MGD for a future average daily water demand and 6.373 MGD peak water demand for the projected growth in all growth areas including infill.

Of the total 5.00MGD average day future demand, 0.613 MGD comes from areas that are to be served under the Bulk Water agreement with Harford County, and 1.269 MGD comes from an area that is mapped as "no planned service" per the Harford County Master Plan for Water and Sewer. Only 1.632 MGD of future average demand and 2.595 MGD of future peak demand is slated for areas that are mapped to be served by the City of Aberdeen.

Based on the Table 10-2, areas to be served by the City of Aberdeen, including bulk water areas, result in an average day demand of 5.00 MGD with a peak demand of 7.950 MGD. The City of Aberdeen wells are only permitted to withdrawal an average day of 1.50 MGD with a maximum month average of 2.0 MGD, however with the largest well out of service; the wells are capable of withdrawing 2.572 MGD. Taking into account the maximum allowable water related to the

[3] Connecting existing users to into the City of Aberdeen system will be evaluated on case by case and will utilize the infill allocations.

bulk water agreement, 0.9 MGD, and maximum permitted withdrawal, 2.0 MGD, the City of Aberdeen's total peak water capacity equates to 2.90 MGD; this results in a deficit of 5.050 MGD or 16,160 EDU's. The City of Aberdeen would require additional well capacity of 3,507 GPM (gallons per minute), purchase of additional bulk water from Harford County to meet the projected future demand, and/or additional surface water of their own.

As stated earlier, current City's average day water demand is at 70.7% of its capacity (total well production + County bulk water) and will reach 80% of its capacity by adding 780 EDU's to their current demand. Based on the historical growth rate of 2% per annum, City's average day water demand will reach 80% of its available water resources around the year 2015. Based on the same growth assumptions, City of Aberdeen's average day water demand will reach 100% of its available water resources around the year 2025 or by adding 2,460 EDU's.

The City of Aberdeen has explored supplementing its water supply through the addition of groundwater wells in the area adjacent to the Department of Public Works building. This effort was abandoned when the hydrogeoloist identified significant potential for contamination in the recharge area.

Table 10-2: Water Demand for the City of Aberdeen and Proposed Growth Areas

Location		EDU	City[4]		No Planned Service[6]		County[5]		Bulk Water [9]		City +No Planned Service + Bulk		Total	
			A.D[1] (gpd)	P D[2] (gpd)	A.D[1] (gpd)	P.D[2] (gpd)	A.D[1] (gpd)	P.D[2] (gpd)	A.D[1] (gpd)	P.D[2] (gpd)	A.D[1] (gpd)	P.D[2] (gpd)	A.D[1] (gpd)	P.D[2] (gpd)
Area 16: City of Aberdeen	Existing[3]	5,940	1,485,000	2,361,150	0	0	0	0	0	0	1,485,000	2,361,150	1,485,000	2,361,150
	Infill	5,290	1,322,500	2,102,775	0	0	0	0	0	0	1,322,500	2,102,775	1,322,500	2,102,775
Area 1 - Swan Creek[4]		300	75,000	119,250	0	0	0	0	0	0	75,000	119,250	75,000	119,250
Area 2 - Mullins[4,7]		0	0	0	0	0	0	0	0	0	0	0	0	0
Area 3 - Oakington[4,7]		0	0	0	0	0	0	0	0	0	0	0	0	0
Area 4 - Pulaski[4]		240	60,000	95,400	0	0	0	0	0	0	60,000	95,400	60,000	95,400
Area 5 – Barkess[4,9]		1,011	0	0	0	0	0	0	252,750	401,873	252,750	401,873	252,750	401,873
Area 6 - Titan Terrace[4,9]		223	0	0	0	0	0	0	55,750	88,643	55,750	88,643	55,750	88,643
Area 7 - Old Robinhood[4,9]		300	0	0	0	0	0	0	75,000	119,250	75,000	119,250	75,000	119,250
Area 8 - Paradise[4,9]		919	0	0	0	0	0	0	229,750	365,303	229,750	365,303	229,750	365,303
Area 9 - Aldino-Stepney[6]		2,973	0	0	743,250	1,181,768	0	0	0	0	743,250	1,181,768	743,250	1,181,768
Area 10 - Gilbert[6]		2,104	0	0	526,000	836,340	0	0	0	0	526,000	836,340	526,000	836,340
Area 11 - Long / Heat[4]		400	100,000	159,000	0	0	0	0	0	0	100,000	159,000	100,000	159,000
Area 12 - Grays[6,7]		0	0	0	0	0	0	0	0	0	0	0	0	0
Area 13 - Bush Chapel[4,5]		300[4]	75,000	119,250	0	0					75,000	119,250	75,000	119,250
		1,973[5]					493,250	784,268	0	0	0	0	493,250	784,268
Area 14 - Stepney[5,7]		0	0	0	0	0	0	0	0	0	0	0	0	0
Area 15 - Old Philadelphia[5,7]		0	0	0	0	0	0	0	0	0	0	0	0	0
Area 17: Aberdeen Proving Ground*		0	0	0	0	0	0	0	0	0	0	0	0	0
New Demand		**16,033**	**1,632,500**	**2,595,675**	**1,269,250**	**2,018,108**	**493,250**	**784,268**	**613,250**	**975,068**	**3,515,000**	**5,588,852**	**4,008,250**	**6,373,118**
Total (Existing + New)		**21,973[8]**	**3,117,500**	**4,956,825**	**1,269,250**	**2,018,108**	**493,250**	**784,268**	**613,250**	**975,068**	**5,000,000**	**7,950,002**	**5,493,250**	**8,734,268**

(1) Average Day (A.D) demand determined as 250 gpd/EDU.
(2) Peaking Factor of 1.59 as determined from City records from January 2005 through December 2009 and is used to determine Peak Day (P.D) demand.
(3) Existing EDUs based on average daily demand for years 2005 – 2009 divided by 250 gpd/EDU.
(4) Identified in City DPW growth areas.
(5) Identified to be provided by County water.
(6) Areas mapped as "No Planned Service" in the Harford County Water and Sewer Master Plan.
(7) Proposed EDU's for these growth areas is zero. Infrastructure extension to these areas is not expected in the near future.
(8) 21,973 Total EDU's include 1,973 EDUs to be served by the County leaving 20,000 EDUs to be served by the City of Aberdeen.
(9) Areas served by the City using the bulk water received from the County through agreement recently amended in October of 2009.
* Aberdeen Proving Ground is included as Planning Area 17 but this area is not included in the Water and Sewer capacity calculations or Stormwater runoff calculations that are part of Water Resource Element.

Water Appropriations & Use Permit

The City of Aberdeen's Water Appropriation and Use Permit (WAUP) for the community water system allows for withdrawal an average of 1.5 MGD on an annual basis and up to 2.0 MGD can be drawn from the aquifer during the month of maximum use. Based upon the withdrawal limits and required water demands listed above, an increase in the allowable appropriations permitted by the current WAUP would be needed in order for the City to meet future growth needs. The City should continue to monitor water usage to indicate when an increase in the existing permit may be needed. Should this increase not be obtainable from the Maryland Department of Environment (MDE), the City of Aberdeen would need to further investigate the likelihood of utilizing surface water or purchase additional water from Harford County.

Water Treatment

Based on the information provided in the City of Aberdeen 2009 Annual Drinking Water Quality Report and the Harford County Water and Sewer Master Plan, several of the wells are adversely impacted by perchlorate, a chemical that has been traced to activity at the Aberdeen Proving Ground complex since 2002. The wells principally affected were Wells #3, #8 and #9. A perchlorate removal treatment system consisting of ion-exchange filters have been installed at these wells in June 2004. Since then, these wells had no issues with the perchlorate. Presently, Well #10 has traces of perchlorate and the City is studying a treatment plan to remove perchlorate.

Perchlorate is an unregulated contaminant that is an ingredient in a variety of products including air bag inflators, electronic tubes, lubricating oils, rocket propellant, explosives, and other commercial and agricultural applications. Environmental Protection Agency (EPA) does not have a standard established for perchlorate. Maryland Department of Environment is working with the City of Aberdeen in establishing and maintaining levels of perchlorate in the finished water less than 1.00 ppm (parts per million) and minimizing/eliminating the contaminations.

The existing Aberdeen water treatment facility has the capacity to treat 3.0 MGD through the use of disinfection (chlorine), fluoridation, degasification (forced aeration towers) and pH adjustment (soda ash) for all groundwater sources. Should an increase in well production beyond the treatment plant's rated capacity occur in the future, additional water treatment capacity would be required in order to maintain the high water quality already provided. The City of Aberdeen should monitor the water quality and the treatment capacity as the demand for water increases with growth.

Currently, City's average day water demand is at 49.5% of its treatment capacity and will reach 80% of its capacity by adding 3,660 EDU's to their current demand. Based on the historical growth rate of 2% per annum, City's average day water demand will reach 80% of its treatment capacity around the year 2035. Based on the same growth assumptions, City of Aberdeen's average day water demand will reach 100% of its treatment capacity around the year 2045 or by adding 6,060 EDU's.

Storage

"Water Storage" is defined by Ten State Standards[4] as the storage held in the elevated storage tanks combined with the production from wells with a backup power source. Storage for the community system is provided by three elevated storage tanks each with a capacity of 250,000 gallons and one standpipe with a capacity of 440,000 gallons for a total of 1.19 million gallons. The City of Aberdeen is also planning to construct a 400,000 gallon elevated storage tank to serve existing development in the service area north of I-95. The City of Aberdeen currently operates sixteen (16) wells with a combined pumping ability of 2,126 gallons per minute (GPM). Nine (9) of the City's sixteen (16) wells have back-up power for pumping water for a total pumping capacity of 1,445 GPM. Water storage for the City of Aberdeen is calculated as 2.230 MGD (1.19 MGD tank capacity + 1.040 MGD average day pumping capacity of wells with backup power). The City of Aberdeen would like to meet its average day demand of a peak month as well as a fire flow of 2,500 GPM for 3 hours. The current total water demand for the City of Aberdeen is 2.274 MGD (average day of peak month demand 1.824 MGD + fire flow of 450,000 gallons) and its total Water capacity is 2.796 MGD (2.230 MGD Storage + 0.9 MGD bulk water from the County). The City of Aberdeen currently has a deficit of 43,290 gallons.

As shown in the attached water calculations, the future average day demand for a peak month is 4.426 MGD bringing the total water demand to 6.250 MGD. With the new projected water demand, the City of Aberdeen will have a deficit of 3.903million gallons. The City of Aberdeen would need an additional storage capacity of 3.903 million gallons to meet the projected future water demand. The City of Aberdeen's plan to construct a 400,000 gallon elevated tank will eliminate the current deficit and yield a surplus of 356,710 gallons or 1,427 EDU's. Again, based on the historical growth rate of 2% per annum, City will need additional storage by the year 2020. City of Aberdeen should monitor the growth within the system carefully and plan to add additional storage as growth occurs.

Water Distribution System

The City of Aberdeen currently operates three (3) water distribution systems simultaneously. The main community system serves the majority of the incorporated area. It consists of 8-inch and 12-inch cast iron transmission mains. Water is pumped from the water treatment plant or is delivered through the connections with Harford County or the Aberdeen Proving Ground water system to the first service zone. There are two (2) elevated storage tanks, each with a capacity of 250,000 gallons in zone one, with one (1) tank located near the water treatment facility in the southeastern section of the City and the second tank is centrally located in the western area.

Within the first service zone, Swan Meadows Development originally an Aberdeen Proving Ground housing project, built in 1940's, was accepted into the City of Aberdeen's system in 1970's. This development has various infrastructure problems, including periodic breaks in the water system due to system pressures, flooding of stormwater system during high storm events

[4] Recommended Standards for Water Works commonly referred to as the Ten States Standards is a water facilities design document prepared and updated jointly by a board including ten mid-western states and the Province of Ontario. Ten State Standards was first published in 1953, and subsequently has been revised and published in 1962, 1968, 1976, 1982, 1987, 1992, 1997, 2003 and 2007. These Ten State Standards are adopted as guidelines for other states while designing and/or evaluating a water supply.

due to aging pipe network and swales. The City of Aberdeen contacted Arro Consulting, Inc. to prepare conceptual plan for improvements of the infrastructure and phasing plan for the proposed improvements. The City of Aberdeen also applied to receive funding through Defence Base Closure and Realignment Commission (BRAC) Zone priorities. As funding becomes available, the City of Aberdeen should implement the recommendations to improve the infrastructure in this area.

The second service zone created in 1955 serves the northern sections of the City. This zone is comprised of mostly residential communities, but also includes the commercial area along Bel Air Avenue, the Aberdeen Middle School, and the Maryland House complex located west of the City along the I-95.

The third service zone serves areas north of I-95 that consists of the Higher Education and Applied Technology (HEAT) Center and Ripken Stadium Complex. This zone gets its water supply from the second zone via the HEAT Center Booster Station. This station provides two booster pumps with a capacity of 300 GPM each plus 1,500 GPM fire pump. According to the Harford County Water and Sewer Master Plan, additional development in the area will require a 500,000 gallon elevated storage tank to satisfy diurnal demands, fire flow storage, and reliability of service to this area. The City of Aberdeen is currently in the process of undertaking construction of a 400,000 gallon elevated storage tank to serve this zone.

HEAT is served by the City of Aberdeen through a 12-inch diameter water main which serves only the HEAT Center due to its positive economic, educational, and economic uses in which it provides Harford County. Water service is provided from a water storage tank located on the HEAT Center site. Any further annexation or expansion of water service in the area, particularly the west side of Gilbert Road, must be provided with a new water distribution system.

The City of Aberdeen assesses its pressures and fire flows within the community water system by flushing all the hydrants annually and adjusting the short cycles to meet the fire flows as well as utilizing a comprehensive hydraulic water model of the systems. It is recommended that the City of Aberdeen continue to perform the flushing and maintain the water model to identify any pressure and/or flow deficiencies as well as identify the need for new or upgraded water mains as they relate to future growth.

Water Summary

The City Aberdeen currently has sufficient water supply capabilities to accommodate the current population with the sixteen (16) existing wells, four (4) existing storage tanks, one (1) new storage tank, and the bulk water purchased from the Harford County. However, with the planned growth of 8,770 EDUs in the growth areas and 5,290 EDU's of infill, the City of Aberdeen will need an additional, 2.90 MGD of water, 3,507 gpm of well capacity and 3.903 million gallons of storage capacity. The City will be adopting a water allocation policy/ordinance to address allocation of water for future growth. The City will need to closely monitor growth to determine when additional well capacity and/or storage would be needed. With groundwater sources and bulk water purchases limited, the City could explore their own surface water/desalination water treatment plant to supplement needed water for growth.

At the historical growth rate of 2% per annum, City of Aberdeen's average day water demand will reach 80% of its available water resources around the year 2015 or by adding 780 EDU's and will reach 100% around the year 2025 or by adding 2,460 EDU's. City's average day water demand will reach 80% of its treatment capacity around the year 2035 and will reach 100% around the year 2045 or by adding 6,060 EDU's. Again, based on the historical growth rate of 2% per annum, City will need additional storage by the year 2020.

WASTEWATER CAPACITY

Wastewater Treatment

The City of Aberdeen owns and operates a wastewater treatment facility located at the end of Michaels Lane. Sewage is treated to a tertiary level utilizing primary treatment, two stage activated sludge biological nutrient removal (BNR) process, phosphorous removal, chlorination, dechlorination, chemical addition, anaerobic sludge digestion, and sludge composting utilizing the extended pile method. The effluent is discharged into Swan Creek. The treatment facility has a 4.0 MGD permitted capacity and a peak flow capacity of 6.0 MGD. The plant currently experiences average sewage influent flows of 2.23 MGD with instantaneous peak flows as high as 8.425 MGD during storm events.

Currently, the City of Aberdeen is in the process of upgrading the wastewater treatment facility in order to achieve Enhanced Nutrient Removal (ENR). Design phase of this upgrade was started in April 2008 with a completion date in 2012 and ENR treatment levels achieved by January of 2013. The City of Aberdeen's future growth is also limited by Total Maximum Daily Loads (TMDL's) in the Swan Creek where the WWTP discharges effluent.

Wastewater Flows

Between January 2005 and December 2009 the City of Aberdeen's Advanced Wastewater Treatment Plant (AWWTP) experienced an average influent flow of 2.23 MGD. In 2009, the average daily influent flow was approximately 2.249 MGD.

The City of Aberdeen experienced an average of 1.844 MGD effluent flow between January 2005 and December 2009 or approximately 46% of the plant's overall permitted capacity. The City of Aberdeen's maximum one day effluent flow from 2005 through 2009 was 8.51 MGD in December 2009. Currently the AWWTP has been meeting its current effluent limits and has been within allowable flows.

As shown in Table 10-3, proposed growth of 8,770 EDU's in the growth areas and 3,854 EDU's of infill along with existing flows will result in an average daily wastewater flow of 5.00 MGD; note that per the Harford County Water and Sewer Master Plan adopted in April of 2010, approximately 1,973 EDU's or 0.493 MGD in Bush Chapel growth areas will be served by the County WWTP. Therefore taking into account the growth areas, infill, and areas identified by the Harford County Water and Sewer Master Plan as "no planned service", an additional 3.156MGD will flow to the City of Aberdeen's AWWTP resulting in the projected total average flow of 5.0 MGD. Based on the average flow data, with the additional growth, the City's AWWTP will not meet its current effluent limits and the peak flows of 20.774 MGD will far

exceed the City of Aberdeen's AWWTP Peak flow limits of 6.0 MGD. The City's projected maximum day flows are 14.774 MGD or 14,774 EDU's more than the AWWTP can currently handle.

Part of the 5.0 MGD average day flow, 1.269 MGD comes from the area that is mapped as "no planned service" (Aldino-Stepney and Gilbert) by the Harford County Water and Sewer Master Plan. The City of Aberdeen is recommended to work with Harford County to map these areas as to be served in the future.

As the AWWTP reaches 80% of its capacity, as recommended by MDE, the City should complete a Wastewater Capacity Management Plan begin the planning process to increase its capacity; an additional 5,424 EDU's will put the existing AWWTP at 80% capacity or 3.2 MGD. Possible options could include a capacity upgrade of the existing AWWTP, process modifications of the existing AWWTP that will further enhance the treatment and further reduce the nutrients which may subsequently increase permitted capacity, obtain nutrient credits by connecting existing onsite sewage disposal systems to the City's AWWTP, wetland restoration, water reuse, oyster banking, algal farming, and investigation into alternate disposal methods such as spray irrigation.

At the historical growth rate of 2% per annum, AWWTP will reach 80% of its capacity around the year 2035 and will reach 100% of its capacity around the year 2060 after adding 8,624 EDU's.

Table: 10-3: Wastewater Flows for the City of Aberdeen Growth Area

Location		EDU	City[4]		County[6]		No Planned Service[6]		Total AWWTP Flows (City+ No Planned Service)		Total Wastewater Flows	
			A. D[1] (gpd)	P D[2] (gpd)	A. D[1] (gpd)	P D[2] (gpd)	A. D[1] (gpd)	P D[2] (gpd)	A. D[1] (gpd)	P D[2] (gpd)	A. D[1] (gpd)	P D[2] (gpd)
Area 16: City of Aberdeen	Existing[3]	7,376	1,844,000	8,150,000	0	0	0	0	1,844,000	8,150,000	1,844,000	8,150,000
	Infill	3,854	963,500	3,854,000	0	0	0	0	963,500	3,854,000	963,500	3,854,000
Area 1 - Swan Creek[4]		300	75,000	300,000	0	0	0	0	75,000	300,000	75,000	300,000
Area 2 - Mullins[4,7]		0	0	0	0	0	0	0	0	0	0	0
Area 3 - Oakington[4,7]		0	0	0	0	0	0	0	0	0	0	0
Area 4 - Pulaski[4]		240	60,000	240,000	0	0	0	0	60,000	240,000	60,000	240,000
Area 5 - Barkess[4]		1,011	252,750	1,011,000	0	0	0	0	252,750	1,011,000	252,750	1,011,000
Area 6 - Titan Terrace[4,]		223	55,750	223,000	0	0	0	0	55,750	223,000	55,750	223,000
Area 7 - Old Robinhood[4]		300	75,000	300,000	0	0	0	0	75,000	300,000	75,000	300,000
Area 8 - Paradise[4]		919	229,750	919,000	0	0	0	0	229,750	919,000	229,750	919,000
Area 9 - Aldino-Stepney[6]		2,973	0	0	0	0	743,250	2,973,000	743,250	2,973,000	743,250	2,973,000
Area 10 - Gilbert[6]		2,104	0	0	0	0	526,000	2,104,000	526,000	2,104,000	526,000	2,104,000
Area 11 - Long / Heat[4]		400	100,000	400,000	0	0	0	0	100,000	400,000	100,000	400,000
Area 12 - Grays[6,7]		0	0	0	0	0	0	0	0	0	0	0
Area 13 - Bush Chapel		300[4]	75,000	300,00					75,000	300,00	75,000	300,00
		1,973[5]	0	0	493,250	1,973,000	0	0	0	0	493,250	1,973,000
Area 14 - Stepney[5,7]		0	0	0	0	0	0	0	0	0	0	0
Area 15 - Old Philadelphia[5,7]		0	0	0	0	0	0	0	0	0	0	0
Area 17: Aberdeen Proving Ground*		0	0	0	0	0	0	0	0	0	0	0
New Flows		**14,597**	**1,886,750**	**7,547,000**	**493,250**	**1,973,000**	**1,269,250**	**5,077,000**	**3,156,000**	**12,624,000**	3,649,250	14,597,000
Total Flows (Existing + New)		**21,973[8]**	**3,730,750**	**15,697,000**	**493,250**	**1,973,000**	**1,269,250**	**5,077,000**	**5,000,000**	**20,774,000**	5,493,250	22,747,000

(1) Average Day Flows determined by 250 gpd/EDU.
(2) Standard Peaking Factor of 4.0 used for infill and all new development to determine the Peak Day (P.D) flow.
(3) Existing EDUs based on average daily flows for years 2005 – 2009 divided by 250 gpd/EDU.
(4) Identified in City DPW growth areas.
(5) Identified to be provided by County sewer.
(6) Areas mapped as "No Planned Service" in the Harford County Master and Water Sewer Plans.
(7) Proposed EDU's for these growth areas is zero. Infrastructure extension to these areas is not expected in the near future.
(8) 21,973 Total EDU's include 1,973 EDUs to be served by the County leaving 20,000 EDUs to be served by the City of Aberdeen.
* Aberdeen Proving Ground is included as Planning Area 17 but this area is not included in the Water and Sewer capacity calculations or Stormwater runoff calculations that are part of Water Resource Element.

Nutrient Loads

A Tributary Strategy for the Chesapeake Bay Watershed developed in 2004 as a result of 2000 Chesapeake Bay Agreement has become the standard to which cleanup efforts of the Bay are proceeding. This strategy envisions Enhanced Nutrient Removal (ENR) levels of treatment attained by all the major wastewater treatment plants in the State of Maryland discharging into the Chesapeake Bay and its waterways. Currently, Maryland Department of the Environment (MDE) is adding language to the discharge permits such that the annual load of nitrogen and phosphorous is limited at each of the major plants.

The City of Aberdeen's current wastewater treatment plant is designed to remove nitrogen and phosphorus through a Biological Nutrient Removal (BNR) process. The City of Aberdeen discharges an average of 22,453 lbs/year of nitrogen and 1,684 lbs/year of phosphorus. Once the current ENR upgrade is complete, the strict permit limits of 48,729 lbs/year of nitrogen and 3,655 lbs/year of phosphorus as required by the Maryland Department of the Environment will be enacted.

The planned ENR upgrades will limit the AWWTP to discharge total nitrogen at 4 mg/L for a total of 48,729 lbs/year and 0.3 mg/l of phosphorus for a total of 3,655lbs/year of phosphorus at a the permitted capacity of 4.0 MGD. With the planned growth of 8,770 EDU's, the City of Aberdeen's AWWTP will be discharging 60,882 lbs/year of nitrogen, an excess of 12,153 lbs/year, and 4,566 lbs/year of phosphorus, an excess of 901 lbs/year.

If the City of Aberdeen determines that a 5.0 MGD wastewater treatment plant is needed to meet the needs of future growth, the required nutrient limits would need to be lowered to 3.2 mg/l for total nitrogen and 0.241 mg/l of total phosphorus in order to meet the permitted nutrient loading limits for the AWWTP. If the treatment plant cannot reduce the nutrient levels to 3.2 mg/l for total nitrogen and 0.241 mg/l of total phosphorus or unable to increase the capacity of the treatment plant, City should investigate into obtaining nutrient credits for additional capacity by connecting existing onsite sewage disposal systems to the City's AWWTP, wetland restoration, water reuse, oyster banking, algal farming, and investigation into alternate disposal methods such as spray irrigation to abide to the Total Maximum Daily Load (TMDL) limits.

Inflow and Infiltration

The peak factor for a treatment plant is determined by examining the actual flows the plant received over the years. The City of Aberdeen AWWTP peaks flows between January 2005 and December of 2009 were extremely high due to wet weather and result in a actual peak factor of 4.42. Such high flows are possible due to inflow and infiltration (I&I) problems that the treatment plant is experiencing. The inflow and infiltration problems are also evident by examining the water supplied by the City and the wastewater received by the AWWTP. To identify the sources of the problem the City of Aberdeen is currently performing sewer inspections to identify I&I problems and also to identify aging sewer mains throughout the wastewater collection system.

The repairs to the collection system would ultimately reduce I&I which in turns reduces the overall flow to the wastewater treatment facility. This section does not take into consideration any further reductions in average daily flows based on I&I repairs. It should be further noted that further

reductions in average daily flows are expected as the system undergoes repairs. The City of Aberdeen should review the work related to reducing I&I every six years to determine what gains are due to weather and what flow decreases can be contributed to repairs within the collection system.

Swan Meadows Development, now part of the City of Aberdeen, has infrastructure problems, including infiltration and inflow problems in the sewer system. The City of Aberdeen contacted Arro Consulting, Inc. to prepare conceptual plan for improvements of the infrastructure and phasing plan for the proposed improvements. As funding becomes available, the City of Aberdeen should implement the recommendations to improve the infrastructure and rectify the infiltration and inflow problems.

Septic Systems

There are 16 properties within the City of Aberdeen corporate limits which currently operate on septic systems. The City of Aberdeen is currently attempting to convert private septic systems to the centralized wastewater collection system for all properties within the City limits.

Wastewater Summary

Based on this review, the City of Aberdeen does not have the necessary capacity at the AWWTP to accommodate future planned growth and also meet limitations set within the discharge permit even after the treatment plant is upgraded to include ENR treatment. Additional infrastructure improvements will continue to be necessary to provide public sewer service to the designated growth areas and reduce I&I.

At the historical growth rate of 2% per annum, AWWTP will reach 80% of its capacity around the year 2035 and will reach 100% of its capacity around the year 2060. The City of Aberdeen should monitor growth to ensure that system capacity is sufficient. If the capacity is reaching its maximum limits, the City of Aberdeen should investigate additional discharge methods such as spray irrigation and point source trading such as discharge credits and trading consistent with MDE's Wastewater Capacity Management Plan Guidance.

HYPOTHETICAL BUILD-OUT SCENARIO

The following build-out discussion takes into consideration the water needs and wastewater capacity needs the City of Aberdeen will have if all growth areas are fully developed, as well as all properties with development capacity within the existing corporate limits. Please keep in mind that this scenario is not expected to occur within the 2030 planning period of this Comprehensive Plan.

According to the City of Aberdeen projections and anticipated future residential projects, at full build out approximately 3,854 EDUs could be added within the City of Aberdeen. Accounting for infill and lots that have either been approved or are pending approval, the City is currently reserving capacity for 945 EDUs, this equates to 963,500 GPD. All growth areas, when completely developed, have a development potential of 34,554 EDU's. However, the City is only planning for a potential of 10,743 EDU's, of which 8,770 EDUs will be served by the City of Aberdeen and

1,973 EDUs will be served by Harford County, in its growth areas because of the infrastructure limitations.

To support this development, based on the average day demand of 250 gallons per day (gpd) per EDU, the City of Aberdeen would need an additional 2.9 MGD of water and 1 MGD of wastewater capacity. Currently, the City of Aberdeen has a capacity to withdrawal a maximum of 2.0 MGD from existing wells; treat 3.0 MGD at the water treatment plant along with purchasing maximum of 0.9 MGD of potable water per an agreement currently in place with Harford County. The City of Aberdeen's National Pollutant Discharge Elimination System (NPDES) permit for its Advanced Wastewater Treatment Plant (AWWTP) allows for an average discharge of only 4.0 MGD.

At the historical growth rate of 2% per annum, City of Aberdeen's average day water demand will reach 80% of its available water resources around the year 2015 and will reach 100% around the year 2025. City's average day water demand will reach 80% of its treatment capacity around the year 2035, will reach 100% around the year 2045 and the City will need additional storage by the year 2020.

Even with the projected 8,770 EDU's, City of Aberdeen needs to expand its treatment capacity from 4.0 MGD to 5.0 MGD and enhance its treatment to meet the permit discharge limitation. At the same growth rate, AWWTP will reach 80% of its capacity around the year 2035 and will reach 100% of its capacity around the year 2050. If the City expanded its treatment capacity to 5.0 MGD, City will be able to serve its projected growth of 20,000 EDUs.

At 2% historical growth rate, City of Aberdeen will reach its projected growth of 21,973 EDU's (including 1973 EDUs in Bush Chapel that will be served by the County Water and Sewer) around the year 2065.

Wastewater is the limiting factor for growth for the City of Aberdeen due to the nutrient loads being assessed on the City's AWWTP. Utilizing the limit of technology for wastewater treatment and nutrient load limitations, 5.00 MGD of treatment capacity at the AWWTP would be the maximum capacity allowed. Although from the above analysis it appears that water is the limiting factor for growth, but the City could obtain water from other sources such as additional purchased water from the County or, possibly cost prohibited, their own surface water/desalination treatment plant

HARFORD COUNTY WATER AND SEWER PLAN

Harford County updated its Water and Sewer Master Plan in April of 2010. Harford County updates its Water and Sewer Master Plan in Spring and Fall of each year. The current Water and Sewer Master Plan only indicates potential water and sewer service in the old growth area based on Harford County's 2004 Land Use Plan. The City of Aberdeen should work with Harford County in amending the Water and Sewer Master Plan upon review of the City of Aberdeen's designated growth areas and adoption of the plan by the City of Aberdeen to include the growth areas that are mapped as "No Planned Service" under the current Water and Sewer Master Plan; see Map 10-1: Water Service Areas and Map 10-2: Wastewater Service Areas, for growth areas mapped as "No Planned Service" areas.

STORMWATER LOADING

As part of the Water Resources Element, the Maryland Department of Environment has provided a spreadsheet to estimate the affect future development and land use changes will have on non-point source nutrient runoff, open space and impervious area. The City of Aberdeen is to create different land use scenarios and use the spreadsheet to calculate the impact of each land use scenario. The City of Aberdeen should select the least impactful land use scenario to guide future development.

The City of Aberdeen recognizes the importance of its natural resources and the need to preserve the Swan Creek, Bush River, Cranberry Run, and Aberdeen Proving Ground Watershed for future generations. Three land use scenarios were performed to determine non-point source loading. The City of Aberdeen will look to implement the vision of the City while providing recommendations to reduce the impact of future development.

This section also looks at Total Maximum Daily Loads (TMDLs) affecting City of Aberdeen and high quality Tier II waterways within Harford County. This section will also discuss potential solutions to reduce nutrient runoff.

Land Use Scenarios

Three land use scenarios were performed to determine non-point source loading. The first scenario looks at the affect planned development will have on increasing or decreasing non-point source runoff. The second scenario looks at the affect of the ultimate build out in the mapped growth areas and the third scenario looks at the affect of the proposed EDUs on the non-point source runoff. Each of these scenarios also looked at the runoff in three different watersheds that the City of Aberdeen is located in. There are no scenarios based on the different developments.

Non-Point Source Summary

Scenario 1 - Existing City Boundaries (Infill development)

Based on the non-point source (NPS) worksheet provided by the Maryland Department of the Environment, it is estimated that the City of Aberdeen is currently generating 34,469 pounds of nitrogen per year. Potential infill growth is estimated to decrease discharge levels to 33,855 pounds

of nitrogen per year generated by stormwater runoff; a decrease of 614 pounds per year. Phosphorous levels are currently being discharged at an estimated 3,615 pounds per year. Projected infill growth is estimated to increase phosphorous discharge to 3,648 pounds per year. City of Aberdeen also has 16 private septic systems that will be connected to the AWWTP in the future, further reducing the nitrogen discharge estimated at 154 pounds per year.

Please refer to Table 10-4 for the summary of initial and future nitogen and phosphorous discharge in each of watersheds. All estimates are based on projected future growth occurring inside the existing City limits. Any new development annexed into the City of Aberdeen will be required to address nutrient loading.

Scenario 2 – Future Growth Areas with Total Build-Out (34,554 EDU's)[5]

Based on the non-point source (NPS) worksheet provided by the Maryland Department of the Environment, it is estimated that nutrient runoff within the City of Aberdeen's growth areas is generating 100,285 pounds of nitrogen per year. Potential new growth is estimated to decrease discharge levels to 93,525 pounds per year generated by stormwater runoff; a decrease of 6,760 pounds per year. Phosphorous levels are currently being discharged at an estimated 9,224 pounds per year. Projected future growth is estimated to increase phosphorous discharge to 10,084 pounds per year; an increase of 860 pounds per year. All planning areas combined has approximately 798 residential septic systems and 170 acres of commercial septic system areas that are assumed to be connected to the AWWTP in the future, further reducing the nitrogen discharge estimated at 9,129 pounds per year.

Please refer to Table 10-4 for the summary of initial and future nitogen and phosphorous discharge in each of watersheds. All estimates are based on projected future growth occurring inside and outside the existing City limits. Any new development annexed into the City of Aberdeen will be required to address nutrient loading.

Scenario 3 –Future Growth Area with Proposed EDUs (10,743 EDU's)[6]

Based on the non-point source (NPS) worksheet provided by the Maryland Department of the Environment, it is estimated that nutrient runoff within the City of Aberdeen's growth areas is generating 100,285 pounds of nitrogen per year. Potential new growth is estimated to decrease discharge levels to 94,851 pounds per year generated by stormwater runoff; a decrease of 5,434 pounds per year. Phosphorous levels are currently being discharged at an estimated 9,224 pounds per year. Projected future growth is estimated to increase phosphorous discharge to 9,375 pounds per year; an increase of 151 pounds per year. All planning areas combined has approximately 798 residential septic systems and 170 acres of commercial septic system areas that are assumed to be connected to the AWWTP in the future, further reducing the nitrogen discharge estimated at 9,129 pounds per year.

[5] 34,554 EDUs includes 3,857 EDUs in the Bush Chapel planning area that will be served by the County Water and Sewer and 30,697 EDUs served by the City of Aberdeen's Water and Sewer.
[6] 10,743 EDUs includes 1,973 EDUs in the Bush Chapel planning area that will be served by the County Water and Sewer and 8,770 EDUs served by the City of Aberdeen's Water and Sewer.

Please refer to Table 10-4 for the summary of initial and future nitogen and phosphorous discharge in each of watersheds. All estimates are based on projected future growth occurring inside and outside the existing City limits. Any new development annexed into the City of Aberdeen will be required to address nutrient loading.

Table 10 -4: Summary of Estimated Non-Point Nitrogen and Phosphorous Discharge for Scenarios 1, 2, & 3

		Total Non-Point Discharge			Swan Creek		Bush River		APG Watershed	
		% Change	**Initial**	**Future**	Initial	Future	Initial	Future	Initial	Future
Nitrogen	Scenario 1	**-1.78**	**34,469**	**33,855**	18,661	19,467	9,837	9,674	5,971	4,715
	Scenario 2	**-14.52**	**109,413**	**93,525**	68,104	56,796	35,339	31,324	5,971	5,406
	Scenario 3	**-13.31**	**109,413**	**94,851**	68,104	59,707	35,339	29,738	5,971	5,406
Phosphorus	Scenario 1	**0.91**	**3,615**	**3,648**	1,955	2,071	1,059	1,062	601	515
	Scenario 2	**9.32**	**9,224**	**10,084**	5,439	6,136	3,184	3,347	601	601
	Scenario 3	**1.64**	**9,224**	**9,375**	5,439	5,632	3,184	3,141	601	601

Maryland Department of Environment (MDE) nitrogen, phosphorous loading and impervious surface estimates are based on land use assumptions. City of Aberdeen will work with MDE and Harford County to simplify and coordinate non-point source loading estimates and to coordinate improving the City of Aberdeen's stormwater loading reduction efforts. Due to the limitations of the Nonpoint Source Spreadsheet at the small-scale level, the results cannot be used to accurately predict actual nutrient loads within Swan Creek or other watersheds to allow for direct comparisons of TMDLs, but instead can only be used for comparing the relative impacts of alternative land use plans.

Open Space and Impervious Surfaces

Table 10-5 is a summary of changes in impervious surface and open space lands, both agricultural and forest, for the three scenarios. Scenario 3 is a midway of increase in development while keeping 63% of the agricultural open space and 78% of the forest open space.

Table: 10-5: Change in Impervious Surface and Open Space in Scenario 1, 2, & 3.

		Total		Swan Creek		Bush River		APG Watershed	
		Initial	**Future**	Initial	Future	Initial	Future	Initial	Future
Impervious Area	Scenario 1	**1,620**	**1,660**	842	880	553	555	225	225
	Scenario 2	**2,370**	**3,297**	1,168	1,897	977	1,152	225	247
	Scenario 3	**2,370**	**2,822**	1,168	1,500	977	1,075	225	247
Agricultural Open Space	Scenario 1	**228**	**124**	98	98	24	0	106	26
	Scenario 2	**2,630**	**904**	2,029	636	495	242	106	26
	Scenario 3	**2,630**	**1,687**	2,029	1,419	495	242	106	26
Forested Open Space	Scenario 1	**570**	**456**	570	456	0	0	0	0
	Scenario 2	**3,413**	**1,794**	2,174	739	1,239	1,055	0	0
	Scenario 3	**3,413**	**2,961**	2,174	1,788	1,239	1,173	0	0

City of Aberdeen determined that Scenario 3 with 10,743 EDUs (including 1,973 EDU's in the Bush Chapel planning area that will be served by the County Water and Sewer and 8,770 EDUs served by the City of Aberdeen's Water and Sewer) produced the best in overall loading calculations and minimizing future impervious surface area by protecting open spaces. Scenario 2 discharges less phosphorous compared to scenario 2 with a slight increase in nitrogen discharge.

TOTAL MAXIMUM DAILY LOAD (TMDLs) & WATERSHEDS

2008 Integrated Report of Surface Water Quality in Maryland required under sections 303 (d), 305 (b), and 314 and 202 (d) of the Federal Clean Water Act categorizes all the watersheds in the State of Maryland based on their water quality. Sections 305 (b) and 202 (d) of the Federal Clean Water Act require states, territories, and authorized tribes to perform annual water quality assessments to determine the status of jurisdictional waters. Waters that do not meet standards may require a TMDL to determine the maximum amount of an impairing substance or pollutant that a particular water body can assimilate and still meet water quality criteria.

A TMDL, as defined in Maryland 2008 Integrated Report of Surface Quality, is an estimate of the amount or load of a particular pollutant that a water body can assimilate and still meet water quality standards. After a total load has been developed, upstream discharges will be further regulated to ensure the prescribed loading amounts are attained.

The Maryland 2008 Integrated Report presents the current status of water quality in Maryland by placing all waters of the State into one of the five categories. A list of these categories and a brief explanation of the categories is as follows:

Category 1: water bodies that meet all water quality standards and no use in threatened;
Category 2: water bodies meeting some water quality standards but with insufficient data and information to determine if other water quality standards are being met;
Category 3: insufficient data and information are available to determine if any water quality standard is being attained. This can be related to having an insufficient quantity of data and/or an insufficient quality of data to properly evaluate a water body's attainment status.
Category 4: one or more water quality standards are impaired or threatened but a TMDL is not required or has already been established. Following subcategories are included in category 4:
Subcategory 4a: TMDL already approved or established by EPA;
Subcategory 4b: Other pollution control requirements are expected to attain water quality standards and,
Subcategory 4c: Water body impairment is not caused by a pollutant. (i.e. permits, consent decrees, etc.)
Category 5: Historic list of impaired water bodies known as 303(d) List, does not attain the water quality standard, and a TMDL or other acceptable pollution abatement initiative is required.

City of Aberdeen and its growth areas are located in three different watersheds: Swan Creek, Bush River, & Aberdeen Proving Ground (APG). Two of the three watersheds, Swan Creek & Bush River, are listed as Category 3 and APG is listed as Category 5.

Swan Creek: This watershed is listed as Category 3 under the 2008 Integrated Report and identifies the potential pollutants as Nutrients (nitrogen, phosphorus), Suspended Solids, and Combined Benthic/Fishes Bioassessments. The City of Aberdeen's wastewater treatment plant with a design capacity of 4 MGD and Swan Harbor Dell wastewater treatment plant, serving a mobile home park with a capacity of 5,000 GPD, are two point sources discharging into Swan Creek.

However, there is also a TMDL for Nitrogen and Phosphorus loading into Swan Creek approved by Watershed Protection Division of U.S. Environmental Protection Agency Region III in March of 2002. See Table 10-6 for TMDL's for Swan Creek. According to the report, State's 1996 list of Water Quality Limited Segments, Swan Creek is impaired by excess nutrients and suspended sediments. This report only addressed TMDL's for nitrogen and phosphorus and does not address sediment impairments. TMDL's for the nutrients are as follows:

TABLE 10-6: TMDL's for Annual Average Flow Conditions

	Nitrogen	**Phosphorus**
Non Point Source TMDL	121,907 lbs/year	9,774 lbs/year
Point Source TMDL	124,092 lbs/year	8,724 lbs/year
Total TMDL	**252,094 lbs/year**	**18,987 lbs/year**

Estimated non point Nitrogen and Phosphorous discharge for the City of Aberdeen three (3) scenarios is less than the non point source TMDL of the Swan Creek (refer to Table 10-4).

Following are the major waste water treatment plants (WWTP) within the Swan Creek watershed along with their current nutrient discharge loads and ENR load caps for planning purposes.

TABLE 10-7: Swan Creek WWTPs Nutrient Discharge Loads

WWTPs	Current*		ENR Load Cap	
	Nitrogen	**Phosphorus**	**Nitrogen**	**Phosphorus**
Aberdeen	25,651 lbs/year	1,238 lbs/year	48,729 lbs/year	3,655 lbs/year
Havre De Grace	20,586 lbs/year	2,158 lbs/year	11,573 lbs/year	868 lbs/year

Source: Maryland Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed – April 2008

* Current information is from the Year 2006 as presented in the source document

Bush River: This watershed is also listed as Category 3 under Integrated Report and identifies the potential pollutants as Nutrients (nitrogen, phosphorus), Estuarine Bioassessments, PCB in Fish Tissues, Suspended Solids, and Combined Benthic/Fishes Bioassessments.

Following are the major waste water treatment plants (WWTP) within the Bush River watershed along with their current nutrient discharge loads and ENR load caps for planning purposes.

TABLE 10-8: Bush River WWTPs Nutrient Discharge Loads

WWTPs	Current*		ENR Load Cap	
	Nitrogen	**Phosphorus**	**Nitrogen**	**Phosphorus**
Aberdeen Proving Ground – Edgewood	19,018 lbs/year	3,452 lbs/year	36,547 lbs/year	2,741 lbs/year
Sod Run	360,875 lbs/year	33,583 lbs/year	243,645 lbs/year	18,273 lbs/year

Source: Maryland Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed – April 2008

* Current information is from the Year 2006 as presented in the source document

Aberdeen Proving Ground: This watershed is listed as Category 5 under Integrated Report and identifies the potential pollutants as Nutrients (nitrogen, phosphorus), Estuarine Bioassessments, Toxics, Suspended Solids, and Combined Benthic/Fishes Bioassessments.

Following is the major waste water treatment plant (WWTP) within Aberdeen Proving Ground watershed along with its current nutrient discharge loads and ENR load cap for planning purposes.

TABLE 10-9: Aberdeen Proving Ground WWTPs Nutrient Discharge Loads

WWTPs	Current*		ENR Load Cap	
	Nitrogen	**Phosphorus**	**Nitrogen**	**Phosphorus**
Aberdeen Proving Ground – Aberdeen	16,326 lbs/year	379 lbs/year	34,110 lbs/year	2,558 lbs/year

Source: Maryland Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed – April 2008

* Current information is from the Year 2006 as presented in the source document

The City of Aberdeen should work to implement stormwater best management practices along all three watersheds to help reduce the pollutants through non-point source discharge. The City of Aberdeen should also monitor approval of the TMDL and implementation strategy for Bush River and Aberdeen Proving Ground. In addition, the City of Aberdeen should monitor progress of future TMDLs for the Swan Creek Watershed for other impairments discussed above.

TIER II WATERWAYS

Tier II waterways are considered to be waterways high in quality that require special protections. In Harford County, 7 waterways have been given Tier II status: Deer Creek 1, Deer Creek 4, Deer Creek 2, Little Gunpowder Falls 8, Little Gunpowder Falls 9, Overshot Branch 8, and Overshot Branch 7. The City of Aberdeen is not within a subwatershed affecting these Tier II designated creeks. See Appendix - Map 10-3: Tier II Waterways for the location of the waterways that require special protection. In the future, the City of Aberdeen should monitor future designations of Tier II waterways to ensure waterways affected by urban runoff or future development in the City are recognized and measures to maintain high quality waterways are implemented.

STORMWATER MANAGEMENT ACT OF 2007

The City of Aberdeen adopted new Stormwater Management regulations on May 10, 2010 by Ordinance # 10-O-08 to be consistent with The Maryland Stormwater Management Act of 2007.

POLICIES AND RECOMMENDATIONS

Potable Water

- Future growth will cause the water usage levels to exceed permitted thresholds. The City of Aberdeen should monitor water usage and request an increase to the permitted thresholds when necessary to meet future needs;
- Should an increase in permitted thresholds not be obtainable, alternate sources of water should be investigated such as surface water and/or purchase of additional water from Harford County;
- The City of Aberdeen should create an education and outreach program to provide residents and businesses with information concerning water conservation techniques in order to decrease water usage;
- Water meters should be periodically inspected to ensure proper water usage is being documented;
- The City of Aberdeen should continue to utilize and update their comprehensive water model to identify any pressure and/or flow deficiencies as well as identify any water main upgrades needed for future demands;
- The City of Aberdeen should pursue all funding opportunities available to improve the infrastructure in the Swan Meadows Development;
- The City of Aberdeen should implement the recommendations and the phasing plan proposed by the Arro Consulting, Inc. for the Swan Meadows Development to improve the infrastructure and avoid any future breaks in the water system;
- Any further annexation or expansion of water service in the HEAT area, particularly west side of Gilbert Road, must be provided with new water distribution system;
- The City of Aberdeen should monitor well production and prepare a well maintenance program to ensure wells operate efficiently;
- The City of Aberdeen should consider placing generators at all well sites to ensure adequate water production for fire protection during power outages;
- Increase in well production in the future will result in the need of additional water treatment capacity in order to maintain the water quality.
- City should consider and explore the idea of surface water with their own surface water/desalination water treatment plant to supplement needed water for growth;
- An engineering study should be completed to further analyzing existing and future demands along with determination of feasible options in regards to water sources (purchased water, surface water/desalinization plant) and treatment.

Wastewater Treatment

- Proceed with planned wastewater treatment plant upgrades to decrease nutrient loading;
- The City of Aberdeen should follow up with the repairs to problem areas identified under the I&I study to reduces the quantity of inflow and infiltration to the wastewater treatment facility;
- The City of Aberdeen should implement the recommendations and the phasing plan proposed by the Arro Consulting, Inc. for the Swan Meadows Development to improve the infrastructure and avoid infiltration and inflow problems in the sewer system;
- The City Aberdeen should closely monitor the public sewer service capacity needs to ensure that the system capacity is sufficient. When the capacity reaches 80%, the City of Aberdeen should begin the planning and design process to increase wastewater treatment plant capacity and increase the treatment to reduce the nutrient discharge for additional capacity or investigate additional discharge methods such as spray irrigation and point source trading such as discharge credits and trading consistent with MDE's Wastewater Capacity Management Plan Guidance;

- Explore the opportunity to obtain properties in the event that spray irrigation of the wastewater effluent is necessary to meet TMDL requirements;
- Work with Harford County to revise the County Water and Sewer Master Plan to include all the City of Aberdeen's growth areas;
- Reevaluate and upgrade the wastewater treatment plant to meet the desired effluent requirements as a result of the additional growth and/or more strict effluent limits.
- An engineering study should be completed to further analyzing existing and future flows along with determination of feasible options in regards to treatment and disposal alternatives.

Stormwater

- The City of Aberdeen should implement the recommendations and the phasing plan proposed by the Arro Consulting, Inc. for the Swan Meadows Development to improve the stormwater system to avoid flooding during the high storm events system.
- Examine the approved sediment impairments TMDL and implementation strategy for Swan Creek when available,
- Implement stormwater best management practices (BMPs) to reduce non-point source runoff and limit impairment to all three watersheds (Swan Creek, Bush River, Aberdeen Proving Ground);
- The City of Aberdeen should work with MDE and Harford County to simplify and coordinate non-point source loading estimates and to coordinate improving the City's stormwater loading reduction efforts;
- Monitor Tier II waterway future designations of the waterways to ensure waterways affected by urban runoff or future development in the City of Aberdeen are recognized and measures to maintain high quality waterways are implemented;

REFERENCES FOR WATER RESOURCE ELEMENT:

- 2009 Annual Drinking Water Report (Online at: http://www.mde.state.md.us/assets/document/watersupply/2009ccr/Harford/0120001%20City%20Of%20Aberdeen.pdf)
- National Pollutant Discharge Elimination System Permit for City of Aberdeen Advanced Wastewater Treatment Plant Permit (Permit # MD0021563)
- April 2010 Harford County Water and Sewer Master Plan
- Harford County Comprehensive Plan 2004
- Ten State Standards 2007 Edition (Online at: http://10statesstandards.com/waterstandards.html)
- State Water Appropriation Permit # HA1977G022 (06)
- Chapter 524 - Well Head Protection Ordinance – Adopted August of 2004
- 2004 Tributary Strategy for the Chesapeake Bay Watershed
- Water Service Purchase Contact between Harford County and City of Aberdeen – 1 through 6th amendments.
- 2000 Chesapeake Bay Agreement (Online at: http://www.chesapeakebay.net/content/publications/cbp_12081.pdf)
- 2008 Integrated Report of Surface Quality (Online at: http://www.mde.state.md.us/assets/document/2008_IR_Parts_A_thru_E(1).pdf)
- Maryland Tributary Strategy Upper Western Shore Basin Summary Report for 1985 – 2005 Data – August 2007 (Online at: http://www.dnr.state.md.us/bay/pdfs/UWSBasinSum8505FINAL07.pdf)
- Total Maximum Daily Loads of Nitrogen and Phosphorous for Swan Creek Harford County Maryland – Approved by EPA in March of 2002 (Online at: http://www.mde.state.md.us/assets/document/TMDL/swan/SwanCr_main_final.pdf)
- Maryland Model Stormwater Management Ordinance – adopted June 2009, Amended April 2010 (Online at: http://www.mde.state.md.us/assets/document/Model%20Stormwater%20Ordinance%20w%20emerg%20reg%20revisions%2004-12-2010.pdf)
- Chapter 465: City of Aberdeen Stormwater Management Regulations – Adopted May 2010
- Maryland Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed – April, 2008 (Online at: http://www.mde.state.md.us/programs/Water/Documents/www.mde.state.md.us/assets/document/NutrientCap_Trading_Policy.pdf)

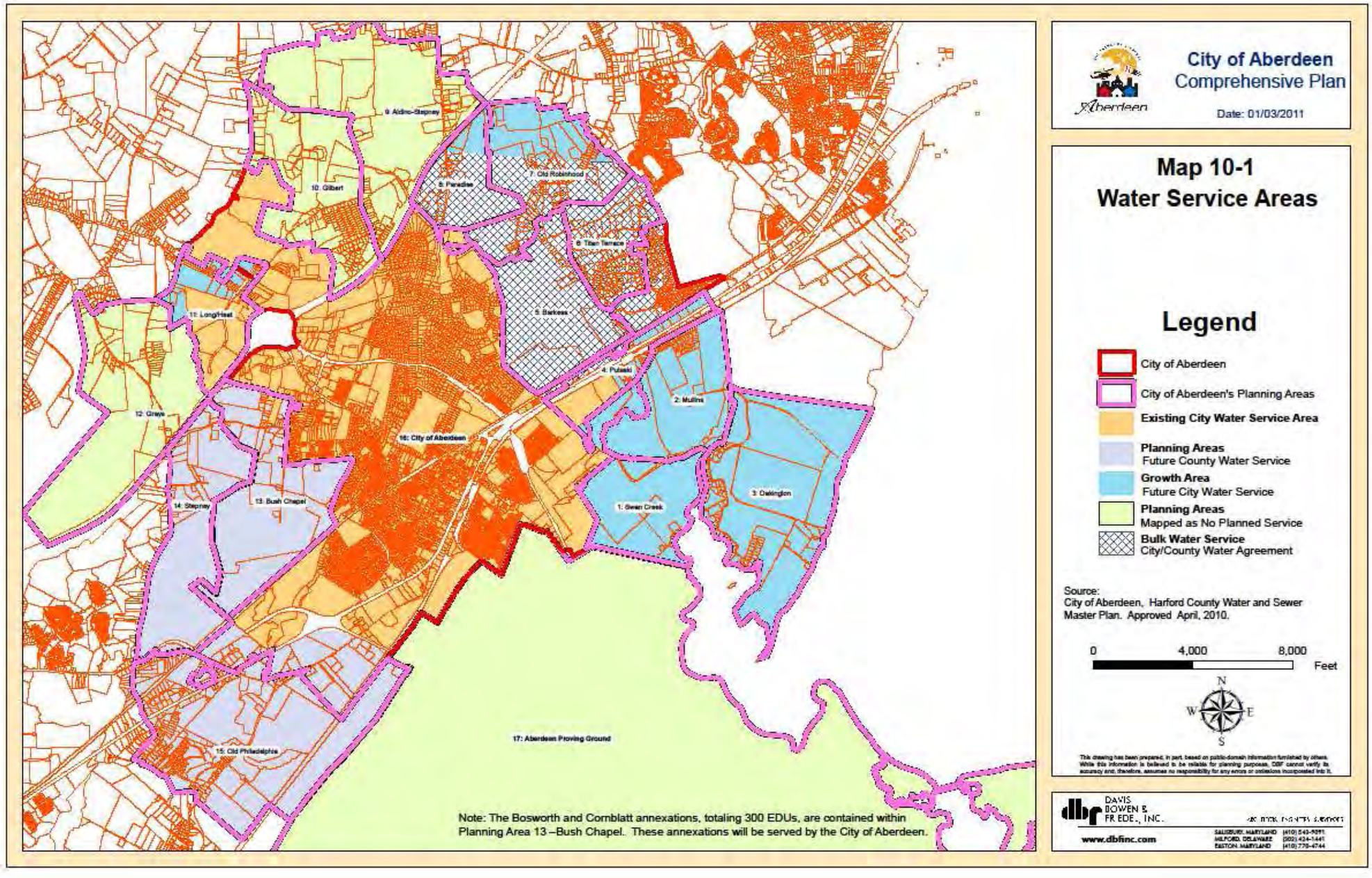
LIST OF APPENDICES

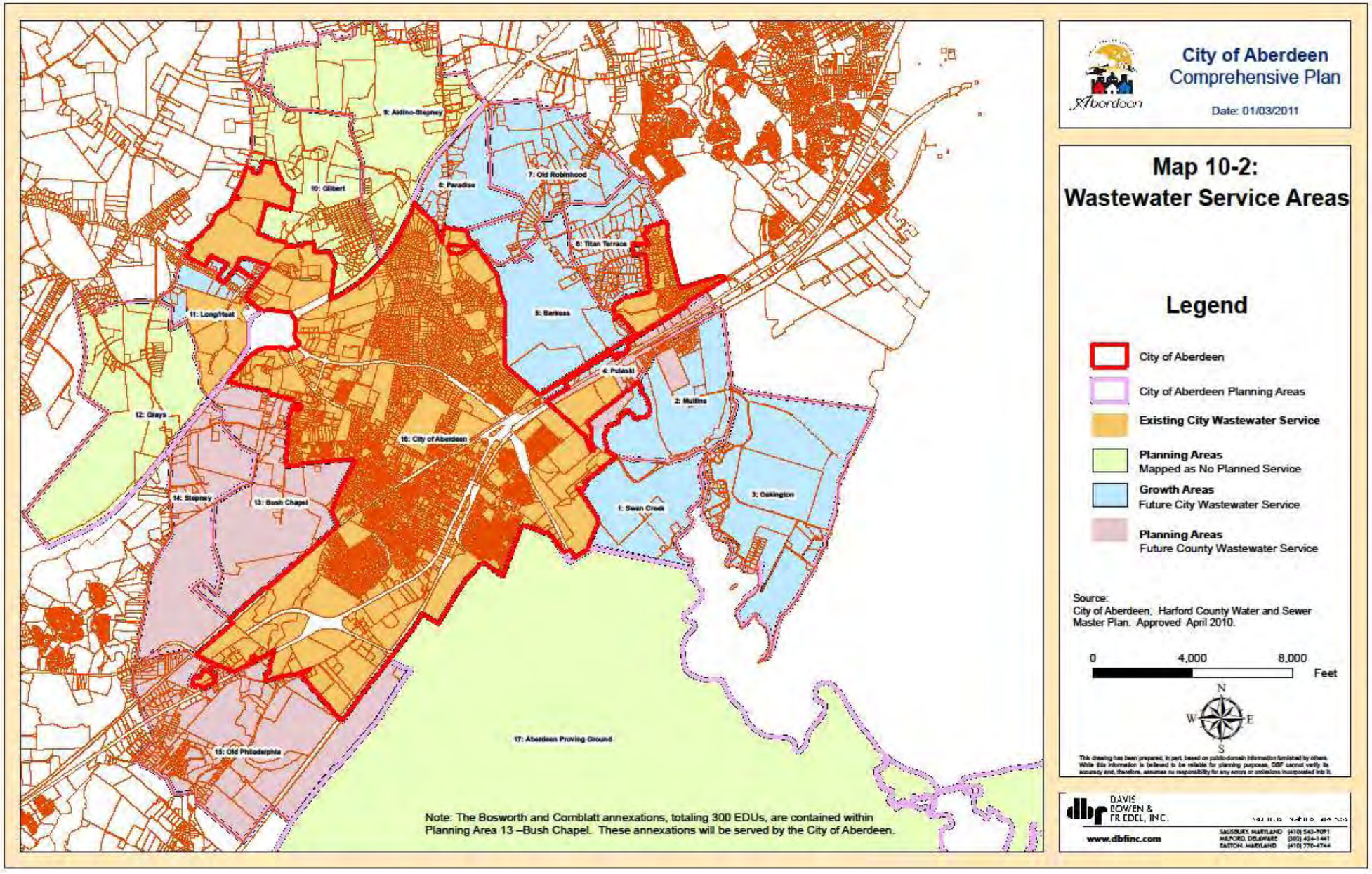
Maps

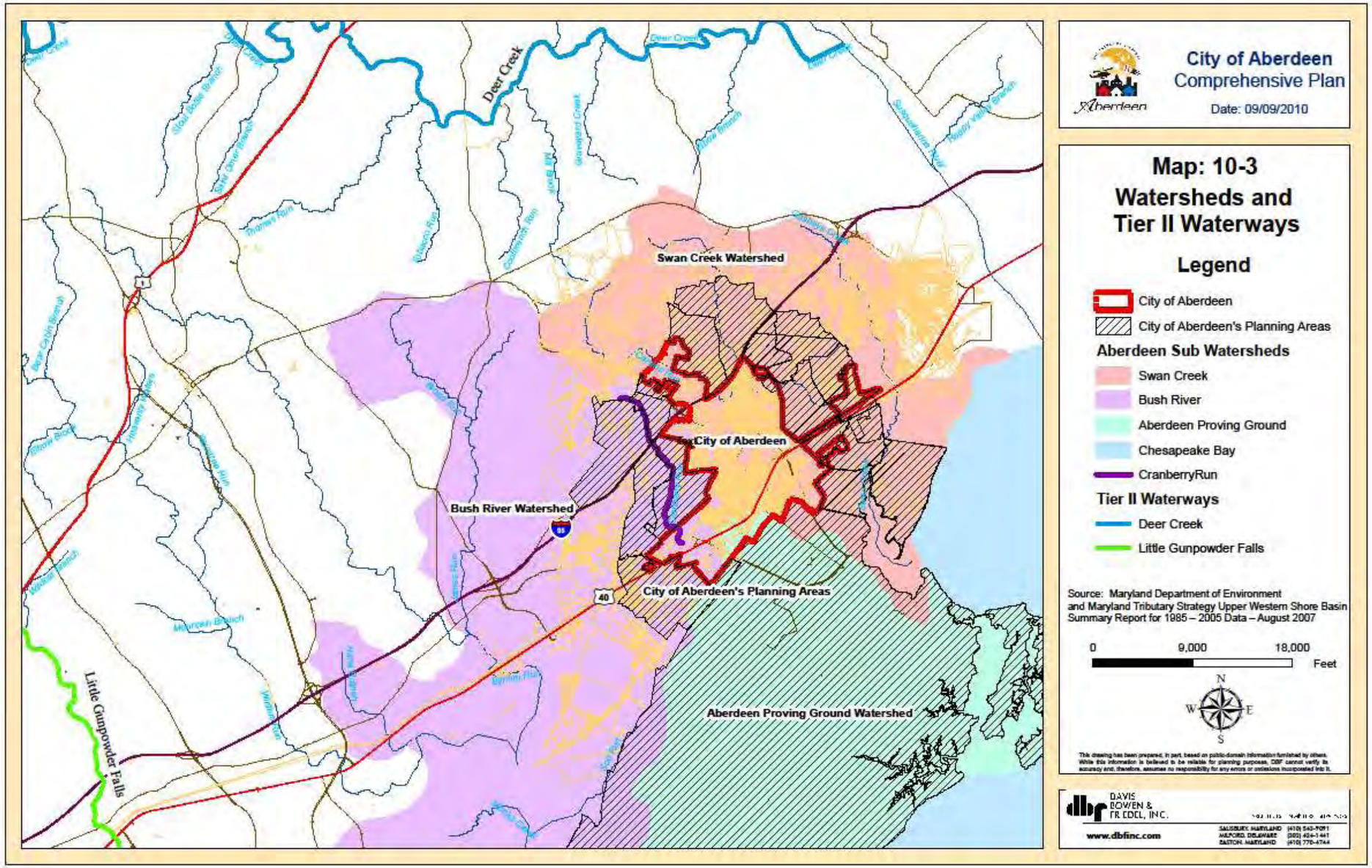
Map 10-1 Water Service Areas
Map 10-2: Wastewater Service Areas
Map 10-3: Watersheds and Tier II Waterways

Tables:

Detailed Water and Wastewater Calculations
Nutrient Loads Computation for the City of Aberdeen
- Scenario 1
- Scenario 2
- Scenario 3


9: Aldino-Stepney
10: Gilbert
8: Paradise
7: Old Robinhood
6: Tiber-Terrace
5: Barkess
11: Longheat
4: Pulaski
2: Mullins
12: Grove
16: City of Aberdeen
14: Stepney
13: Bush Chapel
1: Swan Creek
3: Owlington
17: Aberdeen Proving Ground
15: Old Philadelphia
Note: The Bosworth and Cornblatt annexations, totaling 300 EDUs, are contained within Planning Area 13 –Bush Chapel. These annexations will be served by the City of Aberdeen.
City of Aberdeen
Comprehensive Plan
Date: 01/03/2011
Map 10-1
Water Service Areas
Legend
City of Aberdeen
City of Aberdeen's Planning Areas
Existing City Water Service Area
Planning Areas
Future County Water Service
Growth Area
Future City Water Service
Planning Areas
Mapped as No Planned Service
Bulk Water Service
City/County Water Agreement
Source:
City of Aberdeen, Harford County Water and Sewer Master Plan. Approved April, 2010.
0
4,000
8,000
Feet
N
W
E
S
This drawing has been prepared, in part, based on public-domain information furnished by others. While this information is believed to be reliable for planning purposes, DBF cannot verify its accuracy and, therefore, assumes no responsibility for any errors or omissions incorporated into it.
DAVIS BOWEN & FRIEDEL, INC.
www.dbfinc.com
SALISBURY, MARYLAND (410) 543-9091
MILFORD, DELAWARE (302) 424-1441
EASTON, MARYLAND (410) 770-6744


9: Aldino-Stepney
10: Gilbert
8: Paradise
7: Old Robinhood
6: Titan Terrace
11: Longhaul
5: Barkess
4: Pulaski
2: Mullins
12: Grays
16: City of Aberdeen
14: Stepney
13: Bush Chapel
1: Swan Creek
3: Oakington
17: Aberdeen Proving Ground
15: Old Philadelphia
Note: The Bosworth and Comblatt annexations, totaling 300 EDUs, are contained within Planning Area 13 –Bush Chapel. These annexations will be served by the City of Aberdeen.
City of Aberdeen
Comprehensive Plan
Date: 01/03/2011
Map 10-2:
Wastewater Service Areas
Legend
City of Aberdeen
City of Aberdeen Planning Areas
Existing City Wastewater Service
Planning Areas
Mapped as No Planned Service
Growth Areas
Future City Wastewater Service
Planning Areas
Future County Wastewater Service
Source:
City of Aberdeen, Harford County Water and Sewer Master Plan. Approved April 2010.
0
4,000
8,000
Feet
N
W
E
S
DAVIS BOWEN & FRIEDEL, INC.
www.dbfinc.com


Deer Creek
Swan Creek Watershed
City of Aberdeen
Bush River Watershed
City of Aberdeen's Planning Areas
Aberdeen Proving Ground Watershed
Little Gunpowder Falls
95
40
City of Aberdeen
Comprehensive Plan
Date: 09/09/2010
Map: 10-3
Watersheds and
Tier II Waterways
Legend
City of Aberdeen
City of Aberdeen's Planning Areas
Aberdeen Sub Watersheds
Swan Creek
Bush River
Aberdeen Proving Ground
Chesapeake Bay
CranberryRun
Tier II Waterways
Deer Creek
Little Gunpowder Falls
Source: Maryland Department of Environment
and Maryland Tributary Strategy Upper Western Shore Basin
Summary Report for 1985 – 2005 Data – August 2007
0
9,000
18,000
Feet
N
W
E
S
DAVIS BOWEN & FRIEDEL, INC.
www.dbfinc.com

Scenario 1 - Infill

Nutrient Loads for 2002 Landuse with 2002 Implementation of BMPs

Nonpoint Source Nutrient Loading	Land Use Information							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Land Use/Cover	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
	Nitrogen	**Nitrogen**	**Nitrogen**	**Nitrogen**	**Nitrogen**	**Nitrogen**	**Nitrogen**	**Nitrogen**
LULC11 (Low Density Residential)	615	625	267	267	17	17	899	909
LULC12 (Medium Density Residential)	121	145	87	87	143	143	351	375
LULC13 (High Density Residential)	174	180	48	48	36	36	258	264
LULC14 (Commercial)	537	550	134	134	43	43	714	727
LULC15 (Industrial)	79	85	394	394	38	38	511	517
LULC16 (Institutional)	100	140	41	41	73	73	214	254
LULC17 (Extractive)							0	0
LULC18 (Open Urban Land)	110	125		24	71	71	181	220
LULC21 (Cropland)	98	98	24		106	26	228	124
LULC22 (Pasture)							0	0
LULC23 (Orchards)							0	0
LULC24 (Feeding Operations)							0	0
LULC25 (Row and Garden Crops)							0	0
LULC41 (Deciduous Forest)							0	0
LULC42 (Evergreen Forest)							0	0
LULC43 (Mixed Forest)	570	456					570	456
LULC44 (Brush)							0	0
LULC50 (Water)							0	0
LULC60 (Wetlands)	31	31					31	31
LULC71 (Beaches)							0	0
LULC72 (Bare Rock)							0	0
LULC73 (Bare Ground)							0	0
LULC80 (Transportation)	188	188	160	160	90	90	438	438
LULC191 (Rural Residential)							0	0
LULC241 (Feeding Operations)							0	0
LULC242 (Agricultural Buildings)							0	0
TOTAL	2,623	2,623	1,155	1,155	617	537	4,395	4,315
Septic Systems								
Residential Septic Systems- **Number**, Conventional	16	0					16	0
Residential Septic Systems - **Number**, Denitrifying	0	0					0	0
Non-Residential Septic Systems- **Acres**, Conventional	0	0					0	0
Non-Residential Septic Systems- **Acres**, Denitrifying	0	0					0	0

	Nonpoint Source Loads							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
Percent	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Imperviou s	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitroge n	Nitroge n
0.14	5,423	5,511	2,354	2,354	150	150	7,927	8,016
0.28	1,045	1,252	751	751	1,235	1,235	3,031	3,239
0.41	1,473	1,524	406	406	305	305	2,184	2,235
0.72	4,330	4,435	1,081	1,081	347	347	5,758	5,863
0.53	657	706	3,275	3,275	316	316	4,247	4,297
0.34	856	1,198	351	351	625	625	1,831	2,174
0.02	0	0	0	0	0	0	0	0
0.09	977	1,110	0	213	631	631	1,608	1,954
0.00	1,539	1,539	377	0	1,664	408	3,580	1,947
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	855	684	0	0	0	0	855	684
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	47	47	0	0	0	0	47	47
0.00	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0
0.95	1,460	1,460	1,242	1,242	699	699	3,401	3,401
0.04	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
Sub Totals	**18,661**	**19,467**	**9,837**	**9,674**	**5,971**	**4,715**	**34,469**	**33,855**
N/A	154	0	0	0	0	0	154	0
N/A	0	0	0	0	0	0	0	0
N/A	0	0	0	0	0	0	0	0
N/A	0	0	0	0	0	0	0	0
Sub Totals	**154**	**0**	**0**	**0**	**0**	**0**	**154**	**0**
TOTAL	**18,815**	**19,467**	**9,837**	**9,674**	**5,971**	**4,715**	**34,623**	**33,855**

Change in Loads			
Aberdeen - Swan Creek	**Aberdeen - Bush River**	**Aberdeen - APG Watershed**	**Total**
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Nitrogen	**Nitrogen**	**Nitrogen**	**Nitrogen**
88	0	0	88
207	0	0	207
51	0	0	51
105	0	0	105
50	0	0	50
342	0	0	342
0	0	0	0
133	213	0	346
0	-377	-1,256	-1,633
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-171	0	0	-171
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
806	**-164**	**-1,256**	**-614**
-154	0	0	-154
0	0	0	0
0	0	0	0
0	0	0	0
-154	**0**	**0**	**-154**
652	**-164**	**-1,256**	**-768**

Impervious Cover		Open Space Agriculture		Open Space Forest	
Initial	Future	Initial	Future	Initial	Future
Acres	Acres	Acres	Acres	Acres	Acres
126	127				
98	105				
106	108				
514	523				
271	274				
73	86				
0	0				
16	20				
0	0	228	124		
0	0	0	0		
0	0	0	0		
0	0				
0	0	0	0		
0	0			0	0
0	0			0	0
0	0			570	456
0	0			0	0
0	0				
0	0				
0	0				
0	0				
0	0				
416	416				
0	0				
0	0	0	0		
0	0	0	0		
1,620	**1,660**	**228**	**124**	**570**	**456**

Nonpoint Source Nutrient Loading	Land Use Information							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Land Use/Cover	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
	Phosphorus	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**
LULC11 (Low Density Residential)	615	625	267	267	17	17	899	909
LULC12 (Medium Density Residential)	121	145	87	87	143	143	351	375
LULC13 (High Density Residential)	174	180	48	48	36	36	258	264
LULC14 (Commercial)	537	550	134	134	43	43	714	727
LULC15 (Industrial)	79	85	394	394	38	38	511	517
LULC16 (Institutional)	100	140	41	41	73	73	214	254
LULC17 (Extractive)	0	0	0	0	0	0	0	0
LULC18 (Open Urban Land)	110	125	0	24	71	71	181	220
LULC21 (Cropland)	98	98	24	0	106	26	228	124
LULC22 (Pasture)	0	0	0	0	0	0	0	0
LULC23 (Orchards)	0	0	0	0	0	0	0	0
LULC24 (Feeding Operations)	0	0	0	0	0	0	0	0
LULC25 (Row and Garden Crops)	0	0	0	0	0	0	0	0
LULC41 (Deciduous Forest)	0	0	0	0	0	0	0	0
LULC42 (Evergreen Forest)	0	0	0	0	0	0	0	0
LULC43 (Mixed Forest)	570	456	0	0	0	0	570	456
LULC44 (Brush)	0	0	0	0	0	0	0	0
LULC50 (Water)	0	0	0	0	0	0	0	0
LULC60 (Wetlands)	31	31	0	0	0	0	31	31
LULC71 (Beaches)	0	0	0	0	0	0	0	0
LULC72 (Bare Rock)	0	0	0	0	0	0	0	0
LULC73 (Bare Ground)	0	0	0	0	0	0	0	0
LULC80 (Transportation)	188	188	160	160	90	90	438	438
LULC191 (Rural Residential)	0	0	0	0	0	0	0	0
LULC241 (Feeding Operations)	0	0	0	0	0	0	0	0
LULC242 (Agricultural Buildings)	0	0	0	0	0	0	0	0
TOTALs	**2,623**	**2,623**	**1,155**	**1,155**	**617**	**537**	**4,395**	**4,315**

	Point Source Information	Initial	Future	Change	% change
	Total Nitrogen Load (lb/yr)	22,380	48,706	26,325	118
	Total Phosphorus Load (lb/yr)	1,679	3,653	1,974	118

	Nonpoint Source Loads							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
Percent	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Impervious	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus
0.14	735	747	319	319	20	20	1,074	1,086
0.28	131	157	94	94	155	155	380	406
0.41	170	176	47	47	35	35	252	258
0.72	390	399	97	97	31	31	518	528
0.53	69	75	347	347	33	33	450	455
0.34	103	145	42	42	75	75	221	262
0.02	0	0	0	0	0	0	0	0
0.09	136	154	0	30	88	88	224	272
0.00	106	106	26	0	115	28	247	134
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	13	10	0	0	0	0	13	10
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	1	1	0	0	0	0	1	1
0.00	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0
0.95	102	102	86	86	49	49	237	237
0.04	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
TOTALs	1,955	2,071	1,059	1,062	601	515	3,615	3,648

Change in Loads			
Aberdeen - Swan Creek	**Aberdeen - Bush River**	**Aberdeen - APG Watershed**	**Total**
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Phosphorus	**Phosphorus**	**Phosphorus**	**Phosphorus**
12	0	0	12
26	0	0	26
6	0	0	6
9	0	0	9
5	0	0	5
41	0	0	41
0	0	0	0
19	30	0	48
0	-26	-87	-112
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-3	0	0	-3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
116	**4**	**-87**	**33**

Change in Loads			
Aberdeen - Swan Creek	**Aberdeen - Bush River**	**Aberdeen - APG Watershed**	**Total**
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Phosphorus	**Phosphorus**	**Phosphorus**	**Phosphorus**
12	0	0	12
26	0	0	26
6	0	0	6
9	0	0	9
5	0	0	5
41	0	0	41
0	0	0	0
19	30	0	48
0	-26	-87	-112
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-3	0	0	-3
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
116	**4**	**-87**	**33**

Impervious Cover		Impervious Cover		Impervious Cover		Impervious Cover	
Total		Swan Creek		Bush River		APG Watershed	
Initial	Future	Initial	Future	Initial	Future	Initial	Future
Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
15,453	817,191	86	88	37	37	2	2
53,625	131,625	34	41	24	24	40	40
9,504	68,112	71	74	20	20	15	15
31,261	519,078	387	396	96	96	31	31
19,646	264,187	42	45	209	209	20	20
18,542	54,356	34	48	14	14	25	25
0	0	0	0	0	0	0	0
15,620	39,820	10	11	0	2	6	6
3,224	28,272	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	259,920	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	961	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
39,420	191,844	179	179	152	152	86	86
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
206,295	**2,375,366**	**842**	**880**	**553**	**555**	**225**	**225**

FINAL

Land Use (acres) by Generalized Land Use/Land Cover

Land Use/Cover	Initial (acres)	Future (acres)	Change (acres)
Low Density	899	909	10
Medium Density	351	375	24
High Density	258	264	6
Commercial/Industrial	1,225	1,244	19
Agriculture*	228	124	-104
Forest/Wetlands	601	487	-114
Water	0	0	0
Other**	833	912	79
Total Area	4,395	4,315	-80

* Agriculture is made up of Cropland, Pasture, Orchards, Feeding Operations, Agricultural Buildings, and Row & Gard
** Other land uses include Institutional, Extractive, Open Urban, Beaches, Bare Rock and Bare Ground.

Land Use Area Summary

Land Use/Cover	Initial (Acres)	Future (Acres)	Change (acres)
Development	3,171	3,230	59
Agriculture*	228	124	-104
Forest	601	487	-114
Water	0	0	0
Other**	395	474	79
Total Area	4,395	4,315	-80
Residential Septic (EDUs)	16	0	-16
Non-Residential Septic (EDUs)	0	0	0

Nitrogen Loading Summary

Land Use/Cover	Initial (Lbs/Yr)	Future (Lbs/Yr)	Change (Lbs/Yr)
Development	26,549	27,050	501
Agriculture	3,580	1,947	-1,633
Forest	902	731	-171
Water	0	0	0
Other**	3,439	4,128	689
Total Terrestrial Load	**34,469**	**33,855**	**-614**
Residential Septic (EDUs)	154	0	-154
Non-Residential Septic (EDUs)	0	0	0
Total Septic Load	**154**	**0**	**-154**
Total NPS Nitrogen Load	**34,623**	**33,855**	**-768**

Phosphorus Loading Summary

Land Use/Cover	Initial (Lbs/Yr)	Future (Lbs/Yr)	Change (Lbs/Yr)
Development	2,910	2,969	58
Agriculture	247	134	-112
Forest	14	11	-3
Water	0	0	0
Other**	445	534	90
Total NPS Phosphorus Load	**3,615**	**3,648**	**33**

2 (34,554 EDU's) Nutrient Loads for 2002 Landuse with 2002 Implementation of BMPs

urce Nutrient Loading	Land Use Information							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
	Initial	Future	Initial	Future	Initial	Future	Initial	Fut
Cover	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(ac
	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitro
y Density Residential)	1,321	2,036	685	633	17	17	2,023	
dium Density Residential)	121	927	87	537	143	223	351	
n Density Residential)	174	180	50	48	36	36	260	
mmercial)	607	662	248	283	43	43	898	
ustrial)	94	195	770	589	38	38	902	
itutional)	216	244	75	101	73	73	364	
ractive)	30	10			0	0	30	
en Urban Land)	110	415	0	169	71	71	181	
pland)	2,029	636	495	242	106	26	2,630	
ture)	150	40	419	319	0	0	569	
hards)	0	0	0	0	0	0	0	
ding Operations)	0	0	0	0	0	0	0	
v and Garden Crops)	0	0	0	0	0	0	0	
ciduous Forest)	0	0	0	0	0	0	0	
rgreen Forest)	0	0	0	0	0	0	0	
ed Forest)	2,174	739	1,239	1,055	0	0	3,413	
sh)	140	0	17	0	0	0	157	
ter)	10	10	0	0	0	0	10	
tlands)	186	186	0	0	0	0	186	
aches)	0	0	0	0	0	0	0	
e Rock)	0	0	0	0	0	0	0	
e Ground)	0	0	0	0	0	0	0	
nsportation)	323	609	236	345	90	90	649	
ural Residential)	0	0	0	0	0	0	0	
eding Operations)	0	0	0	0	0	0	0	
ricultural Buildings)	0	0	0	0	0	0	0	
TOTAL	7,685	6,889	4,321	4,321	617	617	12,623	
stems								
eptic Systems- onventional	552	0	246				798	
eptic Systems - **Number**,	0	0					0	
tial Septic Systems- **Acres**,	34	0	136				170	
tial Septic Systems- **Acres**,	0	0					0	

Nonpoint Source Loads

	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
Percent	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Impervious	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen
0.14	11,649	17,953	6,040	5,582	150	150	17,839	23,685
0.28	1,045	8,006	751	4,638	1,235	1,926	3,031	14,569
0.41	1,473	1,524	423	406	305	305	2,201	2,235
0.72	4,895	5,338	2,000	2,282	347	347	7,241	7,967
0.53	781	1,621	6,399	4,895	316	316	7,497	6,832
0.34	1,849	2,088	642	864	625	625	3,115	3,577
0.02	269	90	0	0	0	0	269	90
0.09	977	3,686	0	1,501	631	631	1,608	5,818
0.00	31,855	9,985	7,771	3,799	1,664	408	41,291	14,193
0.00	1,455	388	4,064	3,094	0	0	5,519	3,482
0.00	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	3,261	1,109	1,859	1,583	0	0	5,120	2,691
0.00	210	0	26	0	0	0	236	0
0.00	0	0	0	0	0	0	0	0
0.00	279	279	0	0	0	0	279	279
0.00	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0
0.95	2,508	4,729	1,833	2,679	699	699	5,039	8,107
0.04	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
Sub Totals	**62,506**	**56,796**	**31,808**	**31,324**	**5,971**	**5,406**	**100,285**	**93,525**
N/A	5,306	0	2,365	0	0	0	7,671	0
N/A	0	0	0	0	0	0	0	0
N/A	292	0	1,166	0	0	0	1,458	0
N/A	0	0	0	0	0	0	0	0
Sub Totals	**5,598**	**0**	**3,531**	**0**	**0**	**0**	**9,129**	**0**

Change in Loads

Aberdeen - Swan Creek	Aberdeen - Bush River	Aberdeen - APG Watershe	Total
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Nitrogen	**Nitrogen**	**Nitrogen**	**Nitrogen**
6,305	-459	0	5,846
6,961	3,886	691	11,538
51	-17	0	34
444	282	0	726
839	-1,504	0	-665
240	223	0	462
-179	0	0	-179
2,709	1,501	0	4,211
-21,870	-3,972	-1,256	-27,098
-1,067	-970	0	-2,037
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-2,153	-276	0	-2,429
-210	-26	0	-236
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
2,221	846	0	3,067
0	0	0	0
0	0	0	0
0	0	0	0
-5,710	**-485**	**-565**	**-6,760**
-5,306	-2,365	0	-7,671
0	0	0	0
-292	-1,166	0	-1,458
0	0	0	0
-5,598	**-3,531**	**0**	**-9,129**

Impervious Cover		Open Space Agriculture		Open Space Forest	
Initial	Future	Initial	Future	Initial	Future
Acres	Acres	Acres	Acres	Acres	Acres
283	376				
98	472				
107	108				
647	711				
478	436				
124	142				
1	0				
16	59				
0	0	2,630	904		
0	0	569	359		
0	0	0	0		
0	0				
0	0	0	0		
0	0			0	0
0	0			0	0
0	0			3,413	1,794
0	0			157	0
0	0				
0	0				
0	0				
0	0				
0	0				
617	992				
0	0				
0	0	0	0		
0	0	0	0		
2,370	**3,297**	**3,199**	**1,263**	**3,570**	**1,794**

Source Nutrient Loading

Land Use Information

/Cover	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
	Initial	Future	Initial	Future	Initial	Future	Initial	Futu
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acr
	Phosphorus	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosphorus**	**Phosp**
Low Density Residential)	1,321	2,036	685	633	17	17	2,023	
Medium Density Residential)	121	927	87	537	143	223	351	
High Density Residential)	174	180	50	48	36	36	260	
Commercial)	607	662	248	283	43	43	898	
ndustrial)	94	195	770	589	38	38	902	
nstitutional)	216	244	75	101	73	73	364	
Extractive)	30	10	0	0	0	0	30	
Open Urban Land)	110	415	0	169	71	71	181	
Cropland)	2,029	636	495	242	106	26	2,630	
Pasture)	150	40	419	319	0	0	569	
Orchards)	0	0	0	0	0	0	0	
Feeding Operations)	0	0	0	0	0	0	0	
Row and Garden Crops)	0	0	0	0	0	0	0	
Deciduous Forest)	0	0	0	0	0	0	0	
Evergreen Forest)	0	0	0	0	0	0	0	
Mixed Forest)	2,174	739	1,239	1,055	0	0	3,413	
Brush)	140	0	17	0	0	0	157	
Water)	10	10	0	0	0	0	10	
Wetlands)	186	186	0	0	0	0	186	
Beaches)	0	0	0	0	0	0	0	
Bare Rock)	0	0	0	0	0	0	0	
Bare Ground)	0	0	0	0	0	0	0	
Transportation)	323	609	236	345	90	90	649	
(Rural Residential)	0	0	0	0	0	0	0	
(Feeding Operations)	0	0	0	0	0	0	0	
(Agricultural Buildings)	0	0	0	0	0	0	0	
TOTALs	**7,685**	**6,889**	**4,321**	**4,321**	**617**	**617**	**12,623**	

	Point Source Information	Initial	Future	Change	% Change
	Total Nitrogen Load (lb/yr)	22,380	48,706	26,325	118
	Total Phosphorus Load (lb/yr)	1,679	3,653	1,974	118

Nonpoint Source Loads

	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
Percent	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Impervious	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus
0.14	1,578	2,433	818	756	20	20	2,417	3,209
0.28	131	1,003	94	581	155	241	380	1,825
0.41	170	176	49	47	35	35	254	258
0.72	441	481	180	206	31	31	652	717
0.53	83	172	677	518	33	33	793	723
0.34	223	252	77	104	75	75	376	432
0.02	39	13	0	0	0	0	39	13
0.09	136	513	0	209	88	88	224	809
0.00	2,194	688	535	262	115	28	2,844	978
0.00	214	57	596	454	0	0	810	511
0.00	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	49	17	28	24	0	0	77	40
0.00	3	0	0	0	0	0	4	0
0.00	0	0	0	0	0	0	0	0
0.00	4	4	0	0	0	0	4	4
0.00	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0
0.95	175	329	128	186	49	49	351	564
0.04	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
TOTALs	5,439	6,136	3,184	3,347	601	601	9,224	10,084

Change in Loads

Aberdeen - Swan Creek	Aberdeen - Bush River	Aberdeen - APG Watershe	Total
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Phosphorus	**Phosphorus**	**Phosphorus**	**Phosphorus**
854	-62	0	792
872	487	87	1,445
6	-2	0	4
40	25	0	65
89	-159	0	-70
29	27	0	56
-26	0	0	-26
377	209	0	585
-1,506	-274	-87	-1,866
-157	-142	0	-299
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-32	-4	0	-36
-3	0	0	-4
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
155	59	0	213
0	0	0	0
0	0	0	0
0	0	0	0
697	**163**	**0**	**860**

Impervious Cover		Impervious Cover		Impervious Cover		Impervious Cover	
Total		Swan Creek		Bush River		APG Watershed	
Initial	Future	Initial	Future	Initial	Future	Initial	Future
Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
45,662	5,433,778	185	285	96	89	2	2
376,201	592,137	34	260	24	150	40	62
9,504	68,640	71	74	21	20	15	15
42,484	887,224	437	477	179	204	31	31
31,236	741,444	50	103	408	312	20	20
30,514	152,152	73	83	26	34	25	25
0	300	1	0	0	0	0	0
46,505	118,555	10	37	0	15	6	6
23,504	2,377,520	0	0	0	0	0	0
0	204,271	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	6,122,922	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	100	0	0	0	0	0	0
0	34,596	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
93,960	677,556	307	579	224	328	86	86
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
699,570	**17,411,195**	**1,168**	**1,897**	**977**	**1,152**	**225**	**247**

FINAL

Land Use (acres) by Generalized Land Use/Land Cover

Land Use/Cover	Initial (acres)	Future (acres)	Change (acres)
Low Density	2,023	2,686	663
Medium Density	351	1,687	1,336
High Density	260	264	4
Commercial/Industrial	1,800	1,810	10
Agriculture*	3,199	1,263	-1,936
Forest/Wetlands	3,756	1,980	-1,776
Water	10	10	0
Other**	1,224	2,127	903
Total Area	12,623	11,827	-796

* Agriculture is made up of Cropland, Pasture, Orchards, Feeding Operations, Agricultural Buildings, and Row & Garden Crops
** Other land uses include Institutional, Extractive, Open Urban, Beaches, Bare Rock and Bare Ground.

Land Use Area Summary

Land Use/Cover	Initial (Acres)	Future (Acres)	Change (acres)
Development	5,083	7,491	2,408
Agriculture*	3,199	1,263	-1,936
Forest	3,756	1,980	-1,776
Water	10	10	0
Other**	575	1,083	508
Total Area	12,623	11,827	-796
Residential Septic (EDUs)	798	0	-798
Non-Residential Septic (EDUs)	425	0	-425

Nitrogen Loading Summary

Land Use/Cover	Initial (Lbs/Yr)	Future (Lbs/Yr)	Change (Lbs/Yr)
Development	42,849	63,395	20,546
Agriculture	46,810	17,675	-29,135
Forest	5,634	2,970	-2,664
Water	0	0	0
Other**	4,992	9,485	4,493
Total Terrestrial Load	**100,285**	**93,525**	**-6,760**
Residential Septic (EDUs)	7,671	0	-7,671
Non-Residential Septic (EDUs)	1,458	0	-1,458
Total Septic Load	**9,129**	**0**	**-9,129**
Total NPS Nitrogen Load	**109,413**	**93,525**	**-15,888**

Phosphorus Loading Summary

Land Use/Cover	Initial (Lbs/Yr)	Future (Lbs/Yr)	Change (Lbs/Yr)
Development	4,847	7,297	2,450
Agriculture	3,654	1,489	-2,165
Forest	84	44	-40
Water	0	0	0
Other**	638	1,254	615
Total NPS Phosphorus Load	**9,224**	**10,084**	**860**

3 (10,743 EDU's)

Nutrient Loads for 2002 Landuse with 2002 Implementation of BMPs

urce Nutrient Loading	Land Use Information							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Cover	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen
Density Residential)	1,321	1,496	685	831	17	17	2,023	2,344
um Density Residential)	121	492	87	87	143	223	351	802
Density Residential)	174	180	50	48	36	36	260	264
mercial)	607	615	248	273	43	43	898	931
strial)	94	99	770	770	38	38	902	907
utional)	216	305	75	93	73	73	364	471
active)	30	10			0	0	30	10
n Urban Land)	110	307	0	114	71	71	181	492
land)	2,029	1,419	495	242	106	26	2,630	1,687
ure)	150	40	419	319	0	0	569	359
ards)	0	0	0	0	0	0	0	0
ding Operations)	0	0	0	0	0	0	0	0
and Garden Crops)	0	0	0	0	0	0	0	0
duous Forest)	0	0	0	0	0	0	0	0
green Forest)	0	0	0	0	0	0	0	0
d Forest)	2,174	1,788	1,239	1,173	0	0	3,413	2,961
h)	140	140	17	0	0	0	157	140
er)	10	10	0	0	0	0	10	10
ands)	186	186	0	0	0	0	186	186
ches)	0	0	0	0	0	0	0	0
Rock)	0	0	0	0	0	0	0	0
Ground)	0	0	0	0	0	0	0	0
sportation)	323	476	236	282	90	90	649	848
al Residential)	0	0	0	0	0	0	0	0
eding Operations)	0	0	0	0	0	0	0	0
icultural Buildings)	0	0	0	0	0	0	0	0
TOTAL	7,685	7,563	4,321	4,232	617	617	12,623	12,412
tems								
ptic Systems- nventional	552	0	246				798	0
ptic Systems - **Number**,	0	0					0	0
al Septic Systems- **Acres**,	34	0	136				170	0
al Septic Systems- **Acres**,	0	0					0	0

Nonpoint Source Loads

	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
Percent	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Impervious	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen	Nitrogen
0.14	11,649	13,192	6,040	7,328	150	150	17,839	20,669
0.28	1,045	4,249	751	751	1,235	1,926	3,031	6,926
0.41	1,473	1,524	423	406	305	305	2,201	2,235
0.72	4,895	4,959	2,000	2,201	347	347	7,241	7,508
0.53	781	823	6,399	6,399	316	316	7,497	7,538
0.34	1,849	2,610	642	796	625	625	3,115	4,031
0.02	269	90	0	0	0	0	269	90
0.09	977	2,727	0	1,013	631	631	1,608	4,370
0.00	31,855	22,278	7,771	3,799	1,664	408	41,291	26,486
0.00	1,455	388	4,064	3,094	0	0	5,519	3,482
0.00	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	3,261	2,682	1,859	1,760	0	0	5,120	4,442
0.00	210	210	26	0	0	0	236	210
0.00	0	0	0	0	0	0	0	0
0.00	279	279	0	0	0	0	279	279
0.00	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0
0.95	2,508	3,696	1,833	2,190	699	699	5,039	6,585
0.04	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
Sub Totals	**62,506**	**59,707**	**31,808**	**29,738**	**5,971**	**5,406**	**100,285**	**94,851**
N/A	5,306	0	2,365	0	0	0	7,671	0
N/A	0	0	0	0	0	0	0	0
N/A	292	0	1,166	0	0	0	1,458	0
N/A	0	0	0	0	0	0	0	0
Sub Totals	**5,598**	**0**	**3,531**	**0**	**0**	**0**	**9,129**	**0**

Change in Loads

Aberdeen - Swan Creek	Aberdeen - Bush River	Aberdeen - APG Watershe	Total
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Nitrogen	**Nitrogen**	**Nitrogen**	**Nitrogen**
1,543	1,287	0	2,831
3,204	0	691	3,895
51	-17	0	34
65	202	0	266
42	0	0	42
762	154	0	916
-179	0	0	-179
1,750	1,013	0	2,763
-9,577	-3,972	-1,256	-14,805
-1,067	-970	0	-2,037
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-579	-99	0	-678
0	-26	0	-26
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1,188	357	0	1,545
0	0	0	0
0	0	0	0
0	0	0	0
-2,799	**-2,071**	**-565**	**-5,434**
-5,306	-2,365	0	-7,671
0	0	0	0
-292	-1,166	0	-1,458
0	0	0	0
-5,598	**-3,531**	**0**	**-9,129**
-8,396	**-5,601**	**-565**	**-14,563**

Impervious Cover		Open Space Agriculture		Open Space Forest	
Initial	Future	Initial	Future	Initial	Future
Acres	Acres	Acres	Acres	Acres	Acres
283	328				
98	225				
107	108				
647	670				
478	481				
124	160				
1	0				
16	44				
0	0	2,630	1,687		
0	0	569	359		
0	0	0	0		
0	0				
0	0	0	0		
0	0			0	0
0	0			0	0
0	0			3,413	2,961
0	0			157	140
0	0				
0	0				
0	0				
0	0				
0	0				
617	806				
0	0				
0	0	0	0		
0	0	0	0		
2,370	**2,822**	**3,199**	**2,046**	**3,570**	**3,101**

onpoint Source Nutrient Loading

Land Use Information

and Use/Cover	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
	Initial (acres)	Future (acres)	Initial (acres)	Future (acres)	Initial (acres)	Future (acres)	Initial (acres)	
	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Ph
ULC11 (Low Density Residential)	1,321	1,496	685	831	17	17	2,023	
ULC12 (Medium Density Residential)	121	492	87	87	143	223	351	
ULC13 (High Density Residential)	174	180	50	48	36	36	260	
ULC14 (Commercial)	607	615	248	273	43	43	898	
ULC15 (Industrial)	94	99	770	770	38	38	902	
ULC16 (Institutional)	216	305	75	93	73	73	364	
ULC17 (Extractive)	30	10	0	0	0	0	30	
ULC18 (Open Urban Land)	110	307	0	114	71	71	181	
ULC21 (Cropland)	2,029	1,419	495	242	106	26	2,630	
ULC22 (Pasture)	150	40	419	319	0	0	569	
ULC23 (Orchards)	0	0	0	0	0	0	0	
ULC24 (Feeding Operations)	0	0	0	0	0	0	0	
ULC25 (Row and Garden Crops)	0	0	0	0	0	0	0	
ULC41 (Deciduous Forest)	0	0	0	0	0	0	0	
ULC42 (Evergreen Forest)	0	0	0	0	0	0	0	
ULC43 (Mixed Forest)	2,174	1,788	1,239	1,173	0	0	3,413	
ULC44 (Brush)	140	140	17	0	0	0	157	
ULC50 (Water)	10	10	0	0	0	0	10	
ULC60 (Wetlands)	186	186	0	0	0	0	186	
ULC71 (Beaches)	0	0	0	0	0	0	0	
ULC72 (Bare Rock)	0	0	0	0	0	0	0	
ULC73 (Bare Ground)	0	0	0	0	0	0	0	
ULC80 (Transportation)	323	476	236	282	90	90	649	
ULC191 (Rural Residential)	0	0	0	0	0	0	0	
ULC241 (Feeding Operations)	0	0	0	0	0	0	0	
ULC242 (Agricultural Buildings)	0	0	0	0	0	0	0	
TOTALs	7,685	7,563	4,321	4,232	617	617	12,623	

Point Source Information	Initial	Future	Change	% change
Total Nitrogen Load (lb/yr)	22,380	48,706	26,325	118
Total Phosphorus Load (lb/yr)	1,679	3,653	1,974	118

	Nonpoint Source Loads							
	Aberdeen - Swan Creek		Aberdeen - Bush River		Aberdeen - APG Watershed		TOTAL	
Percent	Initial	Future	Initial	Future	Initial	Future	Initial	Future
Impervious	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr
	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus	Phosphorus
0.14	1,578	1,787	818	993	20	20	2,417	2,801
0.28	131	532	94	94	155	241	380	868
0.41	170	176	49	47	35	35	254	258
0.72	441	447	180	198	31	31	652	676
0.53	83	87	677	677	33	33	793	798
0.34	223	315	77	96	75	75	376	487
0.02	39	13	0	0	0	0	39	13
0.09	136	379	0	141	88	88	224	608
0.00	2,194	1,534	535	262	115	28	2,844	1,824
0.00	214	57	596	454	0	0	810	511
0.00	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	0	0	0	0	0	0	0	0
0.00	49	40	28	26	0	0	77	67
0.00	3	3	0	0	0	0	4	3
0.00	0	0	0	0	0	0	0	0
0.00	4	4	0	0	0	0	4	4
0.00	0	0	0	0	0	0	0	0
1.00	0	0	0	0	0	0	0	0
0.09	0	0	0	0	0	0	0	0
0.95	175	257	128	152	49	49	351	458
0.04	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
0.02	0	0	0	0	0	0	0	0
TOTALs	5,439	5,632	3,184	3,141	601	601	9,224	9,375

Change in Loads

Aberdeen - Swan Creek	Aberdeen - Bush River	Aberdeen - APG Watershe	Total
Future	Future	Future	Future
lbs/yr	lbs/yr	lbs/yr	lbs/yr
Phosphorus	Phosphorus	Phosphorus	Phosphorus
209	174	0	384
401	0	87	488
6	-2	0	4
6	18	0	24
4	0	0	4
92	19	0	111
-26	0	0	-26
243	141	0	384
-660	-274	-87	-1,020
-157	-142	0	-299
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
-9	-1	0	-10
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
83	25	0	108
0	0	0	0
0	0	0	0
0	0	0	0
194	**-43**	**0**	**151**

Impervious Cover		Impervious Cover		Impervious Cover		Impervious Cover	
Total		Swan Creek		Bush River		APG Watershed	
Initial	Future	Initial	Future	Initial	Future	Initial	Future
Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
283	328	185	209	96	116	2	2
98	225	34	138	24	24	40	62
107	108	71	74	21	20	15	15
647	670	437	443	179	197	31	31
478	481	50	52	408	408	20	20
124	160	73	104	26	32	25	25
1	0	1	0	0	0	0	0
16	44	10	28	0	10	6	6
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
617	806	307	452	224	268	86	86
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2,370	2,822	1,168	1,500	977	1,075	225	247

FINAL

Land Use (acres) by Generalized Land Use/Land Cover

Land Use/Cover	Initial (acres)	Future (acres)	Change (acres)
Low Density	2,023	2,344	321
Medium Density	351	802	451
High Density	260	264	4
Commercial/Industrial	1,800	1,838	38
Agriculture*	3,199	2,046	-1,153
Forest/Wetlands	3,756	3,287	-469
Water	10	10	0
Other**	1,224	1,821	597
Total Area	12,623	12,412	-211

* Agriculture is made up of Cropland, Pasture, Orchards, Feeding Operations, Agricultural Buildings, and Row & Garden Crops
** Other land uses include Institutional, Extractive, Open Urban, Beaches, Bare Rock and Bare Ground.

Land Use Area Summary

Land Use/Cover	Initial (Acres)	Future (Acres)	Change (acres)
Development	5,083	6,096	1,013
Agriculture*	3,199	2,046	-1,153
Forest	3,756	3,287	-469
Water	10	10	0
Other**	575	973	398
Total Area	12,623	12,412	-211
Residential Septic (EDUs)	798	0	-798
Non-Residential Septic (EDUs)	425	0	-425

Nitrogen Loading Summary

Land Use/Cover	Initial (Lbs/Yr)	Future (Lbs/Yr)	Change (Lbs/Yr)
Development	42,849	51,461	8,612
Agriculture	46,810	29,968	-16,842
Forest	5,634	4,931	-704
Water	0	0	0
Other**	4,992	8,491	3,499
Total Terrestrial Load	**100,285**	**94,851**	**-5,434**
Residential Septic (EDUs)	7,671	0	-7,671
Non-Residential Septic (EDUs)	1,458	0	-1,458
Total Septic Load	**9,129**	**0**	**-9,129**
Total NPS Nitrogen Load	**109,413**	**94,851**	**-14,563**

Phosphorus Loading Summary

Land Use/Cover	Initial (Lbs/Yr)	Future (Lbs/Yr)	Change (Lbs/Yr)
Development	4,847	5,858	1,011
Agriculture	3,654	2,335	-1,319
Forest	84	74	-11
Water	0	0	0
Other**	638	1,107	469
Total NPS Phosphorus Load	**9,224**	**9,375**	**151**

Water Demand for the City of Aberdeen and Proposed Growth Areas

Location	EDU	City[4]		No Planned Service[6]		Total City Demand (City + No Planned Service)		County[5]		Bulk Water[8]		Total	
		Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)
Planning Area 16 - Existing[3]	5,940	1,485,000	2,361,150	0	0	1,485,000	2,361,150	0	0	0	0	1,485,000	2,361,150
Planning Area 16 - Infill[4]	5,290	1,322,500	2,102,775	0	0	1,322,500	2,102,775	0	0	0	0	1,322,500	2,102,775
Planning Area 1 - Swan Creek[4]	300	75,000	119,250	0	0	75,000	119,250	0	0	0	0	75,000	119,250
Planning Area 2 - Mullins[4, 7]	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning Area 3 - Oakington[4, 7]	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning Area 4 - Pulaski[4]	240	60,000	95,400	0	0	60,000	95,400	0	0	0	0	60,000	95,400
Planning Area 5 - Barkess[4, 8]	1,011	0	0	0	0	0	0	0	0	252,750	401,873	252,750	401,873
Planning Area 6 - Titan Terrace[4, 8]	223	0	0	0	0	0	0	0	0	55,750	88,643	55,750	88,643
Planning Area 7 - Old Robinhood[4, 8]	300	0	0	0	0	0	0	0	0	75,000	119,250	75,000	119,250
Planning Area 8 - Paradise[4, 8]	919	0	0	0	0	0	0	0	0	229,750	365,303	229,750	365,303
Planning Area 9 - Aldino-Stepney[6]	2,973	0	0	743,250	1,181,768	743,250	1,181,768	0	0	0	0	743,250	1,181,768
Planning Area 10 - Gilbert[6]	2,104	0	0	526,000	836,340	526,000	836,340	0	0	0	0	526,000	836,340
Planning Area 11 - Long / Heat[4]	400	100,000	159,000	0	0	100,000	159,000	0	0	0	0	100,000	159,000
Planning Area 12 - Grays[6, 7]	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning Area 13 - Bush Chapel[4, 17]	300	75,000	119,250	0	0	75,000	119,250	0	0	0	0	75,000	119,250
Planning Area 13 - Bush Chapel[5, 17]	1,973	0	0	0	0	0	0	493,250	784,268	0	0	493,250	784,268
Planning Area 14 - Stepney[5, 7]	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning Area 15 - Old Philadelphia[5, 7]	0	0	0	0	0	0	0	0	0	0	0	0	0
Planning Area 17 - Aberdeen Proving Ground[*]	0	0	0	0	0	0	0	0	0	0	0	0	0
New Demand	16,033	1,632,500	2,595,675	1,269,250	2,018,108	2,901,750	4,613,783	493,250	784,268	613,250	975,068	4,008,250	6,373,118
Total Demand (Existing + Future)	21,973 [16]	3,117,500	4,956,825	1,269,250	2,018,108	4,386,750	6,974,933	493,250	784,268	613,250	975,068	5,493,250	8,734,268

(1) Average Day Demands determined by 250 gpd/EDU
(2) Peaking Factor of 1.59 as determined from City records for years 2005-2009
(3) Existing EDUs based on average daily demand for years 2005-2009 divided by 250 gpd/EDU
(4) Identified in City DPW growth areas
(5) Identified to be provided by County water
(6) Areas mapped as "no planned service" in April 2010 Harford County Water & Sewer Master Plan
(7) Proposed EDU's for these growth areas is zero. Infrastructure extension to these areas is not expected in the near future.
(8) Identified to be provided water from County purchased bulk water
(9) Average day equals 12 hour pumping day
(10) Storage equals storage tanks plus wells equipped with backup power
(11) Based on average day of maximum month per water appropriations permit
(12) Assumes additional water sources are made available to allow maximum production of water treatment plant
(13) Average day demand during peak month of May 2007
(14) Assuming bulk water from County unavailable
(15) Average Month to Peak Month factor is 1.25; future average day of peak month equals future average day multiplied by 1.25
(16) 21,973 Total EDU's include 1973 EDUs to be served by the County leaving 20,000 EDUs to be served by the City of Aberdeen
(17) The Bosworth & Cornblatt annexations in the Planning Area 13 – Bush Chapel for a total of 300 EDUs which will be served by the City and the remaining EDUs will be served by the County.
* Aberdeen Proving Ground is included as Planning Area 17 but this area is not included in the Water and Sewer capacity calculations or Stormwater runoff calculations that are part of Water Resource Element

Well Capacity

Average Day-Permitted	1,500,000	gpd
Avg. Day of Max Month-Permitted	2,000,000	gpd
Maximum Pumping Day	2,571,840	gpd (actual pumping capacity of all the wells less largest well for 24 hours)
Water Treatment Plant Capacity	3,000,000	gpd
Max. day Bulk Water from County	900,000	gpd (maximum allowable water per current City-County agreement)
Avg. day Bulk Water from County	566,038	gpd (maximum allowable water divided by peaking factor of 1.59)
Water Storage	1,190,000	gallons
Wells pumping capacity with Backup power	1,445	gpm
Wells pumping capacity for the average day[6]	1,040,400.00	gpd
Total Storage[7]	2,230,400.00	gallons

Well Calculations for Existing Demand

Equal to Max pumping rate with largest well out of service[8]	2,000,000	gpd
Max. Day Demand	2,361,150	gpd
Water Capacity = Max day Wells + Max Bulk	2,900,000	gpd
Surplus of	538,850	gallons
Surplus of	1,356	EDUs
Max. Day Demand	2,361,150	
Water Capacity = WTP[9] + Max Bulk	3,900,000	
Surplus of	1,538,850	gallons
Surplus of	4,924	EDUs

Well Calculations for Future City Demand

Equal to Max pumping rate with largest well out of service[8]	2,000,000	gpd
Max. Day Demand (future City and Bulk water demand)	7,950,000	gpd
Water Capacity = Max day Wells + Max Bulk	2,900,000	gpd
Deficit of	5,050,000	gpd
Deficit of	16,160	EDUs
	3,507	gpm additional well capacity required
Max. Day Demand	7,950,000	gpd
Water Capacity = WTP[9] + Max Bulk	3,900,000	gpd
Deficit of	4,050,000	gpd
Deficit of	12,960	EDUs
	2,813	gpm additional well capacity required

Water Storage Calculations for Exisitng Demand

Equal to Avg. Day Demand during peak month plus fire flow (capacity includes wells/WTP on generator + Storage)

Avg. Day Peak Month Demand[10]	1,823,690	gallons
Fire Flow (2500 gpm for 3 hours)	450,000	gallons
Total Water Storage Required	2,273,690	gallons
Water Capacity = Tanks + Wells on backup Power + Avg. Bulk	2,796,438	gallons
Surplus of	522,748	gallons
Surplus of	2,091	EDUs
Water Capacity[11] = Tanks + Wells on backup Power	2,230,400	gallons
Deficit of	43,290	gallons
Deficit of	173	EDUs

Water Storage Calculations for Future City Demand

Equal to Avg. Day Demand during peak month plus fire flow (capacity includes wells/WTP on generator + Storage)

Avg. Day Demand Peak Month (future City and Bulk water demand)[12]	6,250,000	gallons
Fire Flow (2500 gpm for 3 hours)	450,000	gallons
Total Water Storage Required	6,700,000	gallons
Water Capacity = Tanks + Wells on backup Power + Avg. Bulk	2,796,438	gallons
Deficit of	3,903,562	gallons
Deficit of	15,614	EDUs
Water Capacity[11] = Tanks + Wells on backup Power	2,230,400	gallons
Deficit of	4,469,600	gallons
Deficit of	17,878	EDUs

Wastewater Flows for City of Aberdeen and Proposed Growth Areas

Location	EDU	City[4]		County[5]		No Planned Service[6]		Total		Total City (City+ No Planned Service)	
		Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)	Avg. Day (gpd)[1]	Peak Day[2] (gpd)
Planning Area 16 - Existing[3]	7,376	1,844,000	8,150,000[7]	0	0	0	0	1,844,000	8,150,000	1,844,000	8,150,000
Planning Area 16 - Infill[4]	3,854	963,500	3,854,000	0	0	0	0	963,500	3,854,000	963,500	3,854,000
Planning Area 1 - Swan Creek[4]	300	75,000	300,000	0	0	0	0	75,000	300,000	75,000	300,000
Planning Area 2 - Mullins[4, 7]	0	0	0	0	0	0	0	0	0	0	0
Planning Area 3 - Oakington[4, 7]	0	0	0	0	0	0	0	0	0	0	0
Planning Area 4 - Pulaski[4]	240	60,000	240,000	0	0	0	0	60,000	240,000	60,000	240,000
Planning Area 5 - Barkess[4, 8]	1,011	252,750	1,011,000	0	0	0	0	252,750	1,011,000	252,750	1,011,000
Planning Area 6 - Titan Terrace[4]	223	55,750	223,000	0	0	0	0	55,750	223,000	55,750	223,000
Planning Area 7 - Old Robinhood[4, 7]	300	75,000	300,000	0	0	0	0	75,000	300,000	75,000	300,000
Planning Area 8 - Paradise[4, 7]	919	229,750	919,000	0	0	0	0	229,750	919,000	229,750	919,000
Planning Area 9 - Aldino-Stepney[6]	2,973	0	0	0	0	743,250	2,973,000	743,250	2,973,000	743,250	2,973,000
Planning Area 10 - Gilbert[6]	2,104	0	0	0	0	526,000	2,104,000	526,000	2,104,000	526,000	2,104,000
Planning Area 11 - Long / Heat[4]	400	100,000	400,000	0	0	0	0	100,000	400,000	100,000	400,000
Planning Area 12 - Grays[6, 7]	0	0	0	0	0	0	0	0	0	0	0
Planning Area 13 - Bush Chapel[4, 12]	300	75,000	300,00	0	0			75,000	300,00	75,000	300,000
Planning Area 13 - Bush Chapel[5, 12]	1,973	0	0	493,250	1,973,000	0	0	493,250	1,973,000	0	0
Planning Area 14 - Stepney[5, 7]	0	0	0	0	0	0	0	0	0	0	0
Planning Area 15 - Old Philadelphia[5, 7]	0	0	0	0	0	0	0	0	0	0	0
Planning Area 17 - Aberdeen Proving Ground[*]	0	0	0	0	0	0	0	0	0	0	0
Total Future	14,597	1,886,750	7,547,000	493,250	1,973,000	1,269,250	5,077,000	3,649,250	14,597,000	3,156,000	12,624,000
Total (Existing + Future)	21,973 [11]	3,730,750	15,697,000	493,250	1,973,000	1,269,250	5,077,000	5,493,250	22,747,000	5,000,000	20,774,000

(1) Average Day Flows determined by 250 gpd/EDU
(2) Standard Peaking Factor of 4.0 used for infill and all new development
(3) Existing EDUs based on average daily flows for years 2005-2009 divided by 250 gpd/EDU
(4) Identified in City DPW growth areas
(5) Identified to be provided by County sewer
(6) Areas mapped as "no planned service" in April 2010 Harford County Water & Sewer Master Plan
(7) Proposed EDU's for these growth areas is zero. Infrastructure extension to these areas is not expected in the near future.
(8) Existing Peak Day flow measured during the month of December 2009 with a monthly rainfall of 6.23 inches.
(9) TN = Total Nitrogen; TP = Total Phosphorus
(10) BNR = Biological Nutrient Removal; ENR = Enhance Nutrient Removal
(11) 21,973 Total EDU's include 1973 EDUs to be served by the County leaving 20,000 EDUs to be served by the City of Aberdeen
(12) The Bosworth & Cornblatt annexations in the Planning Area 13 – Bush Chapel for a total of 300 EDUs which will be served by the City and remaining EDUs will be served by the County.
* Aberdeen Proving Ground is included as Planning Area 17 but this area is not included in the Water and Sewer capacity calculations or Stormwater runoff calculations that are part of Water Resource Element.

Wastewater Treatment Plant Capacity		
Average Day Permitted Flow	4,000,000	gpd
Peak Flow	6,000,000	gpd
TN[8] permitted	48,729	lbs/yr
TP[8] permitted	3,665	lbs/yr
Existing Flows		
Average Day	1,844,000	gpd
Surplus of	2,156,000	gpd
Surplus of	8,624	EDUs
Nutrients at Exisitng Flows		
TN 8 mg/l (BNR[9])	44,907	lbs/yr
TN 4 mg/l (ENR[9])	22,453	lbs/yr
TP 0.3 mg/l (ENR)	1,684	lbs/yr
Nutrients at Permitted Flow		
TN 8 mg/l (BNR)	97,411	lbs/yr
TN 4 mg/l (ENR)	48,706	lbs/yr
TP 0.3 mg/l (ENR)	3,653	lbs/yr

Future Flows (City service + No Planned Service)		
Average Day	5,000,000	gpd
Deficit of	1,000,000	gpd
Deficit of	4,000	EDUs
Total Nitrogen at Future Flows		
TN 4 mg/l (ENR)	60,882	lbs/yr
Excess of	12,513	lbs/yr
Required TN to meet permit limits	3.2	mg/l
Total Phosphorus at Future Flows		
TP 0.3 mg/l (ENR)	4,566	lbs/yr
Excess of	901	lbs/yr
Required TP to meet permit limits	0.241	mg/l

NUTRIENT LOADS COMPUTATION FOR THE CITY OF ABERDEEN

Chapter 11 – IMPLEMENTATION

OVERVIEW

The adoption of this Plan serves as a continuous growth management guide for Aberdeen. The Plan serves as the framework around which future land use decisions are based. Smart Growth principles, House Bill 1141, the Aberdeen Development Code, and subdivision and design requirements, are intended to direct the overall implementation of the Plan. Smart Growth principles include revitalizing existing communities, producing efficient compact forms of development, facilitating mixtures of community-based land uses, accommodating infill and redevelopment, encouraging centrally located and pedestrian accessible transportation, and providing a wide range of housing types.

IMPLEMENTATION AUTHORITY

Planning is a recognized governmental process, operating under the general objectives established by Article 66B. The City's Planning Commission, as an advisory committee to the Mayor and the City Council, is charged with the duties of developing and maintaining the Comprehensive Plan, administering the legal tools at its disposal for implementing the Plan, and carrying on other activities dealing with development in the City.

SMART GROWTH

In seeking the necessary growth balance within the community, local government officials have articulated their desire to prevent the overloading of public services and infrastructure that serve the existing citizens, businesses, and institutions of Aberdeen. In addressing Smart Growth related concerns found throughout the State, local officials and citizens have recognized that rapid growth and unstructured development do not necessarily reduce the local tax burden to pay for the additional services in demand. As a result, Aberdeen seeks creative growth management techniques to ensure that future growth is planned and adequate public facilities are provided for when development occurs.

DEVELOPMENT CODE

When the Plan has been adopted, zoning becomes the principle means available for giving it legal effect. The functions of zoning are to control the use of land and buildings and to regulate the density of development, in order to guide future land use patterns toward the goals outlined in the Plan. The description of Aberdeen’s zoning districts is found in Chapter 2- Land Use Element.

PUBLIC/PRIVATE PARTNERSHIPS

Aberdeen public officials, private landowners, and developers must have a clear understanding of the fiscal responsibilities (both public and private) and desired community benefits before engaging in a development project. This process must be structured so that the involved parties can fully explore planning issues, infrastructure needs, and site opportunities at the pre-planning level. These meetings should be conducted prior to submission of the preliminary subdivision plan or site development plan.

In order to create specific development projects which foster the land use planning goals of Aberdeen, certain land use objectives and project site design principles must be included in any development: (1) water and sewer planning; (2) internal and external land use relationships; (3) identifying building locations and grouping; (4) preserving open space and creating recreational opportunities; (5) establishing access and circulation systems; and (6) addressing Smart Growth principles. When viewed in its entirety, the City's Comprehensive Plan, facilities master plan, regulatory ordinances, development standards, and review processes must seek to optimize these objectives and principles.

CAPITAL IMPACTS

For some public infrastructure, standards have been established that define capacity. For example, State rated capacity for our classrooms, acceptable levels of traffic congestion, and average and maximum water or wastewater flows can be used to define the capabilities and limitations of schools, roads, and treatment facilities. If new development generates a greater impact than can be accommodated by existing infrastructure, it further degrades the level of service of local roads, and/or creates average daily water demands that exceed the wastewater treatment plant's design capacity. New or enlarged infrastructure is needed. In most cases, the City could continue to function without investing in new infrastructure, but the reduction in level of service would be evidenced by overcrowded schools and roads and periodic breakdowns of the wastewater treatment plant. For other public infrastructure, defining capacity is more difficult. At some point, as the demand for and on services increases, the facilities that house or supply these services become inadequate, and the level of service declines. The exact point at which this happens is often difficult to pin down.

The City should consider the adoption of impact fees that are dedicated to capital expenses, not the cost of operations and maintenance (which is generally supported by taxes or user fees). In turn, the impact fee must be reasonable. The "rational nexus test" has evolved as the most common standard for establishing whether impact fees are reasonable. The test requires that: (1) fees charged are correlated with needs attributable to the new development; (2) the level of fees relates to the benefits that will accrue to the development; (3) the funded capital improvements are established through coherent plans or impact assessment methods; and (4) collection and expenditure of impact fees must be tracked separately from other municipal revenues and expenditures. To be legally acceptable, approaches to setting impact fees must conform to the

rational nexus test. To be useful, an approach must also reflect the current state-of-the-art in defining capacity standards and apportioning costs. Impact fee methodologies involve assumptions about the levels of demand that can be supported by existing facilities, beneficiaries of the new infrastructure, and degrees of benefit to each effected party. These assumptions are easily supported if they are based on detailed analysis, but often such analysis is not available.

CAPITAL IMPROVEMENT PROGRAM

The City adopts a Capital Improvement Program as part of the annual budget process. To derive the maximum benefits from public funds, it is important that adequate public improvements be planned and timed so they are constructed in the proper sequence to meet Smart Growth requirements.

The Capital Improvement Program establishes a revolving five-year period to review and prioritize public improvement projects. Projects scheduled for early implementation are detailed so that proper budgeting and financing can be arranged. The program is reviewed annually and at the same time projected ahead another year. This assures that public projects will be completed where and when needed, and within the City's budget. It is essential that this program be coordinated with the Plan.

SUMMARY

Aberdeen, through the adoption of the Plan will concentrate development in a manner that ensures a safe, attractive, and economically viable land use pattern that sustains a balance between the City's current footprint and the inevitable growth that will occur, especially that related to the BRAC initiatives at Aberdeen Proving Ground.