COUNCIL OF THE TOWN OF INDIAN HEAD

Ordinance No. 08-02-21

Introduced By:	**Mayor and Council**
Date Introduced:	**August 2, 2021**
Planning Commission Public Hearing:	**July 21, 2021**
Town Council Hearing:	**August 2, 2021**
Amendments Adopted:	**None**
Date Adopted:	**September 7, 2021**
Date Effective:	**September 27, 2021**

AN ORDINANCE concerning

COMPREHENSIVE PLAN

FOR the purpose adopting a new Comprehensive Plan for the Town of Indian Head.

SECTION 1. BE IT ENACTED BY THE COUNCIL OF THE TOWN OF INDIAN HEAD that the Town of Indian Head Comprehensive Plan 2020 attached to this Ordinance as Exhibit A and incorporated by reference, is hereby adopted, as required by and in accordance with Title 3 of the Land Use Article of the Maryland Code. A true and accurate copy of the Comprehensive Plan adopted by this Ordinance shall be kept on file in the office of the Town Clerk.

SECTION 2. AND BE IT FURTHER ENACTED that this Ordinance shall become effective at the expiration of twenty (20) calendar days after its approval by the Council.

INDIAN HEAD TOWN COUNCIL

Brandon Paulin, Mayor

Ron Sitoula, Vice Mayor

Randy Albright, Councilman

ATTEST:

Town Clerk

Date: 9/7/21

EXHIBIT A

Town of Indian Head Comprehensive Plan 2020

TOWN OF INDIAN HEAD PLANNING COMMISSION

Resolution

A RESOLUTION concerning

COMPREHENSIVE PLAN

FOR the purpose of approving and recommending the adoption of a new Comprehensive Plan for the Town of Indian Head.

SECTION 1. BE IT RESOLVED BY THE TOWN OF INDIAN HEAD PLANNING COMMISSION that the Commission approves the Town of Indian Head Comprehensive Plan 2020 attached to this Resolution as Exhibit A and incorporated by reference, as required by and in accordance with Title 3 of the Land Use Article of the Maryland Code.

SECTION 2. AND BE IT FURTHER RESOLVED BY THE TOWN OF INDIAN HEAD PLANNING COMMISSION that the Chair of the Commission shall record, and thereafter sign, the following on the Plan: "This Town of Indian Head Comprehensive Plan 2020 was approved by the Town of Indian Head Planning Commission and recommended for adoption by the Indian Head Town Council on July 21, 2021".

SECTION 3. AND BE IT FURTHER RESOLVED BY THE TOWN OF INDIAN HEAD PLANNING COMMISSION that the Commission recommends that Indian Head Town Council adopt the Town of Indian Head Comprehensive Plan 2020.

SECTION 4. AND BE IT FURTHER RESOLVED BY THE TOWN OF INDIAN HEAD PLANNING COMMISSION that the Chair of the Commission shall certify a copy of this Resolution to the Indian Head Town Council on behalf of the Commission.

INDIAN HEAD PLANNING COMMISSION

By: _____
Mary Armstrong, Chair

ATTEST:

_____
Town Clerk

Date: 7/21/21

TOWN OF INDIAN HEAD

Honorable Brandon Paulin, Mayor

Honorable Ron Sitoula, Vice Mayor

Honorable Randy Albright, Councilman

COMPREHENSIVE PLAN 2020

Adopted: _____

ACKNOWLEDGEMENTS

COUNCIL

Honorable Brandon Paulin, Mayor
Honorable Ron Sitoula, Vice Mayor
Honorable Randy Albright, Councilman

PLANNING COMMISSION

Mary Armstrong, Chairman
Wayne Higdon
Thomas Gordon
Kelly White
Brian Israel
Anthony McFarland
Ron Sitoula, Ex Officio

BOARD OF ZONING AND APPEALS

Dennis Scheessele, Chairman
Rickie Posey
Rose Chase

TOWN STAFF

Ryan Hicks, Town Manager
Mark Harman, P.G., Zoning Administrator
Andrea "Annie" Brady, Town Clerk
Eric Woodland, Head of Operations
Jeff Williams, Fire Chief of Co. 9
Diane Campbell, Deputy of Finance
Ginger Foster, Financial Officer
EAST, Inc., Water and Wastewater Operator
Frederick Sussman, Town Attorney
CPL Curtis, Community Police Officer
Karen Lindquist Williams, Community Affairs Director

Assistance provided by ARRO Consulting, Inc.

INDIAN HEAD COMPREHENSIVE PLAN ORGANIZATION

ENVIRONMENTAL ELEMENT

MUNICIPAL GROWTH ELEMENT

COMMUNITY FACILITIES

HOUSING ELEMENT

ECONOMIC ELEMENT

TRANSPORTATION ELEMENT

WATER RESOURCES ELEMENT

MINERAL RESOURCES ELEMENT

BOXES	SECTION	PAGE
	Critical Area Legislation	MG-8
	Public Safety	CF-5
	Smart Neighborhoods	H-3
	Data Source	ED-4
	Purpose of Water Resource Element	WRE-3

APPENDIX A: RESOURCE MATERIALS

Maryland Department of Planning Comment Letter

Joint Land Use Study

Economic Revitalization Strategy

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INTRODUCTION

PURPOSE OF THE PLAN

The purpose of this Comprehensive Plan is to provide the basic policy framework to guide future land use and development decisions in a manner consistent with the desires of the community. The Indian Head Comprehensive Plan, hereon referred to as "The Plan", is directed at revitalizing the Town of Indian Head, hereon referred to as "The Town", and creating new and innovative residential and business development opportunities.

The State mandated visions have been incorporated into the Plan. The visions are as follows:

1. ***Quality of life and sustainability: a high quality of life is achieved through universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment;***

2. ***Public participation: citizens are active partners in planning and implementation of community initiatives and are sensitive to their responsibilities in achieving community goals;***

3. ***Growth areas: growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new 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 and preservation and enhancement of natural systems, open spaces, recreational areas, and historical, cultural, and archeological 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: economic development and natural resource-based businesses that promote employment opportunities for all income levels within the capacity of the State's nature resources, public services, and public facilities are encouraged;***

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, forests, agricultural areas, open space, natural systems, and scenic areas are conserved;***

11. ***Stewardship: government, business entities, and residents are responsible for the creation of sustainable communities by collaborating to balance efficient growth with resource protection; and***

12. ***Implementation: strategies, policies, programs, and funding for growth and development, resource conservation, infrastructure, and transportation are integrated across the local, regional, State, and interstate levels to achieve these visions.***

The Plan is an important document for the community, which serves three basic functions. First, it is a statement of policy on how the community wants to develop (i.e., their goals and objectives). Secondly, it becomes a guide for decision-making. Lastly, it satisfies state requirements for a Comprehensive Plan.

Since the Plan is such an important document for the community, the process by which it is prepared becomes pivotal in ensuring that it best serves the needs of the community as a whole. In this regard the Town has endeavored through a series of public workshops and presentations to gather input from citizens and business owners, and to structure the future development of the Town in such a way as to balance the needs of residential users with that of attracting a viable commercial base and providing for recreation and tourism development.

The effectiveness of the Plan depends on the Town Council and the public to make it work. It should be remembered that the Plan is a policy guideline consisting of goals and objectives to be worked toward and which is achieved through the use of strong and effective implementation tools. It is important that each citizen actively participate in the process to develop and implement the Plan.

LEGAL BASIS

The Maryland Land Use Code provides the legal framework and content for comprehensive planning. The Planning Commission has the responsibility to draft a Comprehensive Plan and then recommend its adoption to the Mayor and Town Council. After formulation of a Plan, the State legislation requires all jurisdictions to review such Plan at intervals of no more than ten (10) years.

PLAN UPDATE PROCESS

During 2016, the Town has been working diligently to define the characteristics of the Town they would like to take into the next decade. This Plan reflects interviews, work sessions by the elected officials and the Planning Commission, and sets a positive course for the Town over the next ten years. The Plan articulates a community vision and direction and will present goals, objectives, and implementation strategies that can help the Town achieve the future they desire.

The Plan has been prepared with revisions and additions to the adopted 2009 Plan. It complies with key pieces of legislation of the State and takes into account major changes that have been made by the Town since 2009. It is based on Planning Commission and Mayor and Council work sessions, input from State, County and Town employees, findings and recommendations of the Joint Land Use Study, input from the Department of the Navy (DON) representatives, results of the Town's economic implementation strategy, Urban Land Institute Technical Advisory Panel, public hearings with the Planning Commission and the Mayor and Council, and the opportunity for citizens to participate in public hearings. The Plan has been prepared in conjunction with review of all appropriate Town Documents and with the 2016 Charles County's Comprehensive Plan, Comprehensive Water and Sewerage Plan, Town Zoning Ordinance, Subdivision Regulations, Maryland Land Use Code, and other documents as referenced in Appendix A.

OVERALL GOAL OF THE PLAN

TO MAINTAIN AND IMPROVE THE OVERALL QUALITY OF LIFE FOR ALL CITIZENS OF THE TOWN OF INDIAN HEAD.

1. To ensure that future growth is reflective of the desires of its citizens.
2. To enhance the relationship between the Town and the DON and to provide the basic support services necessary to maintain the viability of the DON's mission in Charles County.
3. To make provision for:
    a. Appropriate distribution of residential, commercial, and recreational land uses.
    b. Protection of established residential areas while providing stimulation for economic development in appropriate locations.
    c. Adequate public facilities and services.
    d. Prevention of environmental degradation.
    e. Preservation of natural resources and environmental protection and work toward a zero or better carbon footprint.
    f. Promotion of public safety.
4. To become an eco-tourist destination enhanced by the Town's proximity to the Watershed Conservation District, Indian Head Rail Trail, Mattawoman Creek, and Potomac River.

PLAN IMPLEMENTATION

The Plan is designed to reflect public decisions and guide financial considerations, administrative actions, and private sector initiatives. Its objectives, policies, and recommendations will be reflected in other implementing documents including the zoning ordinance and subdivision regulations, the annual capital improvement program, and the comprehensive water and sewer plan.

Within the Town Administration, implementation of the Plan is the responsibility of different officials, staff, and appointed commissions. The key responsibilities are as follows:

1. The Planning Commission is responsible for:
    a. Annual review of the progress in implementing the Plan
    b. Preparing and recommending to the Town Council changes to the Plan and its policies at least once every ten years
    c. Review proposed public facilities and development projects for consistency with the Plan
    d. Review and approval of site plans and subdivisions
2. The Town Council is responsible for:
    a. Adopting the Comprehensive Plan
    b. Legislation and regulations
    c. A budget and a capital improvement program

d. Revisions or changes to the Plan, its policies, and regulations

e. The Town will update the Zoning Ordinance and Subdivision Regulations after adoption of the Comprehensive Plan.

3. The Town Manager is responsible for:

a. Administering the Plan recommendations within budget guidelines

b. Review of the Plan and recommending changes to the plan or its policies

BACKGROUND – LOCATION

The Town is located in northwest Charles County, Maryland on a small peninsula, which is bordered by the Potomac River on its northern boundary and Mattawoman Creek, a tributary of the Potomac River, on its southern boundary. Immediately adjacent on the west is a major U.S. Naval Support Facility and to the north and east is the newly created Charles County Watershed Conservation District as well as the Indian Head Development District. Immediately north of the Town is Glymont, and the Bryan's Road Development District is further to the north along Route 210.

The Town is located at the end of Indian Head Highway (Maryland Route 210). Maryland Route 210 is a four-lane divided highway extending from the Capital Beltway (Interstate 95) that runs for approximately 20 miles through southern Prince Georges County and northwestern Charles County, to the entrance of the U.S. Naval Support Facility in Indian Head, Maryland. Indian Head and the Town fall within Charles County, Maryland, Election District 7.

The Town is located in the Atlantic Coastal Plain and is characterized by gently rolling to fairly flat topography in the center of Town. The land falls off gently to the south toward Mattawoman Creek where it turns into a series of marsh and wetlands and drops off steeply (high cliffs) on its northern boundary to the Potomac River.

Figure 1
Indian Head Location

REGIONAL SETTING

The population growth in the Town is similar to the kind of growth that is occurring throughout Charles County. The close proximity to Washington, D.C. and good access via Maryland Routes 210 and 5 to U.S. 301 has spurred residential growth in the region. The Town's residential population has grown since 1985 from 1,612 to 3,844 according to the 2010 Census. These population numbers reflect a residential population increase of approximately 138% over that time.

The Town is in a very unique situation with regard to its physical location and the existing and potential economic forces at work in the region. Being located between the Naval Support Facility Indian Head with the Indian Head and Bryan's Road Development Districts to the north, bordered by two significant bodies of water, and immediately adjacent to extensive and protected natural resources such as the Doncaster State Forest and the proposed Mallows Bay National Marine Sanctuary, the Town's future is promising.

Development pressure in nearby areas of Charles County, facilitated by the Maryland Airport improvements, reclassification of Bryan's Road Development District, Indian Head Development District, MGM Grand Casino, the Watershed Conservation District, coupled with road improvements to Md. Rt. 210 and the completion of four lane improvements to Maryland Route 228, has created new regional areas of commercial opportunity. These new centers of commercial development are having a significant impact on the Town by drawing away its economic viability to larger commercial nodes, which serve a more central area of residential population. However, other recent land use changes included in the Plan and the Town's location relative to the Indian Head Rail Trail and the Mattawoman and Potomac boardwalks may provide unique economic opportunities including eco-based tourism.

When viewed from a larger regional perspective, the Town can be seen as an essential component of the greater land use strategy for the western part of Charles County as expressed in the Plan. The Indian Head Division of the Naval Surface Warfare Center (NSWC) is one of Charles County's largest employers. Based on this information, it is evident that the Town, including the NSWC, is a key component of Charles County's economic development efforts. The Town should continue to refine and update the previously prepared guidance document "The Plan for the Future of Downtown" as it will serve as the basis for creating a Town Center that will be supported by existing and future residential development.

Regional Development Issues:

- The Naval Support Facility Indian Head is a major employer in Charles County and a primary source of support for commercial enterprises in the Town.
- Indian Head is commercially disadvantaged by the fact that it is located south of the major transportation routes that tie eastern Charles County into Maryland Route 210 and the mainstream of traffic commuting north to the Metropolitan Area each work day.
- Support services (food, clothing, medical supplies, etc.) will have even more competition in the near future from developing commercial centers located north of the Town along Maryland Route 210.
- The proximity of the Town to Washington D.C. and the fact that it is bordered to the north and south by water and adjacent to extensive federally owned lands and the County Watershed Conservation District to the west makes it unique.
- As a result of State acquisitions and County zoning in the area, the Town could benefit from support from the County and State in its development and redevelopment efforts.

In spite of the challenges to economic development in the Town, potential development and/or redevelopment opportunities exist. The 20-acre parcel owned by Cook Inlet Region, Inc. ("CIRI") along Dr. Anderson Way and Rt. 210 offers the prospect of 160 new residential dwellings. The existing and currently available commercial development (in which a vast majority was formerly owned by the Ely's family) now mostly owned by Mid-Atlantic development, along Route 210 has started to be redeveloped. Significant strides were made to attract the College of Southern Maryland velocity center as an anchor tenant to the "Velocity Park" (Former Ely shopping center). New movement at the Phillips' site (former CVS/A&P, now owned by Mid-Atlantic as well) shows significant progress as well. Further consideration of these areas as mixed use is underway, revitalizing a significant portion of the town. The recent addition of broadband communications and natural gas along the Rt. 210 corridor in Town also enhanced the infrastructure available to support new and redevelopment. The addition of more housing will only increase the feasibility of additional commercial activity in Town while providing an increased tax base.

The Boardwalk and Living Shoreline project will consist of the following: constructing approximately 1,200 linear feet of elevated timber boardwalk 12 to 18 feet in width, class 2 stone sills the length of the boardwalk, and a living shoreline including sand and marsh plantings. In addition, 1,215 linear feet of elevated timber nature walk 8 feet to 14 feet in width compliant with the Americans with Disabilities Act, lighting, telephone and electrical wiring, conduit, emergency call boxes, and concrete sidewalk will be constructed. The timber nature walk will allow visitors easy access to the river boardwalk.

HISTORY

Incorporated during 1920, the Town of Indian Head is located 30 miles from Washington, DC, parallels the Potomac River, and is positioned across the river from Mount Vernon, Virginia. The town overlooks the Potomac River and is located between the Potomac River and Mattawoman Creek. Although the Town Indian Head is quite picturesque, serene, and has maintained its warmth in citizenry, it remains the model technically sophisticated, growing suburban community that supports urban amenities and superb cultural activities and events for its diverse population. This population reached 3,882 on July 1, 2017. The Town is comprised of numerous dynamic communities, which are composed of highly skilled and educated workers.

EARLY ORIGIN

The Town of Indian Head was originally part of the Lord of Baltimore's Chapman's Landing grant in 1654. Thereafter, it occupied land that was once part of the land of the Algonquin Indians. The origin of the Indian Head name comes from the term "Indian Headlands," as the land was once occupied by Native Americans as well as served as an Indian Reservation.

Following a series of parceling and ownership changes from the various United Kingdom's Royal English Families then the Pye and Cornwallis families, the Town of Indian Head became a separate entity. During the 1890s, the Town's growth and residents changed as people migrated to the area in order to work at the newly established Naval Proving Ground. The name of the military base has changed over the years to the Naval Powder Factory, to Naval Propellant Plan, to Naval Ordnance Station, to Indian Head Division of the Naval Surface Warfare Center then to the current Naval Support Facility-Indian Head. While continuing to specialize in gun and rocket propellants, the facility is part of the Naval Support Activity-South Potomac and is home to a variety of tenants that include the Indian Head Division of Naval Surface Warfare Center, the Naval Explosive Ordnance Disposal Technology Division, the Joint Interoperability Test Center, and the Marine Corps Chemical Biological Incident Response Force. The facility is the largest employer in Charles County, employing approximately 3,700.

The Town of Indian Head and the Naval Support Facility-Indian Head's respective governing bodies and management continue to engage in meaningful productive joint ventures and events, which enhance both the Town and the military base's economic viability and contributory values to Charles County.

PRESENT DAY

As a State of Maryland Chartered Municipal, the Town of Indian Head is governed by three elected officials (Mayor, Vice Mayor, and Member). Each elected council official serves a 4-year term. In addition to the staff, the Council is supported by the Indian Head residents who can contribute to the Town's affairs by serving as volunteers on the following town authorized bodies: Board of Supervisors of Elections, Environmental Sustainability Committee, Ethics Commission, Parks & Recreation Commission, and the Planning Commission.

The Town is managed by a superb and exemplary staff, which includes a Town Manager, Town Clerk, Finance Officer, Community Affairs Coordinator, Community Affairs Coordinator, Head of Operations, Code Enforcement Officers, Zoning Administrator, Town Attorney, and a Community Policing Officer.

The residents and visitors of the Town of Indian Head continue to enjoy the numerous and varied festivals, cultural events, and activities on the Town's "Village Green" that houses the Town's magnificently built pavilion, which is business or social functional. In addition, these individuals regularly utilize the Town sponsored biking and hiking activities on the Indian Head Rail Trail. Equally, the Town's Center for the Arts, which houses the "Black Box Theatre," continues to grow and be recognized as one of the best cultural

centers in Charles County. It goes without saying, but the serene waters of the Mattawoman Creek and the Potomac River continue to highlight the Town's fishing, kayaking, and canoeing events.

One of the Town of Indian Head's signature and phenomenal events is its July 4th "Fireworks Extravaganza," which consistently draws record crowds and families from the State of Maryland and nearby jurisdictions in Northern and Southern Virginia and Washington, D.C.

DEMOGRAPHICS

The Town is a diverse community that consists largely of year-round residents, with 25% of these residents being 55 or older. The largest increase in population from the 2009 Comprehensive Plan is the 45-54 age group, which increased from 18% to 25%. Although the availability of data is limited, this section will include all groups of population to provide a basis for understanding and meeting present and future planning needs when forecasting in the Municipal Growth Element chapter. This section will look at census data for population size and characteristics, whereas future population growth projections and development proposals will be viewed in the Municipal Growth Element. Other demographics pertinent to housing and economic development may be found in the Housing and Economic Elements of the Plan.

POPULATION CHARACTERISTICS

The data for the Town shows that the population dropped by more than half following the end of World War II and the closing of a major portion of the facilities at the Naval Support Facility (NSF). There was a major increase in the Town's population from 1950 to 1970 with the enlargement of the NSF facilities and accompanying increase in employment due to of the Korean Conflict and Vietnam War. During the 1970's, the Town's population leveled off while Charles County continued to grow steadily. During the 1980's, housing development in Indian Head increased as the Town became more integrated into the Washington D.C. housing market.

In 1986, the Town annexed Woodland Village and Knotts Subdivision. In 1992, the Teates Subdivision was annexed, and in 1994, a new housing project was built, plus an annexation of the Travers Road area brought additional residents. More recent multi-family development including Riverwatch, Riverwatch Commons, and the Villages of Potomac have increased the population to 3,857 according to the 2015 census.

Table IN-1 shows the historic population from 1970 to 2015 with the percent of change for each decade and annual change per year.

Population 1970-2015 and Percent of Change in Town of Indian Head

Table IN-1

Year	Population	Percent of Change by Decade	Percent of Change by Year
1970	1,350	-	-
1980	1,381	2.3%	0.23%
1990	3,531	155.7%	15.57%
2000	3,423	-3.1%	-0.31%
2010	3,844	12.3%	1.23%
2015	3,857	0.3%	0.07%

Future growth within the Town is expected to be generated by new housing on the 20-acre CIRI parcel located along Dr. Andrews Way and Rt. 210, infill development, and redevelopment to mixed use. This growth is anticipated but is expected to be implemented in phases over 10-20 years, which will minimize the burden on existing infrastructure.

Table IN-2 compares the historical growth of Indian Head to Charles County and the State. The Town's average population growth rate has been lower than that of Charles County, but higher than that of the State.

Historical Population and Average Growth Rate per Decade
Town of Indian Head, Charles County, and Maryland
1970 – 2010
Table IN-2

Year	Indian Head	% of Growth	Charles County	% of Growth	Maryland	% 0f Growth
1970	1,350	-	47,678	-	3,922,399	-
1980	1,381	2.3%	72,751	52.6%	4,216,975	7.5%
1990	3,531	155.7%	101,154	39.0%	4,781,468	13.4%
2000	3,423	-3.1%	120,546	19.2%	5,296,486	10.8%
2010	3,844	12.3%	146,551	21.6%	5,773,552	9.0%

RESIDENT POPULATION CHARACTERISTICS

Table IN-3 compares the various characteristics of the Town's population including age, gender, and education.

2010 Population Characteristics: Age, Gender, Median Age, and
Household Size in the Town of Indian Head & Charles County
Table IN-3

Population	Indian Head	Percent	Charles County	Percent
2010	3,844	100%	146,551	100%
Population by Gender				
Male	1,820	47.3%	70,810	48.3%
Female	2,024	52.7%	75,741	51.7%
Population by Age				
Under 5	291	7.6%	9,438	6.4%

5-19	921	24.0%	33,482	22.8%
20-64	2,348	61%	89,779	61.3%
65+	284	7.4%	13,852	9.5%
Total	3,844	100%	146,551	100%
Median Age	33.2		37.4	
Average Household Size	2.76		2.83	

Source: **2010** U.S. Census

As shown in Table IN-3, the population is fairly evenly distributed between males and females. The population of school age children, generally ages 5-19, is 24.0 percent of the population in the Town and 22.8 percent in Charles County. The median age of the Town's population is 33.2 years of age compared to 37.4 years of age in Charles County. The population of school aged children has declined in the Town and in the County while the median age has increased when compared to the 2009 Comprehensive Plan data. Table IN-4 provides a more detailed picture of all population groups by age.

Age of Householder
Occupied Housing Units
in the Town of Indian Head
Table IN-4

Age	Number	Percent
15-24 years	60	4.3
25-34 years	255	18.3
35-44 years	376	27.0
45-54 years	350	25.2
55-64 years	177	12.7
65-74 years	105	7.5
75-84 years	46	3.3
85 year and older	22	1.6
Occupied Housing Units	1,391	100

Reference: 2010 US Census Bureau

As reflected in Table IN-4, the Town's highest percentage of householder age groups for occupied housing units from the 2010 census are those in the 35-44 and 45-54 years of age groups. New housing opportunities and businesses could benefit by targeting the needs of these two age groups.

HOUSING CHARACTERISTICS

The Town of Indian Head
Housing Characteristics 2010
Table IN-5

Occupied Housing Units	%	Total Housing Units	Owner-Occupied Housing	Percent Owner Occupied	Renter Occupied Housing	Percent Renter Occupied	Vacant Housing	Percent Vacant	Average Household Size
1,391	89.5%	1,554	935	67.2%	456	32.8%	163	10.5%	2.76

US Census: 2010

From Table IN-5 and when compared to the 2009 Comprehensive Plan data, it can be seen that the percentage of owner occupancy has increased from 61% to 67% while the number of vacant homes has nearly doubled. The percentage of renter occupied housing has remained substantially the same. The larger proportion of vacant housing may be attributed to the economic recession, which reached its lowest point in 2008, creating a significant number of foreclosures.

Educational Attainment
Table IN-6

Educational Attainment (highest level)	Indian Head	Indian Head Percent	Charles County	Charles County Percent
Population 25 years and over	2,403		92,602	
Less than high school graduate	257	10.7%	8,890	9.6%
High School Graduate (or equivalency)	865	36%	28,707	31%
Some College	687	28.6%	23,799	25.7%
Associate Degree	99	4.1%	7,038	7.6%
Bachelor Degree	375	15.6%	15,094	16.3%
Graduate or Professional Degree	120	5%	9,075	9.8%

Source: U.S. Census 2010

Educational levels in the Town are fairly comparable to Charles County as shown by percentage on Table IN-6. Among Indian Head's population, 53.3 percent have participated in a college experience as compared to 59.4 percent of County residents. When compared to the 2009 Comprehensive Plan, the number of

persons earning a Bachelor Degree has doubled and the proportion of population with less than a high school degree has been cut in half.

Table IN-6 provides a general breakdown of levels of educational attainment, which will be used in the Community Facilities Element. The important point that should be noted here is that the Town is reasonably well educated. Education for some citizens is a life-long process, which makes it important to have appropriate institutions to disseminate information. Library resources, provisions for children and adults, dance, music, art, cultural, crafts or other educational opportunities that are available locally can create a better community and add to the business services that are located in the Town.

The College of Southern Maryland located in Charles County provides Associate Degrees and represents a significant resource for the residents of the Town.

Table IN-7 provides statistical information relative to the Town's income, housing, and employment as compared to the County and State. While housing values and income levels are lower than the State and County, they are higher than the national average.

Housing, Income, Employment
Table IN-7

	Indian Head	Charles County	Maryland	U.S.
Household - median	$68,917	$91,910	$74,149	$53,482
Income - mean	$81,309	$104,847	$97,135	$74,596
Housing Value - median	$217,900	$287,000	$287,500	$175,700
Vacant Housing	17.5%	7.3%	10.1%	12.5%
Below Poverty Level	7.9%	7.6%	10.0%	15.6%
Employment	68.9%	70.4%	68.9%	63.9%

Source: US Census Bureau, 2010-2014 American Community Survey

LAND USE

LAND USE GOALS

The overriding land use goal is ***TO IMPROVE THE PATTERN OF LAND USES SO THAT THEY ARE BALANCED TO MEET THE NEEDS OF THE COMMUNITY AND STIMULATE PHYSICAL, SOCIAL, AND ECONOMIC DEVELOPMENT WHILE MINIMIZING FISCAL AND ENVIRONMENTAL IMPACTS.***

The following objectives outline the Town's strategy to fully implement the adopted goals of the Town, which are to strengthen the commercial core while maintaining the integrity of the residential zones, to provide a quality small town atmosphere that has ample recreational and open space opportunities, and to develop a tourist industry around the natural resources of the Town to help support the commercial base.

1. Enhance an "old town" feel in the Town through the appropriate use of mixed-use zoning coupled with the retention of existing residential areas.

2. Promote the development of pedestrian-friendly residential areas, and maintain a diversity of housing types available to all income levels. Promote the addition of elderly housing opportunities and retirement facilities.

3. Develop a strategy to foster the development of a tourism industry around the natural resources and other unique opportunities for the Town.

4. Protect Sensitive Areas and implement the goals, objectives, and requirements of the Town's Critical Area Plan.

5. Implement low-cost bicycle and pedestrian improvements that connect residential areas to activity generators along Indian Head Highway while coordinating with the Maryland State Highway Administration (SHA).

6. Enhance opportunities for mixed-use development that will support transportation alternatives along the Route 210 corridor.

POLICIES AND IMPLEMENTATION STRATEGIES

Policy LU.1: Delineate sensitive areas as required by the 1992 Economic Growth Resource Protection and Planning Act and develop regulations that protect these resources from inappropriate uses.

Policy LU.2: Continue the implementation of the Town's Critical Area Program through the site plan and zoning ordinance provisions.

Policy LU.3: Study the existing residential stock in Town and develop a policy that provides a balanced approach to the types of future residential construction.

Policy LU.4: Support a pedestrian friendly environment for new and existing development by: requiring or supporting sidewalks/bicycle routes through the development and connectivity with existing routes; open space and parkland to encourage neighborhood gatherings and activities; and community buildings to facilitate community-oriented meetings and activities.

Policy LU.5: Develop regulations and make appropriate zoning map amendments necessary to facilitate opportunities for the construction of elderly housing, which include allowances for retirement homes and nursing facilities.

Policy LU.6: Provide ample mixed-use areas along Route 210 to support the continued development and redevelopment of mixed-use activities with coordination from the Department of the Navy (DON).

Policy LU.7: Retain the ambiance of existing residential areas set back from Route 210 and protect them from the negative characteristics such as noise, odors, and traffic resulting from future development and redevelopment activities.

Policy LU.8: Develop flexible building regulations that promote innovative design, cost saving techniques, and that will expedite the review and construction process.

Policy LU.9: Provide and promote recreational opportunities, which will encourage tourists to visit the Town. Provide maximum access to the Potomac River and Mattawoman Creek within the Town limits. Encourage use of the Indian Head Rail Trail and extend the Boardwalk along the Potomac River and rail trail along the Mattawoman to the Town limits. Provide a pedestrian link among all these features.

Policy LU.10: Revise the Zoning Ordinance to encourage the development of tourism related facilities like bed and breakfast accommodations. Develop a Town theme and tourism logo, possibly based on some unique intertwining of water proximity, DON history, and Native American history that would draw visitors. Foster building of appropriate museums and staging of area wide cultural events.

Policy LU.11: Consider establishing a Historic District Overlay Zone for certain areas of the Town to protect the character of the area and to foster the continuance of the area as a historically significant area.

PAST AND PRESENT TRENDS

The Town of Indian Head contains approximately 800 acres of which 70% to 75% is currently developed. Existing development consists of a commercial core along both sides of Route 210 (Indian Head Highway) from the Town line to the entrance of the Naval Support Activity South Potomac (NSASP) and Naval Support Facility Indian Head (NSFIH). Open space and institutional uses are concentrated at the top of the hill along Route 210 and include the Town Hall, Elementary School, Village Green and Pavilion, Community Center,

Volunteer Fire Department, and Post Office. The Town has water frontage on the north with the Potomac River and on the south by Mattawoman Creek, a unique and special quality of the Town.

Residential use is predominately single-family detached although there are a substantial number of townhouses and a few apartment buildings. The residential communities of the Town are located behind the commercial corridor along Route 210 to the north to the Potomac River and to the south to Mattawoman Creek.

Vacant land consists of small-undeveloped parcels and lots scattered throughout Town and three large undeveloped tracts. Two of these, one facing the Potomac River north of Maple Street and the other, east of the elementary school, have steep slopes, which restrain development. The other tract, which faces Route 210 and the Potomac River, is currently undeveloped. The introduction of mixed-use zoning has also made further in-fill development and redevelopment possible throughout the Town.

There are no industrial or agricultural uses within the Town limits.

Approximately 164 acres in Town are within the 1,000-foot boundary delineated for Indian Head's Chesapeake Bay Critical Area Program. Original mapping showed 141 acres delineated as IDA (Intensely Developed Area), or LDA (Limited Development Area), and 23 acres as RCA (Resource Conservation Development Area). Future development in these areas will be subject to the regulations established in Indian Head's Critical Area Program. Nine acres within the Town have been used for growth allocation since 1985. The State's Critical Area Act permits the County to allocate five percent of the County RCA acreage (approximately 1,130 acres) for use for future growth as either LDA or IDA. This allocation to the County is shared with the Town.

In 2004, the Town Council approved Town Center mixed used zoning for much of the area bordering Route 210 through Town. Since then, several large and small residential developments have taken advantage of this zoning. A large multi-unit development was recently completed across from Town Hall on a site formerly occupied by the old elementary school.

In addition, the Town adopted a Special Highway Corridor Overlay District, which includes all lands within 500 feet of each side of MD Route 210. New development within the overlay zone must receive architectural approval from the Planning Commission in an effort to assure architecturally compatible development and improve the overall aesthetic appeal along the highway corridor.

Several areas that may be considered for annexation in the future have been identified. Area 1 is a cutout along the Potomac River, Area 2 would fill in the Town boundary along the Mattawoman Creek, Area 3 would extend the northern boundary to Lower Wharf Road to include the Route 210 and Route 225 intersection and the property on the east side of Parker Harley Place, Area 4 would be the entire NSASP and NSFIH, and Area 5 would be a portion of the existing Mattawoman natural environment area along Mattawoman Creek.

LAND USE DEVELOPMENT PROCESS

As provided for in the State of Maryland Land Use Article, land use development regulations may be made in accordance with the Plan designed to, among other things, secure public safety, promote health and welfare of citizens, provide for adequate light and air, and the conservation of natural resources, facilitate adequate provisions of transportation, water, sewerage, recreation, landscaping, parks, and conservation of natural resources, and promote good civic design. These development regulations include but are not limited to the following: Zoning Ordinance, Subdivision Regulations, Chesapeake Bay Critical Area, and Indian Head Joint Land Use Study (JLUS). Upon adoption of the Plan, review of these and other Land Development Ordinances shall take place to ensure that regulations are compatible with the goals and polices of the Plan. The Plan has a list of all policies in the Implementation chapter that will help guide the staff, public officials, and appropriate agencies and give direction as to whom the proper authority is that is responsible for the completion of each task that is needed to carry out the Plan.

EXISTING LAND USE IN RELATION TO THE COMPREHENSIVE PLAN

The Town's pattern of development is generally consistent with the Comprehensive Plan adopted in 2009. There have been no major new commercial facilities constructed, and those that exist are located in the commercial core along MD Route 210.

Since that time there have been numerous new residential projects (single-family and multi-family) completed in the Riverwatch development and along Rt. 210 in the mixed-use district, most of which occurred between 2000 and 2010. The policies established in the 1997 and 2009 Comprehensive Plans, which encouraged infill and higher density development (five units per acre), have worked well as new units have been constructed since 1988.

The Town has undertaken several major projects, which strengthen the core commercial area and further the adopted goals of the Town to make it a special place for residents. A new landscaping plan was prepared for the Village Green Area and a community center (The Village Green Pavilion) constructed along the northern perimeter. A major streetscape upgrading was completed for the portion of Route 210 from the NSASP and NSFIH to Potomac Avenue after which this highway sector was annexed into the Town. An expansion of the Senior/Community Center was completed. Both of these projects could not have been accomplished without the grants provided by the State. Further, the Town, in conjunction with the State Highway Administration, has landscaped a portion of the median along Route 210 to beautify the downtown area. The County has completed a "Rails to Trails" project that removed the old disbanded railroad tracks through Town and beyond and replaced them with a new paved hiker/biker trail connecting the Town with White Plains and running significant environmental areas. The Town recently added a connector trail linking the County Trail to the Village Green Park. The Town also completed a Trailhead Plaza for use by hikers/bikers as a temporary refuge and information center.

Table LU-1 shows the Land Use Designations, the corresponding Zoning districts that are currently in the adopted Zoning Ordinance, and the percent of various land uses.

Town of Indian Head Existing Zoning and Land Uses
Table LU-1

Land Use Designations	Acreage	Share of Town Percent
Single-family Residential: R-1, R-2	421.28	53.1
Multi-family Residential: RM	59.61	7.5
General Commercial: GC	38.16	4.8
Town Center Mixed Use: TCMX	135.74	17.1
Open Space: OS	112.37	14.2
Public/ Institutional (Churches, Town Facilities)	26.39	3.3
Totals	793.55	100

Table LU-2 contains the current zoning classification in the Town and a brief definition of that zoning district. As shown, there is currently 53 percent of land in the residential land use classifications: R-1: Residential-Single Family; R-2: Medium Density Residential; and RM: Multi-Family Residential. A common theme in the definitions of these three districts is that uses should be compatible with residential living and a residential district. It is necessary to have clearly defined screening requirements and buffer yards in areas where mixed use is already established and new or re-development will occur in the future in order to maintain neighborhood compatibility in a town that has neighbors and businesses in close proximity.

Landscaping requirements should be defined with specifications of landscaped materials. Compatibility issues can be addressed with noise ordinances, design guidelines, trash enclosures and inside storage of trash for commercial development, and signage regulations that are not intrusive to a residential neighborhood.

The Plan establishes the preferred lands that are compatible with each of these zoning classifications.

Existing Zoning for Residential, Commercial, Mixed Use and Recreation Uses
Table[1] LU- 2

Zoning Classification	Definition
R-1 - Single Family Residential, Low Density	Intended to provide for low-density single-family housing on minimum lot size of 15,000 SF and preserve and protect the primarily single-family detached residential character of the district and to keep these areas free from the land uses that are incompatible with and/or might adversely affect these single-family neighborhoods.
R-2 - Single-Family Residential, Medium Density	Intended to provide medium density residential detached housing on minimum lot size of 8,000 SF and promote the development of a pleasant living environment

RM – Multi-Family Residential, High Density	Intended to provide for a variety of multi-family dwellings and supporting uses at a higher density than R-1 and R-2 including townhouses, condominiums, and apartments.
GC - General Commercial	Intended to provide locations for small-scale and low-impact commercial and non-residential uses while protecting residential character within and adjacent to the district.
TCMX – Town Center Mixed Use	Intended to promote a mixture of multi-family residential and commercial uses, to promote and enhance a pedestrian oriented development, and permit a mix of uses that can be found in a traditional town center or neighborhood setting.
OS - Open Space	Established to provide and protect locations for parkland and recreational activities and needs.
Public/ Institutional	Provide for churches, schools, and public facilities

[1]Table has been prepared using the current Town of Indian Head Comprehensive Plan and Zoning Map

PROPOSED LAND USE CLASSIFICATIONS

The future land use classifications shown on Table LU-3 closely match the existing land use classifications identified in the 2009 Comprehensive Plan as shown on Table LU-1. There are significant changes, however, from the 2009 Comprehensive Plan regarding the extent of the Town Center Mixed-Use district along Route 210*The TCMX was expanded to include properties with frontage along Rt. 210. The change resulted in an 8.2% increase in TCMX and decrease of 2.7% in commercial zoning.* These land changes have resulted in the net gain of 31 acres of land classified as Low/Medium Density Residential, the net reduction by 45 acres of land classified as Town Center Mixed-Use, and the net gain of 14 acres of land classified as Open Space.

Future Land Use Classifications
Table LU-3

Land Use	Recommended Density	Recommended Uses	Acres	%
Single-Family Residential, Low Density	3 DU/AC	Single-family, detached, and residential accessory uses. Portions of this district require compliance with the Highway Overlay Zone design guidelines.	45	5.7
Single-Family Residential, Medium Density	4-5 DU/AC	Single-family, detached, and residential accessory uses. Portions of this district require compliance with the Highway Overlay Zone design guidelines.	407	51.3
Multi-Family Residential, High Density	6-15 DU/AC	Single-family, detached, attached, and multi-family, and residential accessory uses.	60	7.5

General Commercial	Variable	Intended to provide locations for area-wide oriented business with a variety of office and commercial uses that are not suitable for location in other zones while protecting residential character adjacent to the district. This zone serves higher volume automobile traffic generation, commercial uses, and allows for more intensive uses than the TCMX zone. Portions of this district require compliance with the Highway Overlay Zone design guidelines.	17	2.1
Town Center Mixed Use	Variable Up to 20 DU/AC residential	A combination of uses including residential and non-residential. Uses may include offices, retail, institutional uses, and small passive recreation areas. The purpose of this district is to enhance and redevelop the downtown area along and adjacent to the Route 210. Portions of this district require compliance with the Highway Overlay Zone design guidelines.	156	19.7
Open Space	Variable	Lands and facilities generally owned and operated by the Town or other level of government for the purpose of recreation or public open space. Portions of this district require compliance with the Highway Overlay Zone design guidelines.	126	15.9
Public/ Institutional	Variable	Publicly owned areas of the Town where the public is invited to congregate or areas that are used for private/public service. Portions of this district require compliance with the Highway Overlay Zone design guidelines.	26	3.3

Prepared by ARRO

While the proposed general land uses will remain consistent with the existing zoning map, the regulations within the zoning ordinance regarding allowable development within the commercial/residential mixed-use district should be revised and strengthened to encourage development of both residential and commercial uses on the same parcel(s) rather than permitting one use or the other. This will assist in promoting more viable commercial enterprises and a true mix of uses contemplated for this land use district.

FUTURE LAND USE

Table LU-3 indicates that approximately 45 acres or 5.7% of the Town is proposed as Low Density Residential, primarily located along Mattawoman Creek on the south side of Town and generally within the Resource Conservation Area of the Chesapeake Bay Critical Area Special Overlay District. The majority of the Town, 407 acres, is proposed as Low/Medium Density Residential and encompasses the majority of the Town south of Route 210 and along the east border of Town adjacent to Charles County and the west Town border adjacent to the NSASP and NSFIH. There is also an area of proposed Low/Medium Density

Residential north of Route 210 at the east end of Town. This land use category generally reflects the historic residential pattern and intensity of development.

The High Density Residential comprises 60 acres or 7.5% of the Town. The extent and location of this land use classification has remained unchanged from the 2009 Comprehensive Plan.

The Commercial/Residential Mixed-Use comprises 17 acres and generally borders Route 210. This land use category provides for a mix of residential and neighborhood commercial development and services that are necessary to sustain the needs of the public on a routine basis

Approximately 17 acres are designated as commercial uses and are generally located along Route 210. The extent and location of this land use classification has decrease by 21 acres due to the reclassification of commercially zoned properties along Route 210 to the TCMX zone. Accessibility improvements along and adjacent to Route 210 must be coordinated with the State Highway Administration.

There are approximately 26 acres of land (3.3%) within the Town in the Public/Institutional land use classification that includes schools, churches, and municipal functions. The extent and location of this land use classification has remained unchanged from the 2009 Comprehensive Plan.

The open space area comprises 126 acres and includes existing active and passive parkland within the Town including the recently completed "Rails to Trails" project. As previously indicated, the amount of land within this land use classification has been increased by 14 acres (representing 15.9% of the Town area) due to the change to portions of the Commercial/Residential Mixed-Use District along Route 210 at both the east and west ends of Town to the Open Space land use classification.

LAND USES ADJACENT TO INDIAN HEAD

On federal land west of the Town boundary, lies the NSASP and NSFIH on Federal land. To the east, surrounded by the Town and bordered by the Potomac River, is a pocket of existing residential land along Stoney Point Place which lies within Charles County. At the eastern border of the Town is land in Charles County with a mixture of low-medium density residential and commercial uses in the Glymont area. A portion of this land is identified as a Development District in the Charles County Comprehensive Plan. To the north lies the Potomac River and to the south lies Mattawoman Creek. There is an existing subdivision at Arthur Ross Place, which is mostly undeveloped, that lies within the County and is identified in the County Comprehensive Plan as being within the newly created Watershed Conservation District.

As indicated on the Future Potential Annexations Map, the Plan identifies several areas of potential annexation. These areas include the existing low-density developments at Stoney Point and along Arthur Ross Place, the NSASP and NSFIH, which is currently developed with its own infrastructure, the area east of Town along Strauss Avenue and west of Route 225, and the existing property on the east side of Parker Harley Place, which already has potable water and sewer systems in the road. Future development of all of these potential annexation areas is envisioned to be consistent with the surrounding land use. A more in-depth discussion of these potential annexations is included in the Municipal Growth Chapter.

NAVAL SUPPORT FACILITY INDIAN HEAD (NSFIH) – JOINT LAND USE STUDY

In 2015, the Commissioners of Charles County sponsored the preparation of a Joint Land Use Study (JLUS) in cooperation with the Town of Indian Head and the NSFIH to coordinate future planning efforts. The purpose of the Joint Land Use Study is to encourage cooperative land use planning between the NSFIH and the surrounding community so that future civilian growth and development are compatible with the training, testing, or operating missions of the DON and to seek ways to reduce operational impacts on adjacent lands. The Study was financed by a grant from the Department of Defense Office of Economic Adjustment. The JLUS planning process includes an implementation plan with a list of specified actions organized by approach:

- Interagency Coordination recommendations are designed to improve coordination among participants
- Public Outreach recommendations are focused on increasing awareness of the military mission
- Military Outreach recommendations provide suggestions on improving NSF Indian Head communication
- Business and Economic Development recommendations address how the business community can participate in addressing any issues related to encroachment
- Land Use Planning recommendations are designed to use land use and development regulations to support the military mission
- Land Conservation Efforts focus on preventing encroachment and maintaining the rural character of the community

The Town supports the findings and conclusions of the study and will participate in implementing the recommendations as proposed by the study in cooperation with the County and DON.

A complete copy of the JLUS can be reviewed at the Town of Indian Head or the Planning Office of Charles County Government.

The JLUS produced a map delineating a Military Awareness Area and noise level contours, which is shown on the next page. This map indicates that the Town lies entirely within the identified Military Awareness Area as well as the identified Moderate Noise Level Area.

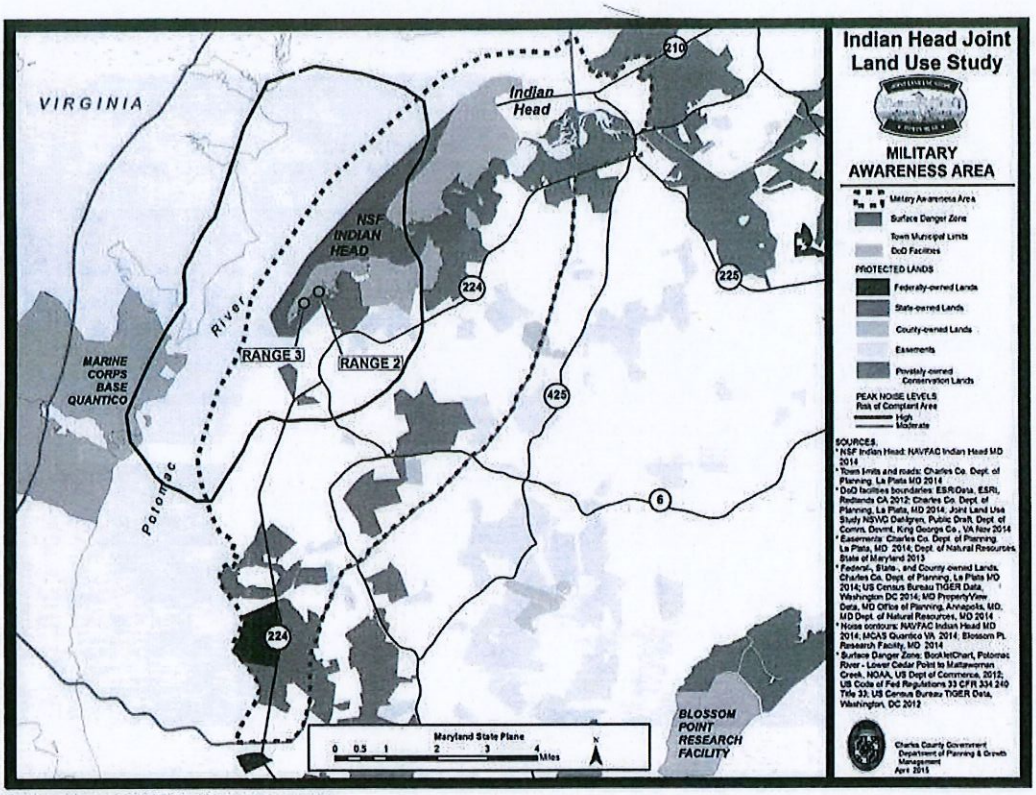
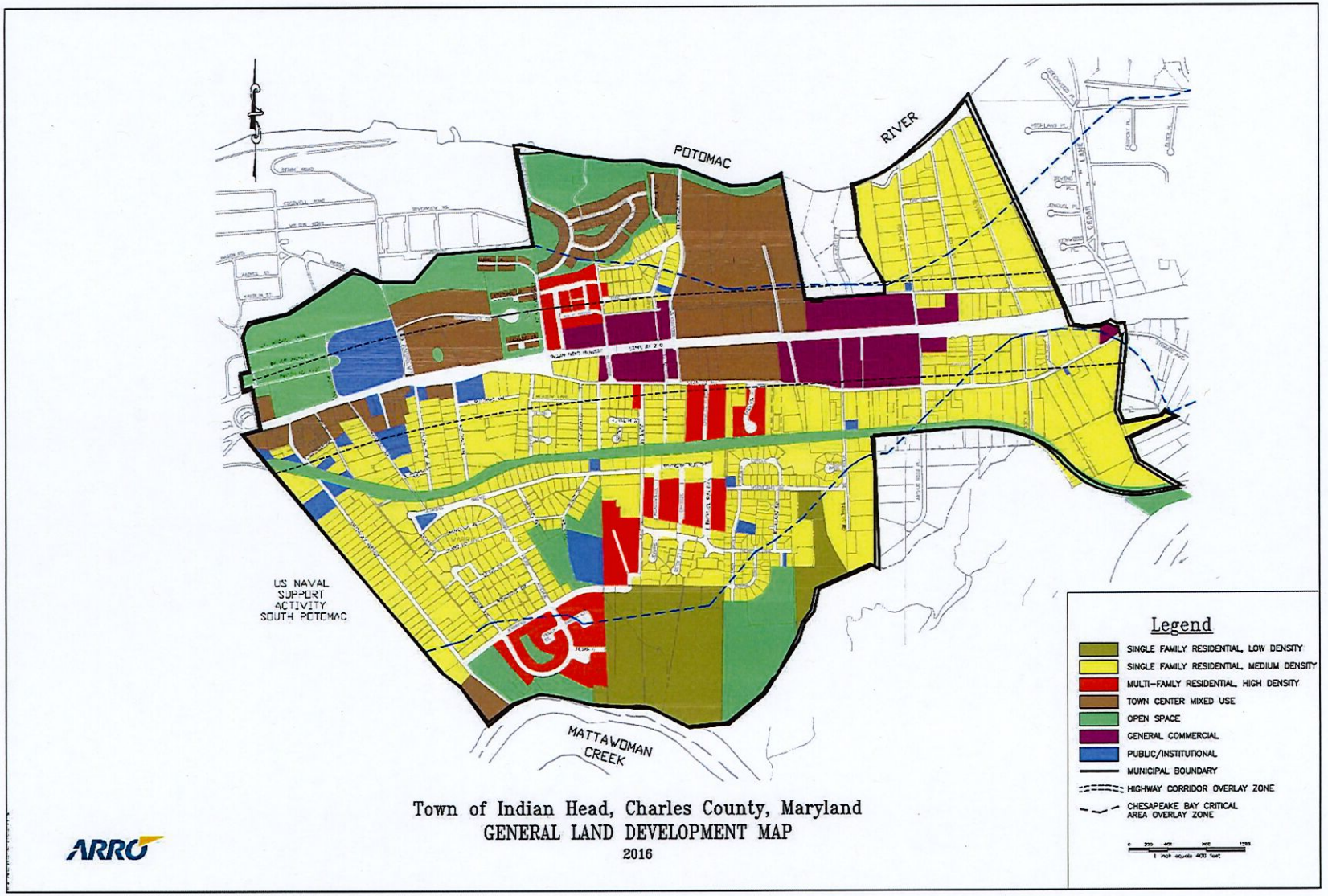


Figure 37: Proposed Military Awareness Area

The primary purpose of the Military Awareness Area is for increased awareness of military operations and potential noise impacts and to establish an area for the coordinated review of development projects with the DON.



Town of Indian Head, Charles County, Maryland
GENERAL LAND DEVELOPMENT MAP
2016

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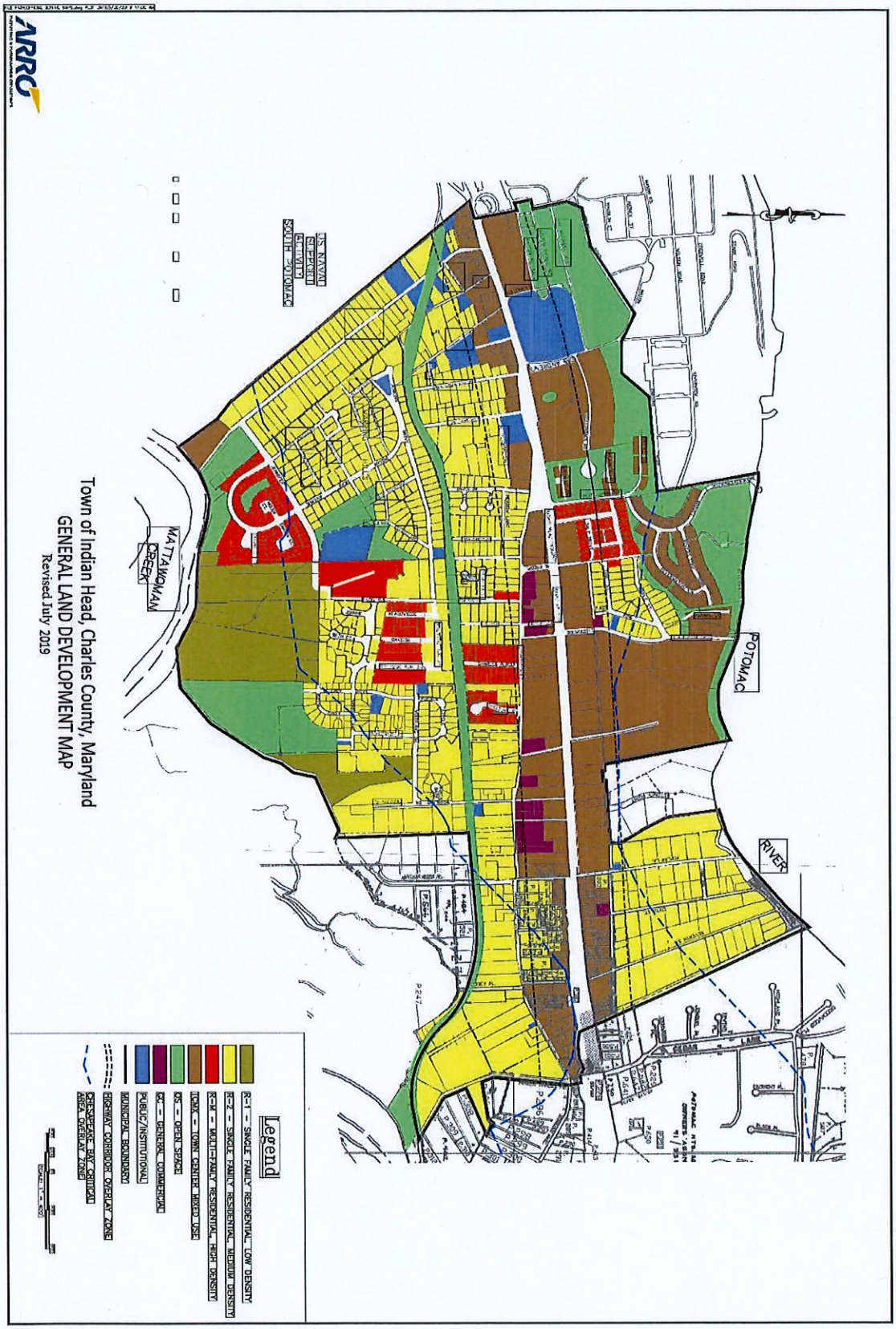

Town of Indian Head, Charles County, Maryland
GENERAL LAND DEVELOPMENT MAP
Revised July 2019
Legend
R-1 – SINGLE FAMILY RESIDENTIAL, LOW DENSITY
R-2 – SINGLE FAMILY RESIDENTIAL, MEDIUM DENSITY
R-M – MULTI-FAMILY RESIDENTIAL, HIGH DENSITY
TCMX – TOWN CENTER MIXED USE
OS – OPEN SPACE
GC – GENERAL COMMERCIAL
PUBLIC/INSTITUTIONAL
MUNICIPAL BOUNDARY
HIGHWAY CORRIDOR OVERLAY ZONE
CHESAPEAKE BAY CRITICAL AREA OVERLAY ZONE
U.S. NAVAL WEAPONS STATION SOUTH POTOMAC
MATTAWOMAN CREEK
POTOMAC
RIVER

ENVIRONMENTAL, SENSITIVE, CRITICAL AREAS

ENVIRONMENTAL, SENSITIVE, AND CRITICAL AREA GOALS

1. ***ESTABLISH LAND USE POLICIES FOR DEVELOPMENT IN THE CHESAPEAKE BAY CRITICAL AREA, WHICH ACCOMMODATES GROWTH WHILE MAINTAINING AND IMPROVING, WHERE POSSIBLE, THE QUALITY OF LAND AND WATER RESOURCES.***

2. ***PROTECT ENVIRONMENTALLY SENSITIVE AREAS (STREAMS AND THEIR BUFFERS, 100-YEAR FLOODPLAINS, ENDANGERED SPECIES HABITATS, FOREST LAND, AND STEEP SLOPES) FROM DEVELOPMENT IMPACTS TO PROVIDE FOR THE CONTINUANCE OF A HEALTHY ENVIRONMENT AND TO MAINTAIN THE CURRENT DIVERSITY OF FLORA AND FAUNA.***

POLICIES AND IMPLEMENTATION STRATEGIES

Policy EN.1: Protect the 100-Year Floodplain from the adverse effects of development.

Implementation Strategies:

1. Restrict the 100-Year Floodplain from further development. New structures will not be permitted within the 100-Year Floodplain, except for water dependent facilities associated with commercial or industrial development.

2. New development or substantial improvements to existing structures located in the 100-Year Floodplain shall not be permitted.

3. New residential structures shall not be permitted within the 100-Year Floodplain.

Policy EN. 2: Development will be directed away from steep slopes.

Implementation Strategies:

1. Avoid unnecessary disturbance of steep slopes.

2. Identify specific steep slope areas, such as the cliffs along the Potomac River, for specific attention to stabilization and wise management.

3. Develop appropriate best management practices and mitigation techniques to be implemented on the sites where disturbance to steep slopes cannot be avoided.

4. Prohibit new development on steep slopes (greater than 25%) unless it can be demonstrated that the stability of the slope will be improved and that adverse environmental impacts will be mitigated.

Policy EN. 3: The natural ecosystem and functions of the stream and stream buffers are preserved and enhanced, and stormwater is managed to prevent degradation of streams.

Implementation Strategies:

1. The Town will continue to monitor and try to identify and map any unknown perennial or intermittent streams and establish a minimum 25-foot buffer from each bank for areas outside the State Critical Area.

2. The quality of runoff from developed areas that enters tributaries and streams shall be improved.

3. Develop a stormwater management plan and program for the Town that uses retrofitting measures to address existing stormwater management problems.

4. Provide incentives for developers constructing new stormwater management structures to address areas that currently do not have stormwater management.

5. New development shall not be permitted within the stream buffer.

6. Alterations of streambeds or streambanks, except for best management practices to reduce erosion or for stabilization, shall be prohibited.

7. Disturbance of natural vegetation within stream buffers, including tree removal, shrub removal, clearing, burning, or grubbing, shall not be permitted.

8. The development or disturbance of streams or stream buffers for stormwater management shall not be permitted unless there is no other feasible alternative.

Policy EN. 4: Implement the provisions of the Chesapeake Bay Critical Area Overlay Zone ordinance through the permit review process to ensure that future development is consistent with the requirements of the adopted Town Program.

Implementation Strategies:

1. Direct and manage development within the Critical Area such that water quality and habitat protection are conserved while accommodating growth.

2. Promote the environmentally sensitive development of water dependent uses in the appropriate locations in recognition of the historic and future importance of water related industries to the Town.

3. Encourage the protection of rapidly eroding shorelines (more than 2 feet per year) in order to reduce damage to real estate, to minimize suspended silts, and to reduce deposition of silts that fill channels.

4. Conserve forests and developed woodlands and promote expansion of forested areas to maintain and preferably increase the forested vegetation in the Critical Area.

5. Encourage the creation of opportunities for interaction between people and the natural environment.

6. Minimize the adverse impacts to nature and habitats of the shoreline and adjacent lands.

7. Maintain the 100-foot buffer landward from the mean high-water line of tidal waters and wetlands.

8. Work with the Natural Heritage Program of the Maryland Department of Natural Resources to identify the locations of threatened and endangered species in need of conservation and develop appropriate management strategies for each area.

INTRODUCTION

The need to protect environmentally sensitive areas is based on the concept that these resources are vital to the well-being of the community. Destruction or drastic alteration of these areas can be detrimental to the social and economic welfare of a community by creating hazards such as flooding, destroying important public resources such as groundwater supplies and water quality of streams, rivers, and the Bay, wasting important productive lands and renewable resources, and destroying the natural beauty that attracts tourists and new business to the Town.

The Economic Growth Resource Protection and Planning Act of 1992 require local governments to address sensitive areas in their Comprehensive Plans. The law targets protection of six sensitive areas: 100-Year Floodplain(s), streams or wetlands and their buffers, habitats of threatened and endangered species, steep slopes, agricultural or forest land intended for resource protection or conservation, and any other area in need of special protection (as determined).

These areas are extremely sensitive to the impacts of development and are vulnerable to degradation associated with the number, movement, and activities of people. Quite often, these areas are unsuitable for development and disturbance of these areas may preclude the valuable natural functions they provide such as flood control, stormwater management, and habitat protection. Additionally, disturbance of these

areas can impact the natural resources that contribute to the Town's character and residents' quality of life.

In order to protect these sensitive areas, the Town has adopted ordinances and regulations. The Town has adopted a Floodplain Management Ordinance, Forest Conservation Ordinance, and regulations in the Zoning Ordinance to protect steep slopes, forested areas, the 100- Year Floodplain, and threatened and endangered species. The Town has also adopted, as part of the Zoning Ordinance, regulations to protect the Chesapeake Bay Critical Area.

THE 100-YEAR FLOODPLAIN

The 100-year flood is defined as a storm event that has a 1% chance in any given year that a storm of this severity is likely to occur. The 100-year Floodplain is an area that is likely to be inundated during a 100-year flood. These areas are generally characterized by flat topography and soil types that were laid down during the past inundation by floodwaters. In general, structures can only be safely built within the Floodplain if specific engineering works such as dikes, levees, floodwalls, etc. are constructed. Within the Town, there are two areas that are affected by the 100-Year Flood. One is located off of the Potomac River in the Potomac Woods neighborhood. The other area is located off Mattawoman Creek in the Warrington Hills area. Mattingly Park is also located within the 100-Year Floodplain.

Generally, restricting development in the 100-Year Floodplain has the greatest potential for achieving environmental and resource protection goals required by the 1992 Planning Act. Restricting these areas within the Town from further development will also serve to protect against the loss of life and property.

STEEP SLOPES

Most of the Town is relatively flat and slopes are generally less than 10 percent; however, there are three areas where slopes exceed 25 percent. The largest area of steep slopes consists of steep cliffs located at the northern edge of the Town where it borders the Potomac River. Another area of steep slopes is located at the northwestern corner of the Town. A third area is located south of Old Indian Head Road near the southeastern boundary of the town.

Areas of steep slopes can create limits to human activity and are generally not well suited for development. Development on and disturbance of steep slopes can adversely affect water quality, especially when the slopes are associated with tributaries of the Chesapeake Bay or when highly erodible soils are also present. It is important to protect steep slopes for many reasons. Preservation of steep slopes adjacent to watercourses protects water quality and aquatic habitat. Preserving vegetation on steep slopes can minimize hazards such as flooding, landslides, upland slumping, erosion, and pollution.

Steep slopes also tend to increase biodiversity when compared with more uniform living conditions. Steeply sloped lands are often comprised of numerous small areas with very specific living conditions called microhabitats to which certain plants and organisms are specifically adapted. Steeply sloped areas may

consist of numerous microhabitats and their associated species, and conservation of the biodiversity that characterizes these areas is an important consideration in steep slope protection.

STREAMS AND THEIR BUFFERS

The Potomac River and Mattawoman Creek are fed by several perennial and intermittent streams. These streams are an important component of the Town's undeveloped areas and have several important functions. These streams intercept stormwater runoff and contribute to the quality of the Town's water resources. They also contribute to the Town's overall environmental health and ecological balance serving as pathways for transporting sediments and nutrients. These streams also promote biological diversity by interconnecting ecological systems and functioning as components in hydrological and nutrient cycles.

Streams are vital not only to the Town's natural ecosystem, but they also perform several important functions including holding and carrying stormwater, providing valuable habitat for fish spawning, and supporting a variety of recreational activities.

Development in the Town has resulted in significant impacts to streams and their buffers. As areas of open land were built upon, new impervious surfaces, forest clearing, and intensified human activity increased pollution, stormwater quantities, and sedimentation in streams while decreasing the streams natural protection. Maintaining the health of a stream is dependent on many factors occurring throughout the watershed; however, buffers are critical components of the stream ecosystem that perform many functions and contribute to optimum effectiveness. A healthy stream with steady base flow, natural bends, adequate shade cover, an integrated combination of deep pools and slow-moving runs, and wide well-vegetated buffers provides the optimum water quality, habitat, and ecosystem benefits.

Stream buffers are much more than a line drawn a certain distance away from a stream channel. Natural vegetation along streams provides habitat, stabilizes banks, provides shade, filters pollutants, and produces leaf litter and woody debris that form the base of the flood chain. The varying hydrologic regimes and topography normally associated with streams promote excellent biological diversity in a limited area of land. Streams and their buffers are especially important in small towns such as the Town of Indian Head where they can function as greenways, wildlife corridors, and stormwater transport and holding systems.

In the Town, the quality of streams and their buffers directly impacts the Potomac River and the Mattawoman Creek. Excess nutrients, sediments, and pollutants from developed lands in the Town can contribute to over-nitrification and excess turbidity. These conditions could impact water quality and the health of the bay grasses.

The Town's streams are a vital component of the ecological network that provides many important benefits to the Town. Streams and their buffers should be protected from the adverse effects of human disturbance.

HABITAT OF THREATENED OR ENDANGERED SPECIES

The physical and biological features of certain areas are conducive to the maintenance, expansion, and long-term survival of threatened and endangered species. These features include the structure and composition of the vegetation, the faunal community, soils, water chemistry and quality, geology, and hydrology. Protection of threatened, endangered, and locally rare species is grounded in ethical and cultural reasons for preservation of all species, regardless of their known value to humans. This ethic is part of the current emphasis placed on conserving biological diversity. The key to protecting rare and endangered species is protecting their natural habitats from human disruption.

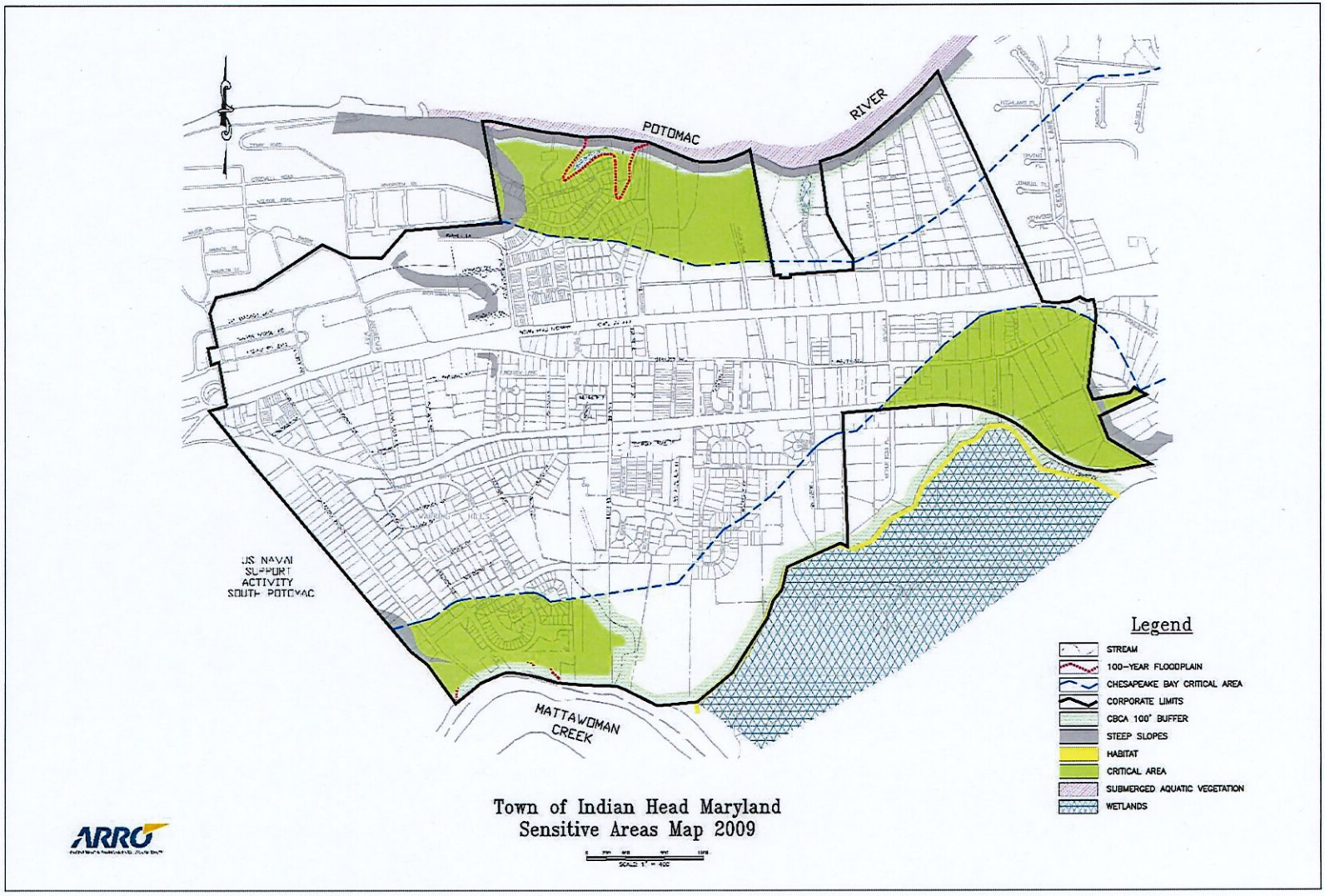
There are no known threatened or endangered species located within the boundaries of the Town. It is possible that areas may be discovered in the future, at which time goals, objectives, and recommendations will be formulated and adopted for each site.

CHESAPEAKE BAY CRITICAL AREA

Responding to warnings regarding nutrients and toxics entering the Bay that had been linked to its declining health and need to minimize damage to water quality and wildlife habitats, the Maryland General Assembly enacted the Critical Area Law in 1984. Their findings indicated that there is a critical and substantial state interest in fostering more sensitive development activity along the shoreline of the Chesapeake Bay. The Critical Area was defined by the act as all land and water areas within 1000 feet beyond the landward boundaries of State or private wetlands and the heads of tides.

AGRICULTURAL OR FOREST LAND INTENDED FOR RESOURCE PROTECTION OR CONSERVATION

While there is no agricultural land within the Town, forest land does exist within the Town, primarily within the Chesapeake Bay Critical Areas. The existing forest land within the Town parks will be preserved and is under the protection of the Town. The majority of forest land is within private ownership. Before any forest lands are disturbed, environmentally sensitive areas within the Critical Areas, riparian buffers, steep slopes, or within flood prone areas will be preserved by state or federal restrictions. Under the Town's Forest Conservation Ordinance, reforestation and afforestation requirements will prevail.



Town of Indian Head Maryland
Sensitive Areas Map 2009

MUNICIPAL GROWTH

MUNICIPAL GROWTH GOAL

TO PROMOTE MANAGED GROWTH THROUGH INFILL DEVELOPMENT AND REDEVELOPMENT WHILE MINIMIZING THE IMPACT ON ENVIRONMENTALLY SENSITIVE AREAS AND THE TOWN'S INFRASTRUCTURE.

POLICIES AND IMPLEMENTATION STRATEGIES

Policy MG.1: Promote development of vacant property (infill) within the Town where infrastructure currently exists.

Implementation Strategies:

1. Streamline and/or modify the permit and review process to incentivize infill development.

2. Consider implementing a density bonus for development on small parcels and/or less restrictive building setbacks on small parcels.

Policy MG.2: Promote a well-designed, walkable mixed-use development.

Implementation Strategy:

1. Modify zoning and subdivision regulations to require pedestrian and bicycle friendly communities.

Policy MG.3: Remove blighted development and promote redevelopment.

Implementation Strategies:

1. Consider implementing a density bonus in redevelopment areas.

2. Improve parking opportunities in existing commercial and mixed use areas to promote redevelopment.

INTRODUCTION

The Municipal Growth Element begins with future population and housing demographics to provide the data necessary for analysis of impacts to facilities in Indian Head or land areas adjacent to the Town of Indian Head precipitated by population growth. The element will help to analyze present shortages in housing, the need for higher density in residential districts in future years, and the possibility of annexation of land outside of the Town boundaries. The demographics used in this chapter will be carried over to the Water Resources Element for analysis of water and sewerage facilities.

FUTURE POPULATION AND HOUSING FORECASTING

This section includes trends that identify expected future yearly population projections and assesses implications of expected future population trends for purposes related to accommodating community planning in the next twenty years. It places an emphasis on expected housing needs, water and sewer availability, and possible growth of community services.

Population size serves as the benchmark for planning the physical needs of the community. It is one component for estimating overall land and facility needs. Analyzing the characteristics of the population assists the Mayor, Council, and Planning Commission in making informed decisions regarding the needs and service demands of the present population.

Although population projections are less than precise, they provide the basis for estimating housing and infrastructure impact and demand, and an analysis of population relative to jobs and journey to work forecasting can be helpful to establish the need for businesses in Town. The population in Town is important to the types of services and retail establishments that can be supported in Indian Head and in areas in close proximity. The Municipal Element looks at these factors so as future population growth takes place, the appropriate infrastructure, services, and housing will be available to the Town.

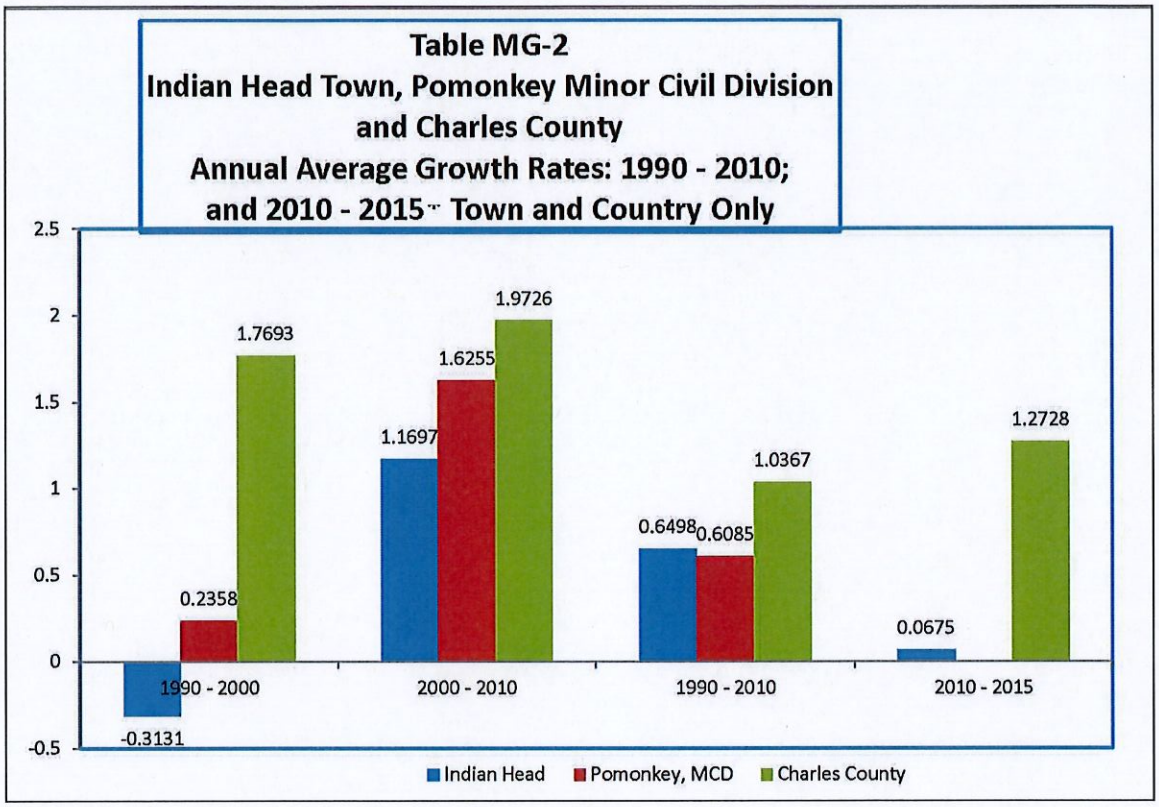
Review of Census data for Indian Head and selected jurisdictions for comparison has helped to establish the growth rate for the Town. Indian Head had an average growth rate of approximately 12 percent between the years of 2000 and 2010 according to US Census figures.

Estimated Population for Indian Head and Selected Jurisdictions
Table MG-1

Year	Indian Head	% of Growth	Charles County	% of Growth	Maryland	% of Growth
1970	1,350	---	47,678	---	3,922,399	---
1980	1,381	2.3%	72,751	52.6%	4,216,975	7.5%
1990	3,531	155.7%	101,154	39.0%	4,781,468	13.4%
2000	3,423	-3.1%	120,546	19.2%	5,296,486	10.8%
2010	3,844	12.3%	146,551	21.6%	5,773,552	9.0%

In their 2016 Comprehensive Plan, Charles County projected a 1% population growth to year 2040, or approximately 37,000 new residents. In 2016, the ten-year average rate of growth was 1.4%

From 2010 to 2015, the Town experienced little growth. The Town of Indian Head's total population has declined as a share of Charles County's population since 1990. The annual average growth rates for the County, Town of Indian Head, and Pomonkey Minor Civil Division are shown below based on U.S. Bureau Census counts from the decennial census and the Bureau's 2015 current population estimate.



A review of the Town's Annual Planning Commission reports indicate that only 21 single-family homes were authorized between 2010 and 2015 with no multi-family units. Based on these trends, population projections through year 2030 are less aggressive than those contained in the Town's 2009 Comprehensive Plan. Population projections applying the annual average growth rate from 2000-2010 produce projections as shown in Table M-3.

According to the 2010 Census reports, the average household size in Indian Head was 2.76 persons. Households represent all people occupying a housing unit, whether related or not (containing no more than one family); a family includes a household who are related to the householder by birth, marriage, or adoption. Therefore, not all households contain families, since a household may comprise a group or unrelated people or one person living alone.

Table MG-3 shows population projected from 1980 to 2030. Projections in the year 2030 predict a rise in population to 4,592 persons and 1,664 households. These numbers have been used for forecasting of the Community Facilities and Water Resources Element.

Projected Population and Household Projections - 1980 -2030
Table MG-3

Year	*Indian Head Population*	*Population Change for Period %*	*Households*	*Household Change For Period %*
1980	1,381	-	482	-
1990	3,531	156	1,235	156
2000	3,423	-3.1	1,222	-3.1
2005	3,603	5.2	1,291	5.6
2010	3,844	6.7	1,391	7.7
2015	3,857	0.3	1,397	0.4
2020	4,181	8.4	1,514	8.4
2025	4,333	3.6	1,570	3.7
2030	4,592	6.0	1,664	6.0

Historical population from 2010 census data and 2015 census population estimates.

Number of households based on 2.76 persons/dwelling based on 2010 census.

GROWTH PATTERNS

With the Naval Support Activity South Potomac (NSASP), Naval Support Facility Indian Head is (NSFIH) increasing importance as the Center for Energetics, a stable workforce is expected for the foreseeable future.

As can be seen from the historic population in Table MG-3, the population rose sharply from 1980 to 1990. This increase can be explained by the annexation of Woodland Village and Knotts subdivision and the completion of State Route 210. After a small reduction in population in the 1990's, the population has risen steadily until the economic downturn nationally in 2007/2008.

Today, the Town has a different mix of small businesses, most of which are located along Route 210. The Town also has several delicatessens, business and professional offices, car repair, home décor, veterinary, florist, gift, beauty, beverage, candy, and bakery shops. The most needed service within the Town is a grocery store.

Since the 2009 Comprehensive Plan was adopted, a number of new community facilities have been added to the Town. A connector trail from the County Rail Trail to Village Green Park and a Trailhead Plaza has been completed. In addition, several multi-family housing projects have been built in Riverwatch and along Route 210.

There have been several proposals discussed, including multi-story mixed residential and commercial buildings, for some of the vacant properties that are located along Route 210 in the downtown area and a multi-family development on the 20-acre parcel owned by CIRI (Cook Inlet Region). The rest of the Town consists of single-family attached and detached dwelling units, townhouses, and apartments.

In 2004, the Mayor and Council approved a change to the Town Zoning Ordinance to create the Town Center Mixed Use District. This district allows a developer flexibility in the design and increased density with the goal of achieving a well-designed, mixed-use neighborhood. The Town's objective is to allow development that demonstrates excellence in architectural and urban design compatible with the historic architecture of the Town while providing for safety, convenience, economic vitality, and beauty for the town residents. The public hearing process that takes place at the Planning Commission meeting provides input from citizens relative to the proposal brought forth. Much of the negotiation between the Commission and the developer is created due to the small lot sizes, the lack of parking in Town, and the placement of buildings in an optimum place.

Indian Head has a major part of Town that is located in the Critical Area and a lesser portion of Town that is located in the 100-year FEMA floodplain. Although these natural features make it more difficult to develop the Town, these designations are respected and considered with all development requests.

The existing zoning classifications of the Town are reflected in Table MG-4. Table MG-5 defines the proposed land classifications and the recommended density and uses in those areas.

Existing Zoning for Residential, Commercial, Mixed Use and Recreation Uses
Table[1] MG-4

Zoning Classification	Definition
R-1 - Single Family Residential	Intended to provide for low-density single-family housing on minimum lot size of 15,000 SF and preserve and protect the primarily single-family detached residential character of the district and to keep these areas free from the land uses that are incompatible with and/or might adversely affect these single-family neighborhoods.
R-2 - Single-Family Residential	Intended to provide medium density residential detached housing on minimum lot size of 8,000 SF and promote the development of a pleasant living environment

RM – Multi-Family Residential	Intended to provide for a variety of multi-family dwellings and supporting uses at a higher density than R-1 and R-2 including townhouses, condominiums, and apartments.
GC - General Commercial	Intended to provide locations for small-scale and low-impact commercial and non-residential uses while protecting residential character within and adjacent to the district.
TCMX – Town Center Mixed Use	Intended to promote a mixture of multi-family residential and commercial uses, to promote and enhance a pedestrian oriented development, and permit a mix of uses that can be found in a traditional town center or neighborhood setting.
OS - Park and Recreational District	Established to provide and protect locations for parkland and recreational activities and needs.
Institutional	Provide for churches, schools, and public facilities

[1]Table has been prepared using the current Indian Head Comprehensive Plan and Zoning Map

In addition to the Land Use Classifications, the following Overlay Districts are part of the Plan. The Critical Area Overlay Zone is located 1,000 feet landward from Mattawoman Creek and the Potomac River. Development in this zone is restricted related to density, disturbance, and forest removal. The Highway Overlay Zone extends 500 feet on each side of Route 210. All architectural features in view from Route 210 are reviewed by the Planning Commission with the goal of improving aesthetics through Town.

Future Land Use Classifications
Table MG-5

Land Use	Recommended Density	Recommended Uses
Institutional	Variable	Publicly owned areas of the Town where the public is invited to congregate or areas that are used for private/public **education or worship**.
Commercial/ Residential Mixed Use	Variable Up to 20 DU/AC residential	A combination of uses including residential and non-residential. Uses may include offices, retail, institutional uses, **residential** and small passive recreation areas. The purpose of this district is to enhance and redevelop the downtown area along and adjacent to the Route 210. This district requires compliance with the Highway Overlay Zone design guidelines.
Residential, Low Density	3 DU/AC	Single-family, detached, and residential accessory uses.
Residential, Medium Density	4-5 DU/AC	Single-family, detached, and residential accessory uses.

Residential, (High Density) Multi-family	6-15 DU/AC	Single-family, detached, attached, and multi-family, and residential accessory uses.
Recreation	Variable	Lands and facilities generally owned and operated by the Town or other level of government for the purpose of recreation or public open space.
Commercial	Variable	Intended to provide locations for small-scale and low-impact commercial and non-residential uses while protecting residential character within and adjacent to the district.

Prepared by ARRO using current zoning ordinance of the Town.

Comparison of Existing & Proposed Land Uses
by Percent of Acres of Land in Indian Head
Table MG-6

Land Use	Existing Acres	Share of Town %	Proposed Acres	Share of Town %	Percent of change in Proposed Land Use from Existing Land Use
General Commercial	38	4.8%	38	4.8%	0%
Mixed Use Commercial	136	17.1%	91	11.5%	-5.6%
Total Commercial	174	21.9%	129	16.3%	-5.6%
Government Public/Institutional	26	3.3%	26	3.3%	0%
Roads					
Residential Low Density	45	5.7%	45	5.7%	0%
Residential Medium Density	376	47.4%	407	51.2%	3.8%
Residential High Density	60	7.6%	60	7.6%	0%
Total Residential	481	60.7%	512	64.5%	3.8%
Recreation/Open Space	112	14.1%	126	15.9%	1.8%
Total Acreage	793	100 %	793	100 %	0%

DEVELOPMENT CAPACITY AND BUILD OUT ANALYSIS

The development capacity analysis is the basis for determining whether existing developable land will accommodate future population growth or whether redevelopment of parcels with higher density, development on existing vacant land, adaptive reuse of structures, or annexation is required. This is one function of the Municipal Growth Element that is mandated to appear in the Comprehensive Plan by State law. This analysis is important because it helps to determine if there is an adequate balance between land supply, demand, services, and infrastructure.

As stated in the Land Use Element, Indian Head is located in the northwest corner of Charles County. The marsh land of the Mattawoman Creek borders 100 percent of the south border of the Town and the Potomac River borders approximately 60% of the northern border.

The majority of the northern border of Town along the Potomac River is within the Critical Area boundary and the Limited Development District. The southern boundary along Mattawoman Creek is also within the Critical Area boundary and the Resource Conservation District. The western border is the NSASP and NSFIH and the eastern boundary is Charles County, currently zoned low/moderate residential.

It is prudent for the Town to encourage infill development that can improve the quality of the older community. Infill development is in keeping with Smart Growth and is encouraged by the State as an efficient method of development because the infrastructure is already present at the sites. However, it is important when reviewing projects that infill development should be designed to be attractive and compatible with the existing development in Town. In addition, some vacant lots may need to be consolidated due to their small size. Zoning text to provide regulations to accomplish development of infill lots should be considered for small infill lots during any rewrite of the Zoning Ordinance.

Incentives may be necessary for infill lot development due to the fact that construction is generally higher since it is more difficult to realize economies of scale for one building rather than several in an area. Infill development can be beneficial, especially since the Town does not have a lot of annexable area around it. In addition, this type of development is efficient for emergency and public safety because it makes turn-around times faster, and it adds to the goal of being a walkable and bikeable community. Infrastructure is already in place and infill lots are less costly to provide sewer and water.

Table MG-7 lists the vacant lots that exist in Indian Head and the densities that would be applied to dwelling units that could be constructed in Town.

The Critical Area legislation was passed in 1984. The Critical Area is defined as a strip of land along the tidal shoreline extending 1,000 feet landward from the water's edge, or from the landward boundary of any adjacent wetland. While the Critical Area Act aims to protect resources within the Critical Area, the law does not prohibit development within the designated area. Instead, the law regulates and restricts land development. The existing Indian Head Zoning Ordinance contains the regulations for such development.

Vacant Lots with Potential for New Construction in the Existing Town Boundaries
Indian Head
Table MG-7

Land Use Designation	Acreage	Forecasted Density	Remarks
R-1 (Low Density Residential)	25 Ac.	1 EDU	Land is in RCA
R-2 (Medium Density Residential)	30 Ac.	120 EDUs	60% of area is in LDA of Critical Areas
(TCMX) Town Center Mixed Use	54 Ac.	496 EDUs	40 acres in Critical Areas (LDA) including previously approved preliminary plan for Ridgewater. Assumed all residential but could develop as commercial.
Redevelopment	10 Ac.	150 EDUs	
Total	**109 Ac.**	**767 EDUs**	

Even the most conservative manipulation of the numbers in this chart provides evidence that the existing Town land can accommodate the increase in development projected for 2030. Redevelopment of existing parcels within the Mixed-Use District along Route 210 and Strauss Avenue that are outside of the Critical Areas could be developed at a density between 20-40 units per acre. It is expected that some redevelopment will take place over the 20-year planning period. Therefore, the Development Capacity and Build out Analysis indicates that there are sufficient vacant lots within the municipality that would accommodate the future growth to the year 2030. It is not expected that Annexation of Charles County land will be necessary unless wells or septic fail in the County and the State mandated that they hook on to Indian Head's public water and sewer.

Redevelopment within Indian Head's existing municipal boundaries is consistent with Smart Growth and meets the intent of House Bill 1141. Infill development relieves growth pressure on areas in Charles County and can rejuvenate and improve the quality of life for older communities like Indian Head. The Town does have vacant, underutilized land within its built-up areas where infrastructure already exists.

The State encourages Comprehensive Plan policies and provisions for infill. Of course, this would need to be followed by revising the text of the Zoning Ordinance with such provisions as:

- Zoning that encourages infill on certain vacant, abandoned, or underutilized parcels of land within built-up areas of the jurisdiction;
- Zoning tools that require connectivity of infill with surrounding streets and open spaces;
- Zoning that allows a mix of planned housing types;

- And regulatory processes that make infill competitive with conventional development. Since Indian Head has a number of small lots in Town, variances may allow the developer to build a better product or granting modifications may allow for consolidation of lots to produce a cost-effective option to new construction.

There are some barriers for infill development as shown below:

- Site constraints, such as wetlands, poor drainage, and poor soil.
- Site next to nuisances, such as heavily traveled roads.
- Social barrier, fear of the unknown, opposition to higher density, difference of housing types in the community, insufficient parking.
- Concern that the development will not be compatible with the neighborhood.
- Economic barriers, uncertainty of regulations, challenges in meeting the size, building materials, style of other buildings in the neighborhood may discourage the builder from constructing his project because of the extra time it takes to get approvals.
- Construction is higher for infill development since it is more difficult to realize economies of scale for one building rather than several in an area.

Site constraints such as wetlands and poor soils impede this type of development. Indian Head is aware of and knows the limitations that are caused by wetlands, floodplain, and Critical Area legislation and have endured and built their fine community in spite of those natural restrictions.

Human nature and fears of the unknown are always present with new development. The Town officials agree that there needs to be compatibility in new development and have indicated that they want the historic character of this small, family friendly Town to continue into the next decades. They realize that it is very important to have citizen participation in the decisions that are made at Town Hall and welcome resident input.

However, there are some issues that do need to be addressed with any growth that would take place in Town.

- Parking is insufficient at the present time in the older part of town.
- Sewer and water taps are limited.

ANNEXATION

During the preparation of this Comprehensive Plan, the possibility of annexation of adjacent land was analyzed. The Future Potential Annexation map identifies possible future annexation areas. If and when annexation(s) take(s) place, the burden for providing local matching funds, as applicable, for select infrastructure improvements in those areas will likely shift from Charles County to Indian Head. This condition may apply to improvements to State Highway Administration (SHA) or locally-owned infrastructure. It also may apply to improvements funded with SHA, other State, or other outside funding sources that require local matching funding. Annexation also allows the potential for agreements with developers of parcels currently outside Indian Head in which Indian Head can work to secure new or improved infrastructure, e.g., water, sewer, etc., at the cost to the developer as a condition of annexation.

The NSASP and NSFIH, occupying approximately 3,500 acres, are identified as a future annexation area. As long as the property remains in the hands of the federal government, annexation would have no impact on the Town, and the Town would have no influence on the development that may occur. The federal government, being a higher government power than the Town, would not be subject to the Town's land use regulations or municipal powers. Should the property ever cease to operate as a federal institution and the land declared as surplus and sold to a private entity, annexation would allow any future land use changes to conform to the Town's regulations. The NSASP and NSFIH currently is served by its own water and wastewater distribution, storage, supply and treatment systems, and its own transportation system. Annexation would therefore have no impact on the Town's infrastructure and may actually serve to supplement the Town's existing infrastructure needs.

A small existing single-family development along Arthur Ross Place is shown as a potential annexation area since the Town borders the area on two sides. The properties are currently served by private wells and septic systems. The property is located within the Resource Conservation District of the Critical Areas allowing one dwelling on 20 acres. Should the existing property owners petition the Town for annexation due to failing wells and/or septic system or for other reasons, annexation would be a logical step. Public water and sewer could be paid for by the residents through a front foot assessment. The existing Mattawoman Natural Environment Area was also included as a potential annexation area, which, due to its environmentally sensitive nature, would not be developed but could be improved with boardwalks, nature trails, or other passive recreational facilities to compliment the Town's current open space and park system.

Another small single family detached subdivision along Stoney Point Place was identified as future annexable land since it is bordered by the Town on three sides. This area is within the Limited Development District of the Critical Areas. Should the existing property owners petition the Town for annexation due to failing wells and/or septic systems or for other reasons, annexation would be logical. Public water and sewer could be paid for by the residents through a front foot assessment.

The properties along Parker Harley Place on the east side of town and the contiguous properties bounded by Route 210, Strauss Avenue and Lower Wharf Road were also identified as potential annexation areas

since they are adjacent to the Town boundary and viewed as a logical extension for the existing Town to the east. Any future development would be low to medium density residential or mixed use along the highway, consistent with the existing Town and County land use map. Public water and sewer currently exist along Parker Harley Place and could easily serve these properties. The remaining area is within the County's water and sewer service area and could be served by the County or services extended by the Town paid for by the property owners through a front foot assessment.

Table MG-8 provides a summary of potential development within the areas designated for potential annexation

Summary of Potential Development for Annexed Areas
at Full Build Out
Table MG-8

Land Use	Acres	Development Potential	Water/Sewer Demand	Remarks
R-2/Low Medium Residential	33	4 units/acre = 132 EDUs	33,000 GPD	250 GPD/ dwelling
TCMX Mixed Use	32	10 units/acre = 320 EDUs	80,000 GPD	1,000 GPD/acre for commercial use 250 GPD for residential use
Stoney Point Place	17	7 EDUs	1,750 GPD	Critical Areas
Arthur Ross Place	19	13 EDUs	3,250 GPD	Critical Areas
TOTALS	101	472 EDUs	118,000 GPD	

Based on previously developed information, buildout of available land within the current Town Boundaries and development projected through 2030 will exhaust the current water supply of the Town. The Town should, when planning any expansion of the existing water system to meet projected demands in 2030, consider the additional burden of annexation on the Town's facilities. However, it is expected that since a portion of the potential annexation areas along Strauss Avenue and Route 210 are in the County water and sewer service area, the burden on Town facilities will be partially mitigated.

DRINKING WATER ANALYSIS ASSESSMENT

Groundwater is the sole source of potable water supply for the Town, which is treated and distributed at four separate well sites. Based on the highest semi-annual ground water withdrawal reports for the past five years, the Town actually withdraws on average 256,265 gallons per day. The potable water supply is currently provided by four separate wells in the Patapsco and Patuxent Aquifers yielding 534,600 gallons per day with all wells operating 18 hours per day. With Well #5, out of service, the yield from the remaining wells is 534,600 gallons per day. Well #2, pumping at 105 gallons per minutes (gpm), is located on Evelyn

Lane, Well #3, pumping at 230 gpm, is located on Dogwood Street, Well #4, pumping at 160 gpm, is located on Woodland Drive, and Well #5, pumping at 180 gpm, is located at Woodland Drive and Pueblo Circle. Table MG-9 below provides average daily water demands through the planning period.

Water Demand Projections for 2030
Table MG-9

	2000	2005	2010	2015	2020	2025	2030	Change %
Population	3,423	3,603	3,844	3,857	4,181	4,333	4,592	34% or 1.1%/yr
Household	1,222	1,291	1,391	1,397	1,514	1,570	1,664	36% or 1.2%/yr
Household Size	2.80	2.79	2.76	2.71	2.67	2.64	2.60	-7.0% or -0.2%/yr
Water Demand (GPD)[1]	226,070	238,835	257,335	258,445	287,695	301,695	325,195	44% or 1.5%/yr

Source: Department of State Planning.

[1] Average day demand at 250 GPD/EDU for future flows beyond 2015

Combined water storage of 500,000 gallons is provided by two elevated ellipsoidal tanks and one (1) ground level tank. Tank #1 is a 100,000-gallon tank on Town Street constructed in 1954 and last repainted in 2000. Tank #2 is a 200,000-gallon tank on Diffenbach Court originally constructed in 1980. Tank #3 is a 200,000-gallon ground level tank located at Well #6R on Thompson Lane that was constructed within last 5 years. Overflow elevation for both elevated tanks is elevation 204. All tanks are currently maintained by Utility Services Company, Inc. under contract to the Town.

The Town's water distribution system consists of water main sizes from 4-inch to 8-inch diameter. Fire suppression as well as domestic needs are satisfied throughout Town with pressures ranging from 40 psi to 80 psi depending on the specific locations. All water customers are metered.

The Town currently operates its water distribution system under Water Appropriation and Use Permit Number CH19576003(10) and CH19576103(03). It permits the Town to pump groundwater from five existing wells for a combined daily average allocation of 350,000 gpd and 577,000 gpd for the month of maximum use.

The Patapsco Aquifer, from which Indian Head obtains the majority of its water supply, currently provides drinking water to meet the current needs of residents. The Maryland Department of the Environment has indicated, however, that the Patapsco Aquifer is currently stressed and additional appropriation from this

aquifer for the Town's use will not be forthcoming. In order to meet the needs for additional growth anticipated through 2030, new well(s) withdrawing from the lower Patuxent Aquifer will be required. The Town has already developed a new well at the location of old Well #6 on Thompson Lane, which draws water from the Patuxent Aquifer.

Current water quality from the existing wells is satisfactory based on monthly town testing, except for Well #5, which has elevated levels of gross alpha. Well #5 has been taken off-line.

Available Capacity for New Growth
Table MG-10

	Capacity Based on Average Day Flow	Average Day Capacity during Month of Maximum Use	Maximum Day Capacity
*Current Permit Limit	350,000 gpd	577,000 gpd	534,600 gpd (1)
Historical High x 10% for drought	-307,950 gpd	-342,770 gpd	-420,950 gpd
Potential demand from approved development	42,050 gpd -500 gpd	234,230 gpd -650 gpd	113,650 gpd -800 gpd
Net Excess Capacity	**41,550 gpd**	**233,580 gpd**	**112,850 gpd**

(1) from Table WRE-2

**240,000 GPD for four (4) wells in the Patapsco Aquifer and 110,000 GPD for Well #6R in the Patuxent Aquifer.*

Given the conservative assumptions as stated above, the available average day capacity for new growth is 41,550 gpd. The Town's system has adequate capacity to meet average day demands through 2024.

The Town currently does not have a wellhead protection plan. A wellhead protection plan identifies the area of influence for each well and identifies any potential sources of pollution or contamination that may affect the wells. The Town should therefore conduct a wellhead protection study and adopt a plan to protect the well sources from future contamination.

Based on a comparison between pumped and customer metered flows, the Town's unbilled water is approximately 27%, a portion of which can be accounted for in hydrant flushing, fighting fires, leaks, and public buildings. To better manage unaccounted for water, the Town should establish a detailed tracking program to closely monitor each category of unaccounted for water. Using the list of sources identified, the Town should estimate the amount of water lost by each source on a monthly basis.

Once the amount of unaccounted for water has been estimated for each month, each category should then be evaluated to determine methods of reducing or eliminating unmetered uses. If the volume of unaccounted for water continues to exceed 10%, a more detailed study of the Town's unaccounted for water would be warranted. A detailed unaccounted for water study would include a leak detection survey of the distribution system.

As stated previously, the Town's water storage capacity consists of 500,000 gallons within the separate storage tanks. Analyzing the sufficiency of existing storage requires a judgment involving the quantity and duration of fire flow. Given the nature of development in the Town of residential, multi-family, and small commercial (no industry), a duration of two hours was used. An analysis of the storage volume given the existing and projected population is provided below in Table MG-11.

Water Storage Analysis
Table MG-11

YEAR	POP	1 EDU's	2 Average Daily Demand (GPD)	3 Equalizing Storage (GAL)	4 Fire Flow (GAL)	5 Emergency Reserve (GAL)	6 Required Storage (GAL)	7 Existing Storage (GAL)	8 Storage Surplus or Deficit
EXISTING	3,857	1,397	258,445	70,813	235,640	102,151	408,604	500,000	91,396
2020	4,181	1,514	287,695	78,828	245,202	108,010	432,040	300,000	67,960
2025	4,337	1,570	301,695	82,664	249,572	110,745	442,981	300,000	57,019
2030	4,592	1,664	325,195	89,103	256,581	115,228	460,912	300,000	39,088

Column 1 – Assumes growth at rate from Table WRE-1.
Column 2 – From MG-1
Column 3 – Equalizing storage is 20% of maximum daily demand – Maximum daily demand is assumed at 1.37 x average daily demand.
Column 4 – Fire Flow at 2 hours duration and G=1020 P ½ (1-.01(P ½)) where G = GPM and P = population in thousands
Column 5 – Emergency Reserve is 25% of total storage.
Column 6 – Required Storage is Column 3 + 4 + 5

The analysis indicates that the current water storage volume is adequate for the planning period.

WASTEWATER TREATMENT ASSESSMENT

The Town's sewage treatment is provided by the Town of Indian Head Wastewater Treatment Plant located on Hailey Road. The plant's average daily treatment capacity is 500,000 gallons per day. In early 2009, construction of an Enhanced Nutrient Reduction (ENR) project was completed, which provided for the ability of the treatment plant to produce an effluent reliably consisting of 4 mg/l of nitrogen and 0.3 mg/l

of phosphorus. This enhancement greatly reduces the loadings of nitrogen and phosphorus discharged into the Chesapeake Bay to 6,088 lbs/year and 457 lbs/year respectfully. The new upgraded plant is a 4-stage bardenpho process discharging to Harrison Cut, which flows to the Mattawoman Creek. Sludge, which is thickened at the plant, is hauled to the County's Mattawoman Treatment Plant for dewatering and ultimate disposal. The most recent 3-year average daily flows metered at the plant are 394,300 gpd. Table MG-12 summarizes the projected sewer demand over the planning period.

Sewer Demand Projections for 2030
Table MG-12

	2000	2005	2010	2015	2020	2025	2030	Change %
Population	3,423	3,603	3,844	3,857	4,181	4,333	4,592	34% or 1.1%/yr
Household	1,222	1,291	1,391	1,397	1,514	1,570	1,664	36% or 1.2%/yr
Household Size	2.80	2.79	2.76	2.71	2.67	2.64	2.60	-7.0% or -0.2%/yr
Wastewater Flow (GPD)[1]	317,720	335,660	361,660	394,300	423,550	437,550	461,050	45% or 1.5% yr
Point Source Loading (Nitrogen) lbs/yr	---	---	---	4,803	5,157	5,328	5,614	---
Point Source Loading (Phosphorus) lbs/yr	---	---	---	360	387	400	421	---

Source: Department of State Planning.
[1] Average day flow at 250 GPD/EDU for future flows beyond 2015.

The Town of Indian Head's wastewater collection system, originally built in the 1930's, consists of gravity sewer lines ranging in size from 6-inches to 12-inches, force mains from 4-inches to 6-inches, and five pumping stations. There are no septic systems located in the Town of Indian Head with the exception of two houses on Mattingly Avenue, which plan to connect to public sewer in the near future. There are also approximately 12 grinder pumps with 2-inch low pressure sewer lines located on Parker Harley Drive and Strauss Avenue in the Teates Subdivision and Traverse Road in Woodland Village. The Knotts Subdivision, located at the east end of Town and north of Route 210, consists of small diameter gravity sewer 4-inches to 6-inches in size at minimum slope and septic tanks at each house to remove solids. This project was constructed in the early 1990's as an innovative and alternative system funded by EPA and MDE.

The central pump stations are located in Potomac Woods, Strauss Avenue in the Teates subdivision, Mattawoman Woods, Knotts Subdivision and the Riverwatch Subdivision. The Potomac Woods and Mattawoman Woods pump stations are small suction lift stations with 4-inch force mains designed for 100 gpm. The Teates and Riverwatch pump stations are duplex submersible stations with 4-inch force mains designed for 100 gpm. The Knotts Subdivision is a 200-gpm duplex submersible station with a soil odor control system and 6-inch force main. The Knotts Subdivision and Riverwatch pump stations are equipped with emergency generators.

The Town has developed plans and received permits to construct a sixth pump station on Davis Drive as part of a larger plan to replace all water and sewer lines in the subdivision. The pump station, when completed, will be a suction lift, 100 gpm pump station with an emergency generator and 4-inch force main.

The existing collection system conveys significant wet weather flows. A 6:1 ratio of peak hour flow to average flow has been recorded at the treatment plant. Maximum month flows of 0.62 mgd has been recorded in December 2003 and a peak hour flow of 2.9 mgd in January 2003. In order to reduce the possibility of upsets and sewer overflows, a flow equalization basin was added to the treatment plant in the 2008 ENR upgrade.

Based on daily flows recorded from the Town and MDE, the average of flows for the past three years is 394,300 gpd. The plant is designed for 500,000 gpd. As discussed in the water analysis, the quantity of flows estimated from development approved but not yet constructed is **500** gpd.

With this in mind, the remaining capacity of the existing plant for future development is as follows:

Remaining Sewer Capacity
Table MG-13

Existing Design Capacity	500,000 gpd
Potential development flows	500 gpd
Existing 3-year average flow	394,300 gpd
Net remaining capacity for future development	**105,200 gpd**

The remaining capacity of 105,200 gpd equates to 420 equivalent dwelling units using 250 GPD/EDU from the MDE Design Guidelines. Based on growth projections of 267 EDUs, sewer capacity is adequate for the planning period. Inflow and infiltration to the sewer system should, however, be a high priority for the Town to decrease the burden on the plant during storm events and prevent potential backup in the system.

NON-POINT WATER SOURCE QUALITY

Non-point source pollution occurs when rainfall, snowmelt, or irrigation runs off land or through the ground and gathers pollutants, which are carried with the runoff and deposited into surface water or leaked into groundwater. The amount of stormwater runoff in developed areas is a function of the amount of

impervious surface associated with the built environment, i.e., roads, parking areas, roofs, etc. The greater the percentage of impervious surface, the faster water flows over land. In wooded or heavily vegetated areas, the water is intercepted by undergrowth, plants, and trees as it flows over land and it reaches streams more gradually, a process that underscores the importance of grass and forest riparian buffers, particularly on agricultural land.

These natural impediments reduce flood-related stream discharges and enable lower, sustained flows, which in turn reduce the potential for erosion caused by storm events. The slower pace of runoff from undeveloped land also allows time for vegetation to uptake the nutrients in the runoff, which results in lower nutrient loads being discharged into waterways.

The Town of Indian Head is located between the Potomac River on the north, Mattawoman Creek on the south, and the NSASP and NSFIH on the west. The Town is situated in the Mattawoman Creek Watershed (02140111 – eight-digit code) and the Potomac River Watershed (02140102 – eight-digit code).

Most of the land within the Town of Indian Head has been developed. Within the Town, there are no agricultural, industrial, or mining uses. Two (2) septic systems for single family detached homes still exist near Mattawoman Creek, both of which will require grinder pumps to convey their wastewater to the Town's gravity system in the future.

The estimated loading rates for Town land uses are illustrated below in Table MG-14.

Non-Point Source Loading Rates
Table MG-14

Drainage Basin	Land Use	Nitrogen Loading Rate (lbs/acre)	Phosphorus Loading Rate (lbs/acre)
Mattawoman	[1]Developed	3.6	0.46
Potomac		6.6	0.62
Mattawoman	Forest	1.2	0.05
Potomac		1.7	0.06
Mattawoman	Open Space, Parkland	2.3	0.51
Potomac		3.5	0.59
Mattawoman	[2]Pervious Urban	3.4	0.26
Potomac		6.2	0.35
Mattawoman	[3]Impervious Urban	4.3	1.11
Potomac		7.8	1.40

All loading rates based on MDE loading rate estimates
[1] Developed land includes residential, commercial, institutional, and industrial uses
[2] Undeveloped/pervious land not in other categories
[3] Undeveloped/impervious land not in other categories

Table MG-15 indicates the Total Maximum Daily Loads for the Mattawoman and Potomac Watersheds.

Nutrient Loads and Caps for
Mattawoman and Potomac Watersheds
Table MG-15

Nutrient Loads and Caps			
Source	Basin	Basin Nitrogen Cap (lbs/yr)	Basin Phosphorus Cap (lbs/yr)
Point Source	Mattawoman	44,833	8,741
	Potomac	200,139	22,450
Non-Point Source	Mattawoman	133,007	6,889
	Potomac	933,683	88,603
Total Source	Mattawoman	177,840	15,630
	Potomac	1,133,822	111,053

Source: MDE Chesapeake Bay TMDL's

Note: For the Mattawoman Creek, a TMDL for PCB.s is pending development. For the Potomac River, a TMDL for PCB's is written and approved by EPA.

The table MG-16 summarizes current non-point source nutrient loadings by drainage area for the Town of Indian Head based on loading rates and land cover.

Current Non-Point Source Load for
Town of Indian Head
Table MG-16

Cover/Source	Drainage Basin	Area (Acres)	Nitrogen Loading (lbs/ac/yr)	Phosphorus Loading (lbs/ac/yr)	Nitrogen Loading (lbs/yr)	Phosphorus Loading (lbs/yr)
Development	Mattawoman	418	3.6	0.46	1505	192
	Potomac	94	6.6	0.62	620	58
Forest	Mattawoman	30	1.2	0.05	36	2
	Potomac	50	1.7	0.06	85	3
Open Space	Mattawoman	10	2.3	0.51	23	5
	Potomac	82	3.5	0.59	287	48
Pervious	Mattawoman	50	3.4	0.26	170	13
	Potomac	54	6.2	0.35	335	19
Impervious	Mattawoman	3	4.3	1.11	13	3
	Potomac	2	7.8	1.40	16	3
[1]Septic System	Mattawoman	---	---	---	21	0
	Potomac	---	---	---	0	0
				Total Mattawoman Basin	1768	215
				Total Potomac Basin	1343	131

[1]Nitrogen load for septic system is 9.5 lbs N/person/year times the average number of persons per household times 0.4 (transport factor). With only 2 homes at 2.76 persons/home the total N load is 21 lbs/yr.

Current contributions to nonpoint source nutrient loadings constitute less than 2% of the Total Maximum Daily Load caps for each watershed.

ALTERNATIVE LAND USE OPTIONS

Three (3) growth scenarios were considered for evaluation. As discussed in the Municipal Growth Element, the amount of growth proposed through 2030 is 725 people or 267 households. Table MG-7 clearly implies that existing land within the current Town boundary is adequate to achieve this level of growth. Based on Table MG-7, we can forecast that in order to build an additional 267 homes, approximately 37 acres would be developed. With 109 total development acres available, not to mention re-development potential, only a third of the available land area will be needed by year 2030. In order to evaluate the impact of future growth on non-point source loading, the following estimates of loading are provided for the three (3) growth scenarios.

GROWTH SCENARIO 1

This scenario involves all growth within the existing Town boundaries based on current zoning.

Non-Point Source Loads for Growth Scenario 1
Table MG-17

Cover/Source	Drainage Basin	Area (Acres)	Nitrogen Loading (lbs/ac/yr)	Phosphorus Loading (lbs/ac/yr)	Nitrogen Loading (lbs/yr)	Phosphorus Loading (lbs/yr)
Development	Mattawoman	435	3.6	0.46	1566	200
	Potomac	114	6.6	0.62	752	71
Forest	Mattawoman	30	1.2	0.05	36	2
	Potomac	35	1.7	0.06	60	2
Open Space	Mattawoman	10	2.3	0.51	23	5
	Potomac	82	3.5	0.59	287	48
Pervious	Mattawoman	50	3.4	0.26	170	13
	Potomac	54	6.2	0.35	335	19
Impervious	Mattawoman	3	4.3	1.11	13	3
	Potomac	2	7.8	1.40	16	3
				Total Mattawoman Basin	1808	223
				Total Potomac Basin	1450	143

Note: Septic tanks are assumed to be taken off line and connected to existing public sewer.

GROWTH SCENARIO 2

This scenario involves all growth within the existing Town boundaries based on proposed zoning changes contained in the Land Use element. The zoning changes in the Land Use element reflect changing commercial to mixed use growth along Rt. 210 and changing moderate residential to mixed use in the core downtown area.

Since the amount of land area anticipated for development would mimic Scenario 1, the non-point source loads are the same as Scenario 1.

GROWTH SCENARIO 3

This scenario involves all growth occurring within the Town boundaries along with annexation as proposed in the Municipal Growth Element. Since the areas to be annexed are, for the most part, already developed and not needed for future Town growth through year 2030, the resulting non-point source loads are provided in table MG-18.

Non-Point Source Loading with Proposed Annexations
Table MG-18

Cover/Source	Drainage Basin	Area (Acres)	Nitrogen Loading (lbs/ac/yr)	Phosphorus Loading (lbs/ac/yr)	Nitrogen Loading (lbs/yr)	Phosphorus Loading (lbs/yr)
Development	Mattawoman	1417	3.6	0.46	5101	652
	Potomac	1581	6.6	0.62	10435	980
Forest	Mattawoman	1129	1.2	0.05	1355	56
	Potomac	335	1.7	0.06	570	20
Open Space	Mattawoman	10	2.3	0.51	23	5
	Potomac	82	3.5	0.59	287	48
Pervious	Mattawoman	50	3.4	0.26	170	13
	Potomac	54	6.2	0.35	335	19
Impervious	Mattawoman	3	4.3	1.11	13	3
	Potomac	2	7.8	1.40	16	3
Total Mattawoman Basin					6662	729
Total Potomac Basin					11643	1070

For the purposes of this Comprehensive Plan, Scenario 2 was chosen because it best fits with the Town's vision for future growth and development. Based on the non-point source loading for growth Scenario 2, the following summary of current and project total non-point source and point source loadings are provided in Table MG-19.

Current and Projected Non-Point Source and Point Source Loadings
Table MG-19

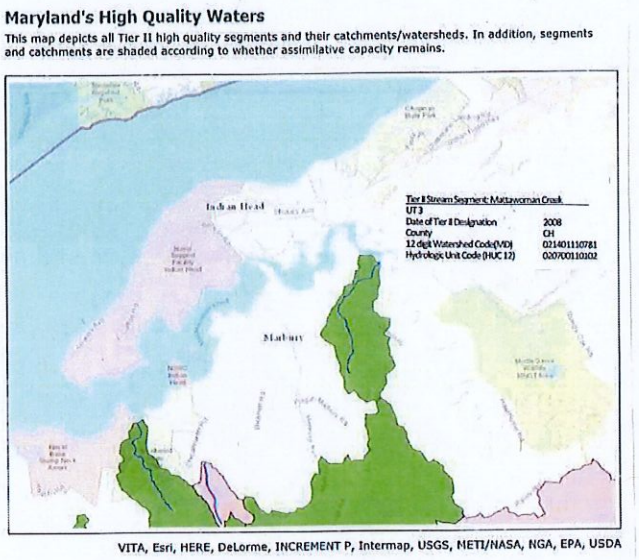
Year	Drainage Basin	Non-Point Source N (lbs/yr)	Non-Point Source P (1bs/yr)	Point Source N (lbs/yr)	Point Source P (lbs/yr)	Total N	Total P	Total N w/annex areas	Total P w/annex area
Current	Mattawoman	1768	215	4803	360	6571	575	11425	1081
	Potomac	1343	131	0	0	1343	131	11536	1058
2020	Mattawoman	1781	218	5157	387	6938	605	11792	1111
	Potomac	1378	135	0	0	1378	135	11571	1062
2025	Mattawoman	1795	220	5328	400	7123	620	11977	1126
	Potomac	1413	139	0	0	1413	139	11606	1066
2030	Mattawoman	1808	223	5614	421	7422	644	12276	1150
	Potomac	1450	143	0	0	1450	143	11653	1070

As can be seen from the Tables, the Town does not exceed the point source allocation for nitrogen or phosphorus and will not do so during the planning period. The current total annual nutrient loading contribution from the Town to Mattawoman Creek is approximately 3.7% of the annual TMDL of nitrogen and phosphorus. At the end of the planning period, assuming the TMDL limits do not change, the total annual nutrient contribution from the Town to Mattawoman Creek will be approximately 4.2% of the annual TMDL of nitrogen and phosphorus, and 6.9% of the annual TMDL of nitrogen and 7.4% of the annual TMDL for phosphorus with all of the potential annexation areas included.

Refinements of the non-point source analyses should continue beyond the date of adoption of this Comprehensive Plan. Through the use of more accurate mapping provided by State and County agencies, the land cover estimates and nutrient loading calculations can become more precise. Moreover, as the extent and characteristics of new development become better known, future loads can be more accurately determined.

Maryland's High-Quality Waters (Tier II)

Mapped Tier II waters do not exist within the Town's boundaries of Indian Head. However, Tier II waters do exist to the south to Mattawoman Creek as shown on the map below reproduced from Maryland GIS Database.



The implications for water quality and land use planning are clarified below and taken directly from State regulations administered by the Maryland Department of Environment. The Clean Water Act requires three components to water quality standards that set goals for and protect each States' waters. The three components are: (1) designated uses that set goals for each water body (e.g., recreational use), (2) criteria that set the minimum conditions to support the use (e.g., bacterial concentrations below certain concentrations), and (3) an antidegradation policy that maintains high quality waters so they are not allowed to degrade to meet only the minimum standards. The designated uses and criteria set the minimum standards for Tier I.

Maryland's antidegradation policy has been promulgated in three regulations: COMAR 26.08.02.04 sets out the policy itself, COMAR 26.08.02.04-1, which is discussed here, provides the implementation of Tier II (high quality waters) of the antidegradation policy, and COMAR 26.08.02.04-2 describes Tier III (Outstanding National Resource Waters or ONRW), the highest quality waters. No Tier III waters have been designated at this time.

Tier II antidegradation implementation has the greatest immediate effect on local government planning functions so MDE has prepared the following discussion to provide technical assistance to local governments working to complete the Water Resources Element of their comprehensive plans as required by HB 1141.

1. 26.08.02.04-1(B)

   General: An applicant for proposed amendments to county plans or discharge permits for discharge to Tier II waters that will result in a new, or increased, permitted annual discharge of pollutants and a potential impact to water quality, shall evaluate alternatives to eliminate or reduce discharges or

impacts. If impacts are unavoidable, an applicant shall prepare and document a social and economic justification. The Department shall determine, through a public process, whether these discharges can be justified.

2. 26.08.02.04-1(F)(1)-(3)

(1) Permits. Before submitting an application for a new discharge permit or major modification of an existing discharge permit (for example, expansion), the discharger or applicant shall determine whether the receiving water body is Tier II or, a Tier II determination is pending, by consulting the list of Tier II waters.

(2) Water and Sewer Plans (County Plans). As part of its continuing planning process, the Department shall review proposed amendments to county plans for any new or major modifications to discharges to Tier II bodies of water. If a proposed amendment to a County Plan results in a new discharge or a major modification of an existing discharge to a Tier II water body, the applicant shall perform a Tier II antidegradation review.

(3) Exemptions. The requirement to perform a Tier II antidegradation review does not apply to individual discharges of treated sanitary wastewater of less than 5,000 gallons per day, if all of the existing and current uses continue to be met.

3. 26.08.02.04-1(G)

(1) If a Tier II antidegradation review is required, the applicant shall provide an analysis of reasonable alternatives that do not require direct discharge to a Tier II water body (no-discharge alternative). The analysis shall include cost data and estimates to determine the cost effectiveness of the alternatives.

(2) If a cost-effective alternative to direct discharge is reasonable, the alternative is required as a condition of the discharge permit or amendment to the county plan.

(3) If the Department determines that the alternatives that do not require direct discharge to a Tier II water body are not cost effective, the applicant shall:

(a) Provide the Department with plans to configure or structure the discharge to minimize the use of the assimilative capacity of the water body, which is the difference between the water quality at the time the water body was designated as Tier II (baseline) and the water quality criterion; and

(b)If an impact cannot be avoided, or not assimilative capacity remains as described in §G (3)(a) of this regulation, provide the Department with a social and economic justification for permitting limited degradation of the water quality.

(4) An applicant shall update an antidegradation review when applying for a new permit or major modification to an existing permit.

STORMWATER MANAGEMENT ASSESSMENT

Stormwater management requirements, following the State Model, are contained in the Town's Stormwater Management Ordinance, which includes by-reference compliance with the Maryland Department of the Environment Site Design. Site Design to the maximum extent practical is now required to mimic existing hydrology and reduce nutrient loadings to the receiving waters. The Town will continue to enforce these site design requirements with all new development. The Town will also continue to investigate opportunities to reduce nutrient loadings by implementing stormwater management facilities in developments constructed prior to stormwater management regulations being adopted as well as retrofit existing stormwater management facilities to reduce nutrient loadings.

FIRE AND RESCUE

Indian Head's fire and emergency rescue services are provided by the Indian Head Volunteer Fire Department and Rescue Squad, Station 9, located at 4095 Indian Head Highway in western Indian Head. The service area is the Town limits from the NSASP and NSFIH to Poplar Avenue and between the Potomac River and Mattawoman Creek.

The Fire Department provides their services utilizing an ambulance, two brush trucks, two pumpers/engines, 100-foot tower truck, a spill unit vehicle, a utility vehicle, and a command unit. The fire and rescue department's Insurance Service Organization (ISO) rating is 2. Based on the 2030 projected population of 5,860 and using the accepted standard of the Insurance Services Office for the number of engines at (.85 + (.12 x population in thousands)), the existing equipment is adequate for the 20-year planning period.

Ninety percent of the funding for the fire department is received from County taxes with the remaining 10% from fundraisers and donations. The community-based fire department also provides fire safety tips through information published in the local newsletter "Smoke Signals." The active responders participate in company drills, state training, and specialized training.

POLICE AND EMERGENCY SERVICES

Law enforcement for the Town is provided by the Sheriff's Office, District 2 Station, and Maryland State Police. The County Sheriff's Department is under contract to provide protection for the Town.

A national standard used by the International Association of Chiefs of Police suggests 2.6 police officers for every 1,000 persons of population. Based on that standard, the existing staffing is adequate through year 2030.

It would be beneficial to have new development projects reviewed by the police since proper placement of lighting and the location of landscaping, pedestrian walkways, and bicycle paths can provide a greater degree of safety to the residents.

PUBLIC SCHOOLS

Students from Indian Head attend elementary school at Indian Head Elementary, middle school at General Smallwood Middle and high school at Henry E. Lackey. Indian Head Elementary is located within the Town along Route 210 and provides education for pre-kindergarten through grade 5. General Smallwood Middle is located along Route 210, just east of Town. Henry E. Lackey High School is located outside the Town about 4 miles south on Route 224.

School Enrollment
2015/2016
Table MG-20

Schools	State Rated Capacity	2015/2016 Enrollment	Utilization
Indian Head Elementary	768	490	64%
General Smallwood Middle	940	567	60%
Lackey High	1,600	1,066	67%

Source: Charles County School Board

As shown in table MG-20, enrollment at all schools is currently under capacity. It is worth noting that enrollment at both the elementary and middle schools have been consistently declining since 2002, and the high school enrollment has been steadily decreasing since 2005.

Pupil yields are forecasted using the proposed housing units projected to be built in the planning period. Although public schools are controlled by the State and County, the Comprehensive Plan needs to examine the impact on schools based on the projected growth.

Based upon the recent census data in Charles County, there are approximately 0.545 children in Charles County Public Schools per household. (22,720 students in 41,668 households in 2000). Based on attendance ratios, we can estimate the number of new school children generated by each new household will be as follows:

Elementary School – 0.22 students/household

Middle School – 0.13 students/household

High School – 0.19 students/ household

Based on the projected households over the planning period, the projected increase in school enrollments will be as shown below in table MG-21.

Projected School Impacts
Table MG-21

School	State Rated Capacity	2015/2016 Enrollment	2020 Enrollment	2030 Enrollment
Indian Head Elementary	768	490	534	612
Middle School	940	567	593	639
High School	1,600	1,066	1,104	1,171

From the projections in Table MG-21, the capacity of the schools will suffice for the planning period. This of course assumes that enrollment of students living outside the Town will remain constant and not decrease. The elementary school is currently planning an expansion in the near future and has already gained the Town's Planning Commission approval.

The Town, through its adequate public facilities provisions of the Zoning Ordinance, will have to closely monitor residential population growth and coordinate with the Charles County Public Schools to maintain adequate school capacity over the next decade and beyond. The Town should collaborate closely with the County Local Educational Agency to ensure that up-to-date information is being disseminated to address shared opportunities to evaluate the impact of growth on public school facilities.

COUNTY LIBRARY

The Charles County Public Library consists of four branches: La Plata Branch, P.D. Brown Memorial Library in Smallwood Village, Waldorf, Waldorf West Branch located on Smallwood Drive, and the new Potomac Branch in Bryans Road. The four branches have a combined floor area of 67,000 SF. The combined collection equates to about 1.3 books per capita. The closest branch to Indian Head is the Bryans Road Branch located approximately 3 miles from Indian Head. The American Library Association recommends 1,000 square feet of library space per 10,000 population. The Bryans Road branch exceeds this standard now and through 2030.

PARKS AND RECREATION

The Town of Indian Head is surrounded by recreational and tourism opportunities in both the Mattawoman Creek and the Potomac River areas. Access for the Town and its citizens to these areas is currently limited.

The Town should place high priority on creating ways to make water access more available. This would then allow the Town to promote itself as a destination place with water access.

In addition to water access opportunities, the Town will continue to support facility needs for the existing parks. Open space within the Town serves several functions. It provides areas for active and passive recreations and protects the environment by reserving land for open space and setting aside sensitive areas near the major tributaries. Currently there are five (5) principal park areas including one public boat launching site in Mattingly Park that is owned by the Town.

Mattingly Park is a 3-acre waterfront park at the end of Mattingly Avenue on Mattawoman Creek. The park has a fishing pier, two floating boat docks, a kayak/canoe launching pier, a gazebo, a pavilion, a picnic area, a playground, and restrooms. It is envisioned that this area could serve as the main trail terminal for a future nature trail system that will follow the Mattawoman Creek and join up with the Indian Head trail.

The Village Green is a 9.5-acre park located centrally in the heart of Town that either contains or is surrounded by many community related facilities, which allows the park to serve as the main Town Square. It is bordered on the north and west by the Department of the Navy (DON) property, on the east by the Indian Head Elementary School, and on the south by Maryland Route 210 and the U.S. Post Office.

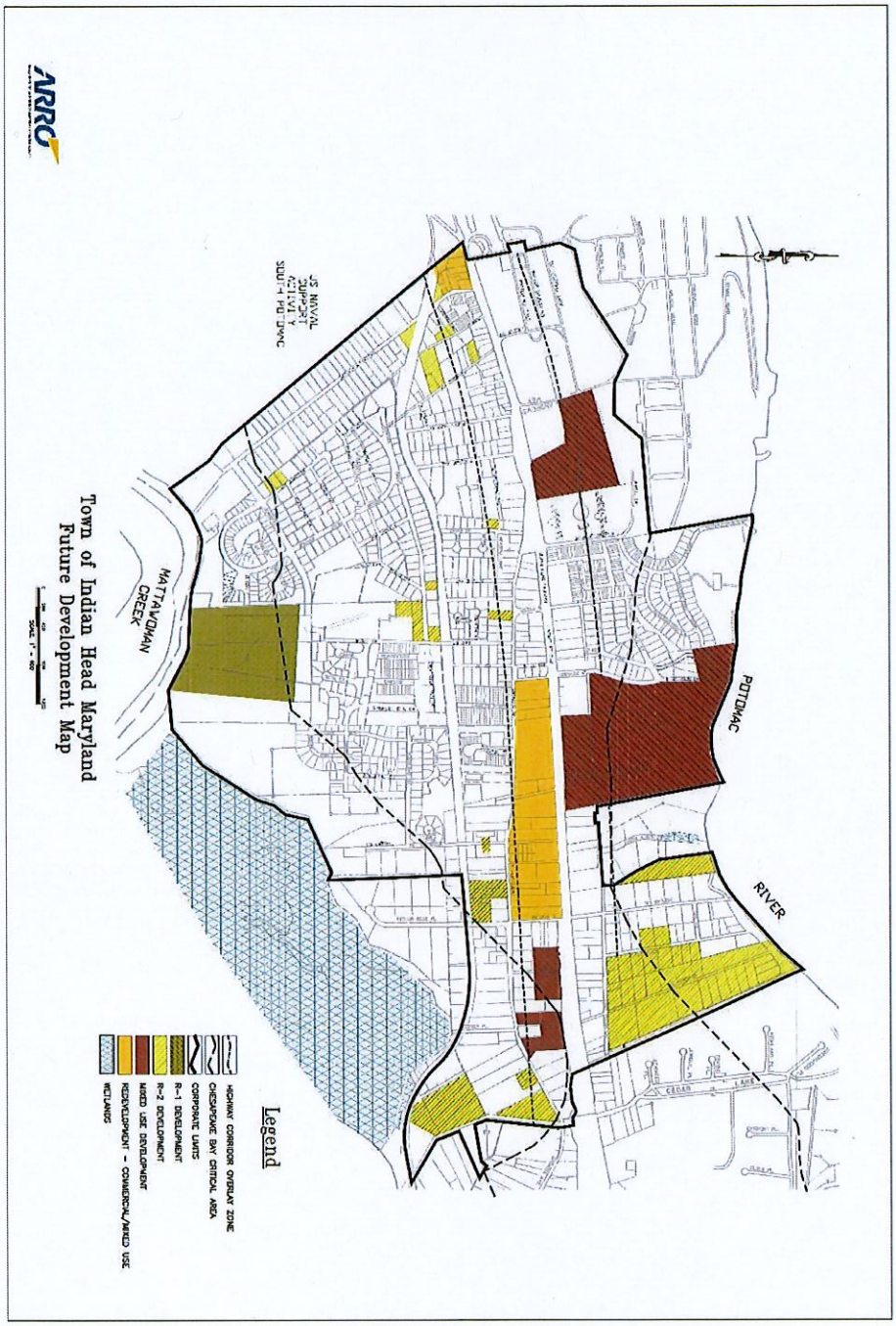
Within the park is a fountain, a War Memorial, an Indian Head Fire Department Memorial, the Village Green Pavilion, which is used for cultural events, the Community/Senior Center, which serves both seniors and community groups, a gazebo, and a Trailhead Plaza.

Potomac Park is a 10-acre tract directly on the Potomac River adjacent to the Riverwatch Subdivision. It is the site for the initial segment of the Boardwalk along the Potomac River.

Meekins Park is a small neighborhood park of approximately one-acre in the Warrington Hills neighborhood.

Woodland Village Park is a small 5-acre neighborhood park in the Woodland Village Subdivision.

Recent improvements to Mattingly Park include fishing piers, boat docks and kayak docks, and a children's play area. The public restrooms at the pavilion in Mattingly Park have been modernized, and the gravel parking area was paved in the summer of 2009. The park in Woodland Village consists of tot lots, basketball courts, and opens space for passive recreation. The National Recreation and Park Association recommend 6.25 to 10.5 acres of park per 1,000 persons. Indian Head currently has about 10 acres per 1,000 persons. As new development occurs, however, the Town's Zoning Ordinance requires dedication of new parkland at a rate of 0.015 acres per dwelling. Using the projected population increase over the planning period, new development would add approximately 10.5 acres, maintaining the recommended ratio. The Town is currently constructing 1,200 feet of boardwalk and 1,200 feet of nature walk along the Potomac River on the north side of the Town for added recreational opportunities.


Town of Indian Head Maryland
Future Development Map
Legend
HIGHWAY CORRIDOR OVERLAY ZONE
CHESAPEAKE BAY CRITICAL AREA
CORPORATE LIMITS
R-1 DEVELOPMENT
R-2 DEVELOPMENT
MIXED USE DEVELOPMENT
REDEVELOPMENT - COMMERCIAL/MIXED USE
WETLANDS
MATTAWOMAN CREEK
POTOMAC
RIVER
US NAVAL SUPPORT FACILITY INDIAN HEAD

REFUSE COLLECTION

The Town currently uses two (2) town owned trash hauling trucks to provide refuse collection within the Town. Curbside recycling is also provided by contractor for such items as glass jars and bottles, newspapers, plastic bottles, and metal cans. Yard waste is also collected year-round, weather permitting. The County provides 10 drop off centers around the County that accept recyclable materials. The County has adopted a goal of 35% recycling in response to the 1989 Maryland Recycling Act. The existing number of trash hauling trucks will be sufficient over the planning period although the trucks themselves will need to be replaced or refurbished.

FINANCING MECHANISMS TO SUPPORT NECESSARY INFRASTRUCTURE

While the Town will use every practical means to continue to upgrade public services and facilities consistent with the intensity of development, innovative partnerships with developers and County and State government agencies will be the only way our infrastructure will keep pace with even measured development. In that regard, it is important for the Town to certify potential annexations to the Maryland Department of Planning (MDP) as Priority Funding Areas (PFA) and include the necessary documentation and justifications to ensure that PFA maps prepared by MDP for State funding agencies are accurate, up to date, and reflect local plans and priorities.

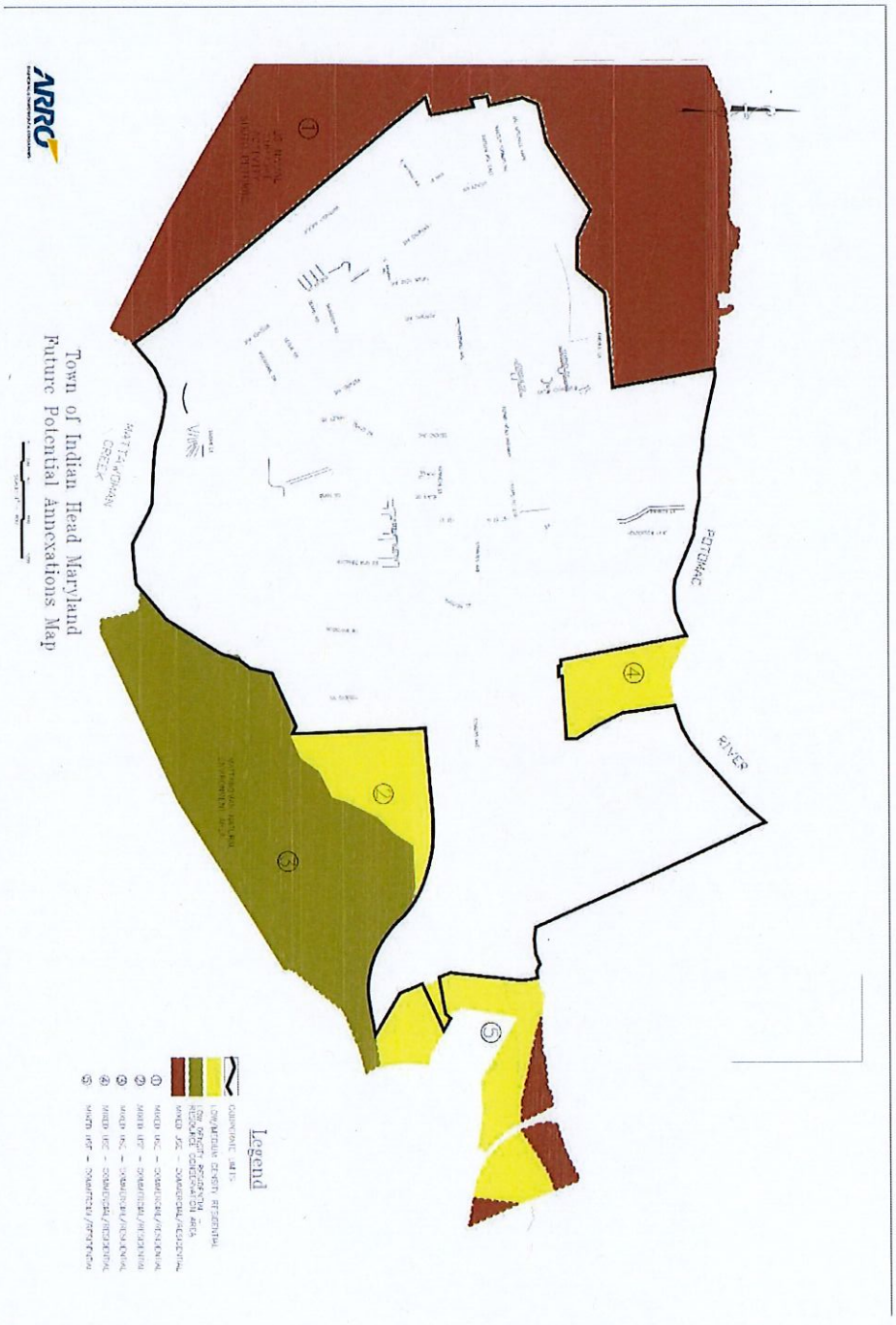
As discussed previously in this chapter, the existing wastewater treatment facility is deemed adequate through the planning period. A new water source (well) will be required in 2024 assuming growth remains at the anticipated rate. In addition to a new well, improvements to existing sewer pump stations and inflow and infiltration reductions in the Town's sewer system are projects that will require attention and potential implementation during the planning period. The Town will continue to explore grant and loan opportunities from the Community Development Block Grant Program, USDA, and MDE to assist in financing needed upgrades and improvements. The Town has now achieved the status of a "sustainable community", which may open the door to funding.

ANNEXATION POLICIES/COMPETITION OF TRANSITIONAL LAND USES

The annexation process is provided for in Article 23A of the Annotated Code of Maryland. Areas that are annexed must be contiguous to the municipal boundaries of Indian Head and cannot create an "enclave" of an unincorporated area. A cost/benefit analysis should be conducted before each petition for annexation is processed to determine the full extent of the impact the annexation will have on the Town. The zoning of the annexed land must be compatible with and logical to the surrounding area.

The potential annexable areas that are delineated on the Future Potential Annexation Map are logical and will create a manageable impact upon the Town's infrastructure. The future zoning of these areas is anticipated to be consistent with the surrounding areas and the County's Comprehensive Plan Land Use

Designations. Redevelopment and adaptive use of existing structures in Town and development of vacant lots are and will continue to be a higher priority for growth rather than annexation.



COMMUNITY FACILITIES

COMMUNITY FACILITIES GOALS

1. ***TO PROVIDE, MAINTAIN, AND UPGRADE COMMUNITY FACILITIES.***
2. ***TO PRESERVE OPEN SPACE, PROVIDE RECREATIONAL AND CULTURAL PROGRAM OPPORTUNITIES FOR ALL TOWN RESIDENTS, AND TO ENCOURAGE TOURISTS TO VISIT TOWN.***
3. ***ENSURE THAT ADEQUATE FIRE AND RESCUE SERVICES ARE AVAILABLE TO THE RESIDENTS OF INDIAN HEAD.***
4. ***TO PROVIDE, MAINTAIN, AND UPGRADE THE WATER AND SEWER SERVICES OF INDIAN HEAD TO MEET SYSTEMS DEMANDS AND WATER QUALITY REGULATIONS.***

POLICIES AND IMPLEMENTATION STRATEGIES

Policy CF.1: Develop new and improve existing park and recreational facilities to address deficiencies identified per 1,000 residents.

Implementation Strategies

1. Develop a plan and schedule for implementation of park and recreational facility improvements through the Capital Improvements Program. The standard for park and recreational facilities will be 15 acres per 1,000 residents.
2. Require new residential developments to contribute to the acquisition and development of off-site recreational facilities whose need is generated by the development. Impact fees are in place to assist with implementation of this element.
3. Require through the site plan or subdivision process that new development contribute to facilities as called for in this Comprehensive Plan and reserve land for open space and recreation or provide funds in lieu of such space.
4. Require all new development to include areas designated for a trail system that be incorporated into a Town-wide trail program.

Policy CF.2: Provide recreational, health, and social service programs for the Town's elderly and handicapped and improve and increase recreational programs for the Town's children and teenagers.

Implementation Strategies

1. Work closely with the County government, Board of Education, and public and private social service organizations to provide these services.
2. Develop a plan to better utilize existing facilities like schools and the Community Center to provide space for community programs.

Policy CF.3: Provide increased and improved access to the Potomac River and to Mattawoman Creek.

Implementation Strategies

1. Plan and develop a comprehensive trail system throughout Town (hiker and/or cycling). The trail system would include connections from the Village Green to Mattawoman Creek, a trail system along Mattawoman Creek, and connections to the Potomac River. It is intended that the various trails be interconnected throughout Town by a series of sidewalks and cycling paths.
2. New developments on the Potomac River should be encouraged to provide public access to the shoreline for extensions of the Boardwalk.
3. New developments along Mattawoman Creek shall be required to provide public easements and help implement the proposed trail system as shown on the map of public improvements for the Town.
4. Coordinate with the Maryland Department of Natural Resources to assist with the development of a trail system within their land and interpretive exhibits relating to the flora and fauna of the area. Other programs could include interpretation of the bay program and wildlands program that are being considered for the area.

Policy CF.4: Provide improvements and additions to the existing recreation complex.

Implementation Strategies

1. Explore the feasibility of developing a museum within the Town. The focus could include the Native American theme after which the Town was named and/or the activities of the Department of the Navy (DON).

Policy CF.5: Ensure that there will be an adequate supply and storage of water to meet drinking water requirements and firefighting capabilities.

Implementation Strategies

1. Sink a new deep well into the Patuxent Aquifer to provide more water capacity.
2. Perform regular wellhead sampling, monitoring, and testing to ensure a potable water supply.
3. Periodically evaluate the need for additional wells or replacement wells and develop a program of capital improvements as necessary.
4. Maintain storage facilities to provide the capacity for daily uses and fire demands.
5. Explore the feasibility of the future use of Potomac River water as an alternative source for both daily demand and fire suppression.
6. Using hydraulic models and experiences, periodically evaluate fire and demand flows to ensure adequate pipe carrying capacities and pressures throughout the distribution network.

7. Require the use of water conservation devices within all new construction in the Town. The Town will continue to seek new federal and state grants for developers and individual home/business owners that support this effort.

8. Update the County Water and Sewer Plan annually with infrastructure improvements, water and sewerage use information, and funding information on all Capital Improvement Programs (CIP) projects involving water, sewer, and stormwater.

9. Implement a wellhead protection plan to protect the raw water supply.

Policy CF.6: Eliminate inflow problems in order to better utilize and possibly increase the existing capacity of the sewer system.

Implementation Strategies

1. Using existing and new smoke testing and televising inspection results, develop a phased program to address and eliminate problem areas where infiltration and inflow exist using replacement or lining of conduit.

2. Identify all interconnections of the stormwater and wastewater systems and develop a phased plan to eliminate them (examples include floor and sub-level drains that are connected to the sewer collection system).

Policy CF.7: Upgrade sewer collection facilities to ensure adequate flow carrying capacities and to prevent spills or overflows.

Implementation Strategies

1. Periodically evaluate the need for sewer collection replacement and upgrades. Maintain adequate flow carrying capacities and prevent surging of manholes.

2. Where needed, relocate existing utilities so that Town staff can access all components to perform operation and maintenance. Ensure all necessary components are in accessible rights-of-way and easements.

3. Investigate all open space land opportunities for the use of wastewater irrigation.

4. Coordinate all policies and recommendations of other elements in an effort to minimize nutrient impacts to the Mattawoman and Potomac River watersheds.

Policy CF.8: Ensure that the Town has adequate and appropriate facilities and equipment to conduct its operations efficiently and effectively.

Implementation Strategies

1. Conduct a rigorous preventative maintenance program on Town equipment and facilities. Provide depreciation scheduled funding for replacement of equipment and facilities.

2. Periodically evaluate the facility and equipment needs of the Town's operating units. Develop and implement a program for providing appropriate space and additional equipment to meet the determined needs.

3. Construct municipal parking lots in areas where additional space is needed to support community functions and/or other needs.

4. Encourage the building of public/private funded facilities to support government activities, particularly those that can help support the mission of the NSASP and NSFIH.

Policy CF.9: Actively participate in the joint DON/Community Partnership.

Implementation Strategies

1. Pursue the option of joint use of Town, NSASP, and NSFIH community facilities and joint projects to improve such facilities.

Policy CF.10: Maintain and periodically evaluate a system of impact fees that will be charged to developers to compensate for facilities necessitated by new development or extensive redevelopment and to expand existing facilities.

Implementation Strategies

1. Establish a system of impact fees that are applied to expanding the Town's capacity to provide additional services required to support additional needs of new and existing residents. Examples are expansion of the Potomac Boardwalk, Mattawoman Trail, sidewalks and pedestrian trails.

Policy CF.11: Continue to support the Indian Head Fire Department and Rescue Service and maintain the department within Town limits.

INTRODUCTION

One of the most important reasons that an area incorporates and creates a town is a desire for better and more responsive public services. The Town of Indian Head strives to provide a wide range of public services in the most cost-efficient manner possible.

Community-owned and operated facilities are the pivotal link in the creation of a community or town. Infrastructure like water and sewer, parks, community centers, libraries, and cultural events make a town a special place for the people who live, work, and visit the area.

The Town has made significant efforts in recent years to improve the level of service provided to residents and the community facilities available, which improve the quality of life. The construction of the Village Green Pavilion, improvements to the Senior Center, Town Hall renovations, waterfront park improvements, wastewater treatment plant upgrades, and town beautification projects have contributed to the improved quality of life.

Community services enrich the standard of living for citizens and provide convenience that people need to conduct a rich lifestyle for themselves and their families. In addition to providing safety, convenience, education, entertainment, and health benefits, these services can help to shape the character of a community. This chapter will discuss the following public services and provide goals, policies, and implementation strategies for those services as well as providing the direction for good community design and strategies for sustainability and regulations that are conducive for good design and are developer friendly.

- Fire, Rescue, and Police Emergency Services
- Public Schools
- Senior Services
- County Library
- Parks and Recreation
- Solid Waste Management
- Community Design

> Public Safety should be an effective coordination of efforts and services between state and local government and a means to protect the health, safety, and welfare of that community.

FIRE AND RESCUE

Indian Head's fire and emergency rescue services are provided by the Indian Head Volunteer Fire Department and Rescue Squad, Station 9, located at 4095 Indian Head Highway in western Indian Head. The service area is the Town limits from the Naval Support Activity South Potomac (NSASP) and Naval Support Facility Indian Head (NSFIH) to Poplar Avenue and between the Potomac River and Mattawoman Creek.

The Fire Department provides their services utilizing an ambulance, two brush trucks, two pumpers/engines, 100-foot tower truck, a spill unit vehicle, a utility vehicle, and a command unit. The fire and rescue department's Insurance Service Organization (ISO) rating is 2. The active responders participate in company drills, state training, and specialized training.

Ninety percent of the funding for the fire department is received from County taxes with the remaining 10% from fundraisers and donations.

There are several areas where local planning could dramatically improve the safety of the residents. Fire company concerns develop in several areas: accessibility, water supply, building construction/fire spread, education, and funding.

- Accessibility: Electric wires prevent safe deployment of ladders for rescue and fire suppression. Radius should be wide enough to respond quickly. Alleys should be wide enough if access is impeded in the front of the site. Dangerous sidewalks add additional hazards to responders in emergencies.
- Water supply: Adequate flows and pressure are necessary and hydrant testing and maintenance needs to be done periodically.
- Have the fire department review development plans with a focus on fire and life safety issues.

- Building construction/fire spread: Older structures in town have little or no separation between structures. Early detection, fire control, and quick response are imperative to catching incidents while they are still manageable and not out of control.
- Public education of the residents in regards to safety would help save lives. Signage, website posting, and community events can go a long way to improve safety.

POLICE AND EMERGENCY SERVICES

Law enforcement for the Town is provided by the Sheriff's Office and Maryland State Police. The County Sheriff's Department is under contract to provide protection for the Town. It would be beneficial to have new development projects reviewed by the police since proper placement of lighting and the location of landscaping, pedestrian walkways, and bicycle paths can provide a greater degree of safety to the residents.

PUBLIC SCHOOLS

Students from Indian Head attend elementary school at Indian Head Elementary, middle school at General Smallwood Middle and high school at Lackey High. Indian Head Elementary is located within the Town along Route 210 and provides education for pre-kindergarten through grade 5. General Smallwood Middle is located along Route 210, just east of Town. Lackey High School is located outside the Town about 4 miles south on Route 224.

Although public schools are controlled by the State and County, and the Town does not have the responsibility of providing schools, the Comprehensive Plan needs to look at the amount of growth in the Town in the years up to 2030. It has been determined that population in 2030 is expected to grow to 5,378 if the Town continues to grow at the historic rates. There will be approximately 2,068 households, and each household is estimated to have 2.6 persons in single-family dwellings. Pupil yields are forecasted using the proposed housing units projected to be built in the planning period.

School Enrollment
2015/2016
Table CF-1

Schools	State Rated Capacity	2015/2016 Enrollment	Utilization
Indian Head Elementary	768	490	64%
General Smallwood Middle	940	567	60%
Lackey High	1,600	1,066	67%

Source: Charles County School Board

As shown in table CF-1, enrollment at all schools is currently under capacity. It is worth noting that enrollment at both the elementary and middle schools have been consistently declining since 2002 and the high school enrollment has been steadily decreasing since 2005.

Based upon the recent census data in Charles County, there are approximately 0.545 children in Charles County Public Schools per household. Based on the 2016 attendance ratios, we can estimate the number of new school children generated by each new household will be as follows:

Elementary School – 0.22 students/household

Middle School – 0.13 students/household

High School – 0.19 students/ household

Based on the projected households over the planning period, the projected increase in school enrollments will be as shown below in table CF-2.

Projected School Impacts
Table CF-2

School	State Rated Capacity	2015/2016 Enrollment	2020 Enrollment	2030 Enrollment
Indian Head Elementary	768	490	534	612
Middle School	940	567	593	639
High School	1,600	1,066	1,104	1,171

From the projections in Table CF-2, we can see that enrollment will not exceed capacity through 2030. This of course assumes that enrollment of students living outside the Town will remain constant and not decrease.

Based on U.S. census figures, the number of Town residents earning Bachelor's Degrees doubled between 2000 and 2010. It is expected this trend will continue aided in part by the availability of education and degree opportunities afforded by the College of Southern Maryland located in Charles County providing a significant educational resource. The Velocity Center at Indian Head is currently under construction. Its purpose is to promote professional development for Navy scientists and engineers, to enhance the retention of talent, to provide opportunities for entrepreneurship and experimentation, to recruit young talent, and to build goodwill among the community outside of the base gate.

The Town, through its adequate public facilities provisions of the Zoning Ordinance, will have to closely monitor residential population growth and coordinate with the Charles County Department of Planning and Growth Management and the Charles County Public Schools to maintain adequate school capacity over the next decade and beyond. The Town should collaborate closely with the County Local Educational Agency to ensure that up-to-date information is being disseminated to address shared opportunities to evaluate the impact of growth on public school facilities.

COUNTY LIBRARY

The Charles County Public Library consists of four branches: La Plata Branch, P.D. Brown Memorial Library in Smallwood Village, Waldorf, Waldorf West Branch located on Smallwood Drive, and the Potomac Branch in Bryans Road. The four branches have a combined floor area of 67,000 SF. The combined collection equates to about 1.3 books per capita. The closest branch to Indian Head is the Bryans Road Branch located approximately 3 miles from Indian Head.

PARKS AND RECREATION

The Town of Indian Head is surrounded by recreational and tourism opportunities in both the Mattawoman Creek and the Potomac River areas. Access for the Town and its citizens to these areas is currently limited. It is very important, to the Town's ability, to promote itself as a destination place to continue to pursue water access, especially to the Potomac River as one of its highest priorities.

In addition to water access opportunities, the Town will continue to support facility needs for the existing parks. Open space within the Town serves several functions. It provides areas for active and passive recreations and protects the environment by reserving land for open space and setting aside sensitive areas near the major tributaries. Currently there are five (5) principal park areas including one public boat launching site in Mattingly Park that is owned by the Town.

Mattingly Park is a 3-acre waterfront park at the end of Mattingly Avenue on Mattawoman Creek. The park has a fishing pier, two floating boat docks, a kayak/canoe launching pier, a gazebo, a pavilion, a picnic area, a playground, and restrooms. It is envisioned that this area could serve as the main trail terminal for a future nature trail system that will follow Mattawoman Creek and join up with the Indian Head trail.

The Village Green is a 9.5-acre park located centrally in the heart of Town that either contains or is surrounded by many community related facilities that allow the park to serve as the main Town Square. It is bordered on the north and west by the NSASP and NSFIH property, on the east by the Indian Head Elementary School, and on the south by Maryland Route 210 and the U.S. Post Office.

Within the park is a fountain, a War Memorial, an Indian Head Fire Department Memorial, the Village Green Pavilion, which is used for cultural events, the Community/Senior Center, which serves both seniors and community groups, a gazebo, and a trailhead plaza for bikers and pedestrians. A future public restroom is planned.

Potomac Park is a 10-acre tract directly on the Potomac River adjacent to the Riverwatch subdivision. It is the site for the initial segment of the Boardwalk along the Potomac River. The Town is currently constructing of 1,200 feet of boardwalk and 1,200 feet of nature walk along the Potomac River on the north side of the Town for added recreational opportunities with a tentative completion date of September 2021.

Meekins Park is a small neighborhood park of approximately one-acre in the Warrington Hills neighborhood.

Woodland Village Park is a small 5-acre neighborhood park in the Woodland Village subdivision with a basketball court and multi-purpose play field.

Recent improvements include fishing piers, boat docks and kayak docks, and a tot play area. The public restrooms at the pavilion in Mattingly Park have been modernized and the gravel parking area for boat trailers and vehicles has been paved. The park in Woodland Village consists of tot lots, basketball courts and opens space for passive recreation. The National Recreation and Park Association recommend 6.25 to 10.5 acres of park per 1,000 persons. Indian Head currently has about 10 acres per 1,000 persons. As new development occurs; however, the Town's Zoning Ordinance requires dedication of new parkland at a rate of 0.015 acres per dwelling.

In 2012, Charles County adopted a countywide Bicycle and Pedestrian Facilities Master Plan. A coordinated effort between the Town and County is encouraged in the effort to develop bicycle and pedestrian resources.

REFUSE COLLECTION

The Town currently provides refuse collection within the Town. Curbside recycling is also provided for such items as glass jars and bottles, newspapers, plastic bottles, and metal cans. Yard waste is also collected year-round, weather permitting. The County provides 10 drop off centers around the County that accept recyclable materials. The County has adopted a goal of 35% recycling in response to the 1989 Maryland Recycling Act.

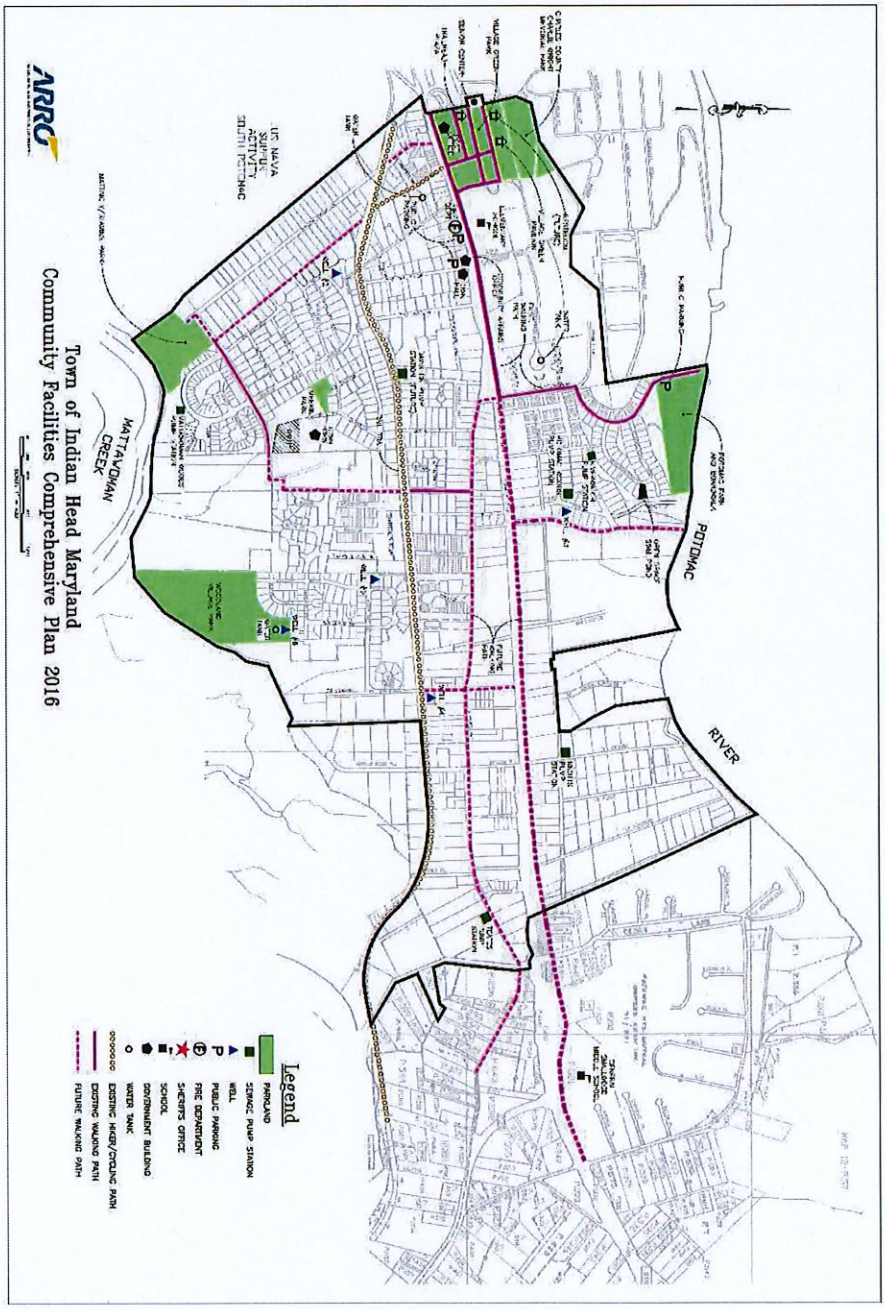
WATER AND SEWER SYSTEMS

The ability to provide municipal water and sewer services is a major attribute for the residents of the Town. It allows the Town to encourage moderate to high density development, which provides a variety of housing options and helps to keep costs moderate because of the density and efficiency of use.

The Town has four (4) active wells supplying its water distribution system with a capacity of 725 gallons per minute. The wells draw from the Patapsco Aquifer. Declining water levels in the Patapsco Aquifer will require close monitoring to ensure water quality standards are not exceeded.

The Town has an elevated water storage capacity of 300,000 gallons and a ground level storage capacity of 200,000 gallons. Industry standards recommend a one-day supply minimum of available storage, which puts the current capacity above the recommended minimum level. Additional storage above and beyond the one-day supply is required to meet fire flow requirements as established by the Insurance Services Office (ISO).

The Town has a wastewater collection system, which consists of five (5) lift stations and approximately 65,000 linear feet of sewer mains. The system has significant infiltration and inflow problems, which reduce the effectiveness of the sewage treatment plant. The plant, which began operation in 1968, was upgraded in 1982, 1992, and 2008. It may be necessary to upgrade and expand the sewerage treatment facilities in the future to allow for new development projected over the planning period and to correct and address the infiltration problems.



HOUSING

HOUSING GOAL

TO PROVIDE AN ADEQUATE SUPPLY OF HOUSING THAT IS BALANCED AMONG ALL PRICE RANGES AND SUITABLE TO MEET THE NEEDS OF THE VARIOUS HOUSEHOLD SIZES, AGE GROUPS, AND LIFESTYLES.

POLICIES AND IMPLEMENTATION STRATEGIES

Policy H.1: Conserve, rehabilitate, and revitalize existing housing.

Implementation Strategies:

1. Encourage the preservation of the homes along upper Indian Head Avenue and in the Mattingly Avenue area through use of preservation techniques including Historic designation and Historic District overlay zoning techniques, which could include flexible use regulations.
2. Provide opportunities to upgrade substandard housing through the use of tax incentives, grant programs, and the enforcement of Town and State livability codes.
3. The Town's Ordinances should encourage new development, including infill development, as well as redevelopment projects, to be consistent with the surrounding community.

Policy H.2: Maintain the integrity of existing residential neighborhoods from incompatible adjacent land uses and further improve their appearance and viability as neighborhoods by adoption and enforcement of appropriate regulations.

Implementation Strategies:

1. Ensure that incompatible land uses and zoning map amendments are not approved that will have a detrimental impact on existing residential neighborhoods.
2. Review existing ordinances and regulations, including the zoning ordinance, junk car ordinance, and others to ensure that they are adequate for conserving, rehabilitating, and revitalizing existing housing.

Policy H.3: Promote a variety of elderly care facilities, such as independent and assisted living accommodations.

Implementation Strategies:

1. Consider the adoption of zoning regulations that would encourage the establishment of such facilities. Land currently zoned for multi-family units may be appropriate for this type use with some modification and possible incentives added as an inducement.

2. Work with the County and the State to identify funding sources and other programs that may be utilized to assist with implementation of a program of elderly housing opportunities.

Policy H.4: Provide adequate facilities and services necessary to maintain, rehabilitate, and encourage the development of new housing.

Implementation Strategies:

1. Budget and schedule an annual program of capital facility improvements to upgrade the Town infrastructure. The provision of sidewalks, public open spaces, community centers, and libraries will improve the overall quality of life within the Town.

2. Evaluate the average income of employees on the Naval Support Activity South Potomac (NSASP) and the Naval Support Facility Indian Head (NSFIH) and encourage the development of new housing opportunities that meet their needs.

Policy H.5: Improve the overall appearance of the Town by encouraging visual improvements to existing structures, streets, and parking areas, and by adopting design standards for new development.

Implementation Strategies:

1. Develop and implement design standards to be met as part of the subdivision and site plan review process. Incorporate the need for sidewalks and trails during reviews.

2. Initiate efforts to work with existing landowners on a voluntary program of side improvements. Provide incentives and design guidance for the community to improve on its own.

Policy H.6: Enhance the preservation of historic and cultural resources.

Implementation Strategies:

1. Complete a comprehensive survey of historic and cultural resources in the Town.

2. Formally adopt a historic preservation ordinance as a key strategy to protect significant historic and cultural resources.

3. Develop historic preservation design guidelines. Guidelines will establish appropriate materials, treatment, and styles for renovation or new construction within the historic districts.

4. Establish a local historic preservation commission and local historic district(s) to facilitate protection of significant historical and cultural structures and properties.

INTRODUCTION

Housing is one of the most important elements of the Town. It is not merely shelter; it physically and socially reflects the character of the Town from its roots as housing for the NSASP and NSFIH, which began in 1890. Housing is the Town's principal land use and provides the majority of the property tax base and revenues. The development and maintenance of the facilities and services necessary for housing to exist – water, sewer, streets, solid waste collection, and parks and recreation – are the major costs for Town government.

Smart Neighborhoods

- Transportation choice and walkability
- Community interaction and civic life
- Efficient use of land
- Supports regional environmental goals, reduced land consumption, improved regional air and water quality
- Planned open space integral to the community
- Efficient use of infrastructure
- Synergistic effect of mixed use, in which residential and commercial uses support each other and contribute to long-term vitality.
- Enhances and complements existing community.
- Linked to adjacent communities.
- Range of housing types and densities
- Interconnected streets designed to balance the needs of all users with sidewalks and on street parking
- Compact design

The housing stock of the Town is predominately single-family residential structures ranging in age from the late 1800's to current, modern structures built on infill lots in some new subdivisions.

The oldest neighborhood in Indian Head is immediately adjacent to the NSASP and NSFIH and south of Route 210. This area is characterized by Victorian style houses of two or more stories on small lots with trees, porches, some out buildings, and a variety of additional plantings. It is this area that has been suggested for additional protection through some sort of Historic District Zoning, which may also allow some commercial uses like Bed and Breakfast facilities to make it more viable economically to preserve the units in their traditional form.

The rest of Indian Head is a mix of single-family units of varying ages distributed throughout Town and a large percentage of newly constructed single-family attached townhouse units distributed in five subdivisions throughout Town.

The Town currently owns, maintains, and manages a Senior Center in the Village Green. The Senior Center is open daily and offers programs and a sense of unity among seniors within the Town.

In many respects Indian Head is serving as the ideal residential community, providing for a balanced mix of housing sizes, types, and price ranges.

Indian Head can meet the Smart Growth Initiatives in Box H-1 by implementing the policy and implementation strategies contained in this Comprehensive Plan.

Densities in the Comprehensive Plan include Low, Moderate, and High-Density Residential Areas. As growth pressures continue in the future years, projects with higher densities will become more appealing, which will not degrade the quality of life in Indian Head as long as future plans contain landscaping, parks, public spaces outdoors, and recreational opportunities.

In accommodating new growth, emphasis should also be placed on the importance of preservation of existing housing stock, especially the historic homes that remind us of the character of our community.

ISSUES

Since housing is the primary source of Town revenues, it is in the Town's best interest to support high quality development and redevelopment of moderate to upscale housing using the mixed-use zoning concept to intermingle housing and support services.

It is the community's desire to provide a balanced program of housing that provides starter homes, middle-income homes, upscale single-family residential, and retirement units tailored to older residents including assisted living units, and possibly full nursing facilities.

The Charles County Comprehensive Plan identifies the goal "through cooperative efforts, provides a broad range of quality housing for all County residents, including those with low and moderate incomes." The Town's goal mirrors that of Charles County.

HOUSING DEMOGRAPHICS

Housing growth in Indian Head is projected to be moderate. Based on some of the projects that are in the development pipeline or have been discussed with the Planning Commission, it is possible that additional moderate to high density housing will be completed within the planning period in the Town Center Mixed Use zoning district along and north of Route 210. It is important to acknowledge that the uncertainty in the national economy may provide slower development than projected.

Projected Housing Units 2000-2030
Table H-1

Year	Households	Household Change Percent per 5-year increments
2000	1,222	-
2005	1,291	5.6%
2010	1,391	7.7%
2015	1,513	8.8%
2020	1,713	13.2%
2025	1,911	11.6%
2030	2,068	8.2%

Projections from Department of State Planning adjusted from 2010 census

Table H-1 shows that, based on previous growth, there may be an increase of 846 new dwelling units by the year 2030. This number is based on 1,222 dwelling units in 2000 that were occupied. This information will provide the basis for analysis of the Community Facilities chapter and projections in the Municipal Growth Element chapter.

Indian Head Housing Units Status
Table H-2

Housing Status	Units
Occupied	1,391
Owner Occupied	935
Renter Occupied	456
Vacant	163
Total Units	**1,554**

2010 Census Data

Table H-2 indicates that there were actually 163 dwelling units in 2010 that were unoccupied either because they were up for sale, seasonal units, or unoccupied for other reasons. Vacant dwelling units are considered as temporary situations so they should be compared to the next available census data.

Indian Head Housing Units by Householder's Age
Table H-3

Age of Householder	Owner Occupied		Age of Householder	Renter Occupied	
	Number	Percent		Number	Percent
	935	100		456	100
15-24 years	19	2.0	15-24 years	41	9.0
25-34 years	164	17.5	25-34 years	91	20.0
35-44 years	257	27.5	35-44 years	119	26.1
45-54 years	233	24.9	45-54 years	117	25.7
55-64 years	125	13.4	55-64 years	52	11.4
65-74 years	79	8.4	65-74 years	26	5.7
75-84 years	36	3.9	75-84 years	10	2.2
85 years and older	22	2.4	85 years and older	0	0.0

2010 Census Data

Table H-3 depicts Housing units by age and by owner or renter occupied. Notice that householders over 55 make up approximately 28.1 percent of owner-occupied householders. An additional 88 householders are 55 years old and older and are renting their homes. If the next census replicates these numbers, there will be approximately 25 percent of all householders that are approaching retirement or already retired. This is significant in that Indian Head not only will have to provide housing for this population, but it will have to have services and shopping for them as well. Public transit will be necessary if services are not located in Town.

HISTORICAL AND CULTURAL RESOURCES

Indian Head was founded in 1890 when the Department of the Navy (DON) established a Proving Ground on Cornwallis Neck. From the region's first Native American inhabitants at least 12,000 years ago to the establishment of the Proving Ground in Indian Head, the Town reflects the diversity of life in and around the Town of Indian Head.

Historic preservation enhances the community character and demonstrates pride and self-awareness. Resources that are significant in history, architecture, archeology, or culture can be recognized and protected.

In 1966, Congress established the National Registry of Historic Places as the Federal Government's list of properties significant in American History. A property on the list may be eligible for tax incentives and grants or loans. Currently there are no listings in the Town. The closest listing is in Bryans Road.

The Maryland Historical Trust also maintains a list of historical sites. A historic preservation easement program monitored by the Maryland Historical Trust preserves historic structures and properties for future generations.

The Town should consider completing a comprehensive survey of its historic and cultural resources to form the basis for future planning activities, including an historic district designation. In order for the Town to establish the necessary regulatory framework, the Town should explore the establishment of a local preservation ordinance, local historic preservation commission, and local historic district to facilitate the ongoing protection of Indian Head's historic character. Technical assistance for such efforts can be provided by the Maryland Historical Trust.

DESIGN GUIDELINES

There is considerable diversity of housing in Indian Head due to the following variables: a range of incomes, a mix of single households and family households with a variety of age differences in each, and historically significant and mixed-use properties. With all of these competing interests, it is often necessary to create design guidelines and/or standards to help plan growth in the Town.

Much of the development and redevelopment that will take place in Indian Head is infill development that is adjacent or in close proximity with residential properties and neighborhoods, which increases the necessity of good design guidelines or standards. Guidelines or standards with detailed criteria should be reviewed and updated in the land development regulations. This action would provide more compatibility with new development and adjacent neighborhoods. Adopting and maintaining good design guidelines and standards will provide potential builders with significantly more information to expedite submissions and approval for building and design projects and applications.

HOME OCCUPATIONS

Home occupations have become increasingly popular due to higher transportation costs, the higher cost of living, and generally with a downturn in the economy when people are looking for alternative ways to support themselves.

Home-based businesses can offer advantages to the public sector and the homeowner, providing the business remains secondary and accessory to the principal use of the home. Neighborhood complaints relative to home occupations can occur occasionally. This is minimized as a result of review and approval by the Board of Appeals for a special exception prior to approving a home occupation. Inspection of the home is necessary if there is a violation, and code enforcement should enforce the requirements of the home occupation.

Home occupations cannot accommodate everyone. There are some businesses that should only be permitted in a commercial zoning district in order to avoid creating a nuisance or impact on a residence or a neighborhood. Definition of a home occupation and the requirements are clearly defined in the Zoning Ordinance.

ECONOMIC DEVELOPMENT

ECONOMIC GOAL

TO REVERSE THE DECLINING ECONOMIC BASE IN TOWN THROUGH DIVERSIFICATION, RETENTION, EXPANSION OF EXISTING BUSINESSES AND INDUSTRY, AND TOURISM DEVELOPMENT.

POLICIES AND IMPLEMENTATION STRATEGIES

Policy ED.1: Implement the strategic plan for economic development with short and long-term goals.

Implementation Strategies:

1. The Town will emphasize the importance of economic development by maintaining a viable Economic Development Coordinator that represents all the economic engines in the Town and by aggressively pursuing plans developed and embraced by the Town Council.
2. The Town needs to ensure that Land Use Policies encourage the retainment of existing businesses while attracting the much-needed new development within the appropriately designated areas. In order to accomplish this goal, the Town needs to be able to support a variety of development opportunities including Mixed Use Development, which includes a variety of uses such as Office, Commercial, and Residential.
3. The Town shall evaluate all aspects of their Land Use Policies, including Zoning and Subdivision Regulations, and make any needed changes.
4. Work with the NSASP, NSFIH, and the community to develop a Town Center concept for the area from Potomac Avenue to the gate at the NSASP and NSFIH. The intent of this concept is to attract essential services to meet the needs of the citizens as well as tourists and to provide office and other business opportunities that support the needs of the NSASP and NSFIH.
5. Develop an action plan that provides objectives to be accomplished in the short term and appropriate funding levels through grants and the Town Capital Improvement Program to implement required infrastructure improvements such as street repaving, walkways, and bicycle paths.
6. Work to develop and enhance partnerships with public and private sector groups interested in economic development and tourism.
7. Evaluate the potential development of an Arts and Entertainment District in order to promote Indian Head as a nighttime destination place.

Policy ED.2: Develop a five-year plan for tourism development based on the natural assets of the community.

Implementation Strategies

1. Work with the Maryland Department of Natural Resources and private landowners to create a system of public open space and passive recreational opportunities along the Potomac River and Mattawoman Creek, including a boardwalk for educational and fishing opportunities as well as a marina.
2. Continue to explore water access possibilities through land owned by the Robinson Terminal. In conjunction with the effort, the Town will continue to explore the feasibility of developing an Indian Head to Washington D.C. Water Taxi Service and other alternative water- oriented tourism activities.
3. Enhance the public facilities on the Village Green to attract a broader range of visitors to the Town. Concerts, plays, festivals, and events are types of activities that will bring in new revenue sources to support business development.
4. Implement internal on- and off-road trail systems for cycling and hiking in Town. Connect Indian Head Rail Trail to central Town via a trail loop. Make Indian Head a destination for cycling on the Indian Head Trail and along Maryland Route 210.
5. Develop interpretive exhibits and programs, which focus on the natural assets of the community.
6. Work to establish a museum(s) in Town that center around the Department of the Navy (DON) and/or focus on the Native American theme.
7. Revise current regulations to encourage the establishment of visitor accommodations and support services like bed and breakfast facilities.

Policy ED.3: Streamline regulatory mechanisms to encourage economic growth.

Implementation Strategies

1. Streamline the review process for site development and permits within the areas designated for growth and revitalization.
2. Adopt flexible development regulations to promote innovative and cost saving site design and to protect the environment.

Policy ED.4: Develop a program of public and private actions to improve the aesthetics of the Town.

Implementation Strategies

1. Work with the State Highway Administration to develop additional landscaping plans for Maryland Route 210 from Potomac Avenue to the Town Limits, which will include sidewalks, crosswalks, trees, and lighting. Improve ways to make this section of Maryland Route 210 more pedestrian friendly. At this time, no plan exists for "SHA

streetscape" projects; however, the Town and SHA will continue to work together to determine and prioritize improvements.

2. Work with private landowners on a program of private initiatives to improve the facades and landscaping of existing buildings.

3. Evaluate the effectiveness of the Highway Corridor Overlay Zone and determine its applicability and impact on the development of the Town from Potomac Avenue to the Town Limits to limit its strip commercial look.

4. Develop a comprehensive signage program for the Town, which includes directional signs and provides guidelines for aesthetically pleasing signage for the Town.

5. Consider the adoption of architectural guidelines for new buildings and renovations within the commercial district and along all of Maryland Route 210 within the current Highway Overlay District.

INTRODUCTION

Indian Head has suffered a declining economic base in recent years primarily due to competition from major retail chains in the nearby developing commercial areas of Bryans Road and Waldorf. A larger selection of goods and merchandise in a location along the commuter route has tended to draw local citizens to those establishments.

Immediately adjacent to Indian Head and just past the Town at the end of the peninsula is the Naval Support Activity South Potomac (NSASP) and Naval Support Facility Indian Head (NSFIH), the largest employer in Charles County with approximately 2,900 employees. The employees of the base travel through Indian Head on their way to and from work but spend little time in Town. During the lunchtime period, base employees travel out to the post office or bank and to buy groceries or lunch in Town and nearby locations.

In recent years contractors associated with the NSASP and NSFIH have occupied vacant stores in the Town, which has helped offset the loss of support services and maintained the commercial base. However, the Town has not been able to realize its full economic potential because of the slow but constant drain of local business to other more viable economic areas.

A major concern and priority of the Town is that its commercial and economic potential be realized as fully as possible.

According to the County's 2006 Comprehensive Plan, in 2000, the ratio of employment to population in the County was 1 job for every 2.42 people up from the 1990 ratio of 1 to 2.62. This is expected to worsen over the 20-year planning period to 1 to 2.96. The County as a whole is only expecting a growth in jobs amounting to 9,000 from 2010 to 2030. There is no industry in Town other than the NSASP and NSFIH, and there is no industrial zoned land within the Town proper for future industrial development.

In the 1980s and 1990s, Charles County's economy expanded, and the County saw an increase in population and retail businesses. This provided a destination point for a variety of shopping opportunities for residents in Indian Head and surrounding areas. Today, although Indian Head's population cannot support some of

the major retail chains or big box retail establishments, the Town contains some retail and service-related businesses located within walking or biking distance. The Town's officials are very interested in attracting other businesses and tourists and have been making progress in that area. In 2009, a new Family Dollar store along Route 210 in Indian Head was approved for construction. (The Municipal Element describes some of these improvements). It is apparent that the current state of the national economy will affect the employment and economic growth in future years, however, the table and projections that are in the Plan will be able to be reviewed against the 2010 Census Bureau's numbers during the next Comprehensive Plan review. Tables within this Plan may be revised during the next Comprehensive Plan update.

Demographic and economic forecasts have been prepared with County data when Town data was not available. Tables should be updated during the next mandated 10-year Comprehensive Plan review.

The Charles County government has recently adopted the Charles County Economic Plan and Comprehensive Plan including the removal of the County's deferred development district.

Employment, Journey to Work
Table ED-1

Maryland: Southern Region, Charles County, Indian Head

Jurisdiction	1970	1980	1990	2000	2005	2010	2015	2020	2025	2030
Southern Maryland Region	41,190	50,980	93,028	125,371	148,629	160,400	177,700	187,800	195,600	201,300
Charles County	-	-	-	49,800	-	60,300	-	66,900	-	69,400
Indian Head	-	-	-	2,411	2,664	2,917	3,077	3,238	3,302	3,368

Actual 1970-2000; Projections 2005-2030

Historical Data from US Census Bureau of Economic Analysis, Tables CA 25 & CA 25N. Projections from 2010 to 2030

Prepared by Maryland Department of Planning Data Service, February 2009.

In the absence of at-place employment trends for Indian Head, Charles County and Southern Maryland data was used to illustrate employment growth trends. Overall, Charles County is projected to increase 39

percent in employment from the 49,800 persons employed in the year 2000. Retail trade is the largest employment sector in the County.

Table ED-2 below shows the projections extrapolated out to the year 2030 based on the overall growth in employees in the County. Indian Head should follow this trend fairly close mainly based on residents commuting out of Town as they have in the past.

2000-2030
Indian Head Employment Projections [1]
Table ED-2

Years	Percent Increase	Number of Jobs
2000		2,411
2010	21%	2,917
2020	11%	3,238
2030	4%	3,368

[1]*Percents based on Charles County's Projected Growth*

According to 2010 census data, Indian Head employees were traveling approximately 49.6 minutes during their journey to work and were earning a median household income of $69,079. The median value of owner-occupied housing was $217,900. Although it is recognized that the median household income and median value of owner-occupied housing has increased from the 2009 Comprehensive Plan figures, sufficient data at a Town level is not available to cite exact numbers. The mean travel time to work is also increasing, indicating that workers are spending more time now to reach their work destination outside of Town.

Travel Time to Work; Median Household Income;
Median Value of Owner-Occupied Housing
Table ED-3

Year	Mean Travel Time	Median Household Income	Median Value of Owner-Occupied Housing
2010	49.6 minutes	$69,079	$217,900

Source: US Census Bureau, American Community Survey 2010-2014

In 2015, natural gas lines were installed in Indian Head along Indian Head Highway. Natural gas is now available to Town businesses and residents. The Town is currently pursuing the installation of broadband facilities.

In November of 2015, an Economic Revitalization Strategy was prepared for the Town by Gary V. Hodge, President of the Regional Policy Advisors. A copy of the full report is on file in the Town Office. The strategy

included 16 specific strategic initiatives. One of the indicators related to gaining a designation as a "sustainable community" has been achieved. The remaining 15 initiatives are as follows:

1. Conduct Mid-Atlantic search for a grocery store.
2. Investigate the feasibility of locating a brand name coffee/sandwich shop along south bound lane of Rt. 210 near NSASP and NSFIH.
3. Construct the previously designed Indian Head Boardwalk and Living Shoreline on the Potomac.
4. Implement a plan with the Maryland Broadband Cooperative to bring Fiber Optic Cable in downtown Indian Head.
5. Designate the Black Box Theatre/Indian Head Center for the Arts as an arts and entertainment district.
6. Re-establish a satellite office for a Charles County Sheriff's Substation in Indian Head.
7. Facilitate the re-development of Ely Property along Indian Head Highway as a viable commercial use.
8. Initiate a modernization of the Village Green Pavilion as a principal venue for large events.
9. Facilitate the development of the Robinson Terminal Warehouse Corporation site as a viable economic site.
10. Remove blighted properties within the Town.
11. Investigate the feasibility of establishing a ferry terminal on the Potomac River in Indian Head with commuter service to Fort Belvoir and Quantico.
12. Initiate an effort to establish a Naval Energetics Museum at Indian Head.
13. Facilitate the redevelopment of the John T. Parron House as a restaurant/hunting lodge or other commercial use.
14. Initiate a plan by the State Highway Administration to enhance Indian Head Highway (Rt. 210) with a streetscape project. At this time, no plan exists for an "SHA Streetscape" project. SHA and the Town will continue to determine and prioritize transportation improvements.
15. Develop a special events program and promote eco-tourism with a waterfront outdoor amphitheater.

TOURISM

Indian Head's greatest strength, aside from its location next to the largest single employer (NSASP and NSFIH) in Charles County, is its water frontage along the Potomac River on the north and Mattawoman Creek on the south. The recent improvements to Mattingly Park along the Mattawoman Creek have increased the use of the facility for fisherman and boaters. The Town's planned construction of a boardwalk and nature walk along the Potomac River will promote use by local residents as well as those in the County.

While tourism is not a large industry in the Town presently, the Town hopes that these improvements, along with a vibrant commercial district, will help to foster a viable tourism industry over time.

The Management Plan of the Southern Maryland Heritage Area was adopted and made part of the comprehensive plans of Calvert, Charles, and St. Mary's counties in 2003 and included Indian Head within its boundaries. The Town supports the efforts of the certification of the Southern Maryland Heritage Area Plan. This update of the Comprehensive Plan, when adopted by the Mayor and Town Council, incorporates by reference all portions of the Southern Maryland Heritage Area Management Plan, except those portions solely relating to other jurisdictions within the Heritage Area, as part of the Comprehensive Plan. The plan outlines themes and resources important to the heritage of the region and outlines stewardship and preservation issues associated with these resources.

Inclusion in a Certified Heritage Area allows heritage tourism projects within the local jurisdiction to apply for Maryland Heritage Area Authority benefits such as grants, loans, and tax credits. The Southern Maryland Heritage Area's Management Plan is available at

https://destinationsouthernmaryland.files.wordpress.com/2015/05/shma-plan-2003.pdf.

TRANSPORTATION

TRANSPORTATION GOAL

TO MAINTAIN AND IMPROVE THE VEHICULAR AND PEDESTRIAN TRANSPORTATION NETWORK TO ENSURE SAFE AND EFFICIENT TRAVEL.

POLICIES AND IMPLEMENTATION STRATEGIES

Policy TN.1: Develop and implement a design improvement program for the Maryland Route 210 corridor that maintains the smooth flow of traffic through the Town, but which also provides for the development of a more livable downtown area with more pedestrian opportunities for residents.

Implementation Strategies:

1. Continue working with the State Highway Administration through their Smart Growth Programs to develop traffic calming areas or alternative traffic control devices such as roundabouts in order to make Maryland Route 210 a more pedestrian-friendly road.
2. In working with the State Highway Administration, continue managing access and improving existing ingress and egress onto Maryland Route 210.
3. Provide an interconnected local street network including building a local roadway parallel to Route 210 on the north side of Route 210 through future development and redevelopment.
4. Continue working with MDOT to develop strategies to reduce travel demand from single occupancy vehicles to transit, especially during peak morning and afternoon peak hours along MD Route 210.

Policy TN.2: Provide an interconnected pedestrian and bicycle path network in the Town.

Implementation Strategies:

1. Develop a phased capital improvement program for installing sidewalks throughout the Town. This program should be phased to allow completion of sections of sidewalks based on the greatest need.
2. Require that sidewalks and bicycle access be provided in all new subdivisions and commercial development.
3. Provide for bicycle parking at all public facilities and encourage private business owners to provide them at locations that attract large numbers of people. (Fast food restaurants, grocery stores, theaters, etc.)

4. Implement a plan to add pavement markings and signage for safe bicycle routes through the Town.

5. Retrofit existing Town roads to accommodate bicycle and pedestrian facilities as funding allows, thus creating an alternative transportation network within the Town limits.

Policy TN.3: Provide adequate parking areas for vehicles and bicycles in the commercial district.

Implementation Strategies:

1. Develop a policy for off street parking for existing businesses that will better utilize existing parking areas and increase the available parking spaces for vehicles and bicycles. Consider financial incentives to encourage existing businesses to add bicycle racks.

2. Develop off street parking facilities in areas where limited space currently exists as part of a commercial revitalization program.

Policy TN.4: Reduce traffic congestion on Maryland Route 210. Encourage the development and use of car and van pools and the establishment of commuter bus service.

Implementation Strategies:

1. Coordinate with the State Highway Administration and the Maryland Transit Administration to develop a commuter Park and Ride facility in the Town limits that can serve commuters bound to the DC area.

2. Coordinate with the Regional Ride Share Program (administered through the Tri-County Council for Southern Maryland) to develop a commuter bus service and van pools.

INTRODUCTION

The Town is currently bisected by Maryland Route 210, a major four-lane highway that originates on the western side of Town at the Naval Support Activity South Potomac (NSASP) and Naval Support Facility Indian Head (NSFIH). In addition, there are numerous cross streets and sidewalks. The sidewalk system is not complete and is primarily located in new subdivisions that have more modern standards.

The transportation system is essential to the functioning of the Town because it provides for the mobility of people and goods. A well-designed system of roads, sidewalks, and bikeways is necessary to ensure the continued viability of the Town as a livable community and to accommodate growth that relies not solely on the automobile for mobility.

CLASSIFICATION/INVENTORY

Streets and highways are classified according to the functions served. The designations contained in the Town of Indian Head's Street Classification and Official Transportation Plan Map are:

Minor Arterial: (Maryland Route 210) – A route for which the major function is movement of large volumes of vehicular through traffic.

Major Collector: (Blair Road, Strauss Avenue) – A route for which the major function is movement of large volumes of primarily vehicular through traffic, which provides access to abutting land as a secondary function.

Minor Collector: (Bland Drive, Dogwood Street, Riverwatch Boulevard, Jennifer Drive, Jenkins Drive, Indian Head Avenue, McWilliams Street, Mattingly Avenue, Woodland Drive) – An intra-town route for which the major function is movement of large volumes of local traffic. Providing access for through traffic is a secondary function.

Local Roads: A route for which the major function is movement of small volumes of local vehicular traffic, primarily to provide access to abutting property.

Cul-de-sac: A minor street with only one outlet and having an appropriate terminal for the safe and convenient reversal of traffic movement.

NOTE: All of the remaining roads in Indian Head are classified as local roads or cul-de-sacs.

Alley: A right-of-way which affords a secondary means of vehicular access to abutting buildings and is not intended for general traffic circulation.

Private Roads: Any road or right-of-way that is used for ingress or egress that is not owned by a public body.

VEHICULAR, PEDESTRIAN, AND BICYCLE TRANSPORTATION

According to the 2006 Charles County Comprehensive Plan, the Average Daily Trips (ADT) on Route 210 just east of Town and after the Route 225 split is 13,450 trips with Route 225 having 12,725 trips. The high volume of traffic on Route 210 during peak hours causes problems for pedestrians and vehicles attempting to cross Route 210.

Route 210 and Route 225 are heavily used by residents of Indian Head to commute to work. According to the County Comprehensive Plan, 60% of all County commuters commute outside the County mostly to Washington D.C. or Prince George's County. With few employment centers in Town, most citizens of the Town commute to the NSASP and NSFIH or outside the County.

The State Highway Administration has no long range plans at the present time within their Highway Needs Inventory along Route 210 in Indian Head.

In 2000, the Virginia Department of Transportation completed a passenger ferry boat feasibility study between Quantico, Virginia, and Georgetown with a stop in Indian Head. The study found that while technically feasible, the cost did not justify a publicly operated ferry service.

The Town has initiated a project along the Potomac River to construct a 12-foot-wide boardwalk beginning at the NSASP and NSFIH and extending east 1,200 feet. In addition, an elevated nature walk will extend from the boardwalk to public parking along Riverwatch Drive. Ultimately, it is the intent to extend the boardwalk further east as development continues eastward. The boardwalk project is funded by the Federal Transportation Alternatives Program, which is administered by the State Highway Administration,

with matching funds from the Town of Indian Head. Completion of the first 1,200 feet is planned for year 2021.

There are numerous pedestrian sidewalks within the Town, however, sidewalks are not always continuous from one community to another or to activity centers. While there have been sidewalk improvements recently that increase connectivity, more needs to be done to foster improved access and pedestrian movements.

The Route 210 corridor and the County Rail Trail shared use path through Town that connect to areas of the County, provide outstanding opportunities for both pedestrian and bicycle travel. There is, however, a need to add bicycle routes on existing Town streets to enhance overall safety by implementing the proper signage, pavement markings, and barriers where appropriate in accordance with the Maryland Manual on Uniform Traffic Control Devices.

Minor retrofit projects should be funded and implemented while attempting to attract grant funding from State and Federal agencies. The Town can also enhance the pedestrian, vehicular, and bicycle transportation network with proper coordination with private developers during the site plan review process.

In the early 2000's, the State Highway Administration improved the streetscape along Route 210 from the NSASP and NSFIH to Potomac Street. The improvements included paving, curbs, sidewalks, landscaping, and handicapped ramps.

In May 2016, the Town and SHA met to discuss short-term and long-range plans for transportation enhancements. The Town and SHA will continue to work together to achieve the goals presented herein.

SHARED USE PATHS

Replacing vehicular trips with non-motorized bicycles or with walking yields significant environmental benefits and promotes a greater sense of community.

Planning bicycle paths and pedestrian walkways generally requires a fair amount of planning, may require acquisition of land, and needs the support and commitment of public officials. Some communities elect to establish a bicycle and pedestrian advisory committee that would study and recommend efficient and safe routes to the elected officials then provide construction plans for this public improvement. A comprehensive effort of establishing bicycle and pedestrian routes throughout the Town will require a bicycle and pedestrian path plan (hereafter referred to as a shared use path) with routes and support of the Mayor and Council, Planning Commission, Public Works Department, and the residents. Connection to adjacent communities would be beneficial in planning this mode of transportation. Traffic calming may need to be added to ensure safety of riders or pedestrians. A shared path system is preferred over a separate bicycle path and pedestrian path due to the limited space that is available in an already built environment.

A major shared use trail, 13 miles in length, has been completed by the County throughout the Town beginning at the NSASP and NSFIH. The old rail line has been eliminated and replaced with a new paved trail, which will ultimately extend through the County. In 2014/2015, the Town constructed an 8-foot-wide connector trail from the County rail trail to the Village Green Park. A trailhead plaza has also been installed

in Village Green Park as a refuge for bikers and pedestrians. A public restroom facility is planned for 2021 in Village Green Park to serve bikers and pedestrians, funded by a Transportation Alternatives Grant.

SHA and MDOT maintain limited funds to develop shared-use paths adjacent to SHA's roadway network. Shared-use path improvements along and adjacent to MD 210 (Indian Head Highway) must be coordinated with SHA. Where the need is present, SHA can develop and construct improvements to promote connectivity or address safety concerns. In general, off-road improvements must be within 100 feet of an SHA roadway. Such projects must be at locations where no other construction or reconstruction project is currently planned. The Town must agree to fund and/or secure all non-SHA right-of-way, provide opportunities for public involvement, and agree to maintain the infrastructure following transfer of maintenance. All incorporated areas are within Priority Funding Areas (PFAs), as defined by the Maryland Department of Planning. Within PFAs, project construction costs are to be shared with SHA funding 75 percent and the local jurisdiction funding 25 percent. In addition, within Sustainable Communities such as Indian Head, project construction costs may be funded entirely by SHA.

TRAFFIC CALMING

Traffic calming utilizes a wide range of methods that diverts traffic or slows down motor vehicles, which provides more safety for pedestrians and bicyclists. It is generally used in areas where there are a number of pedestrians on the street and a number of vehicles, some of which can be through traffic, as we would see on Blair Road, Mattingly Drive, Woodland Drive, or Strauss Avenue. It is often requested by citizens when they hope to mitigate the impacts of speeding vehicular traffic through their neighborhoods.

Each situation where traffic calming measures are utilized needs to be studied and applied properly to the specific situation for which it is intended to achieve positive results. A common traffic calming devise could be as simple as a stop sign placed in an appropriate location to allow pedestrians to cross the street or to slow down speed in residential neighborhoods. Speed humps or tables are, also, used to slow traffic and discourages through traffic from using residential streets. When determining use of traffic calming devices, a qualified engineer and emergency personnel should be consulted to evaluate the application and a cost benefit analysis before the improvement is considered. Improvement costs could be a funded by a developer if the project is creating an impact at an otherwise safe location that may become unsafe with the impact of the construction of new development.

Where warranted, SHA may choose to implement traffic calming measures along SHA highways including Rt. 210. SHA does not, however, permit the construction of speed bumps on SHA roadways.

PUBLIC TRANSIT

As stated in the Economic element, many residents of the Town commute to work out of Town and, in some cases, out of the County. Those who do not drive or car pool rely on the Maryland Transit Administration commuter bus from Indian Head to the Southern Avenue Metrorail. The Town should explore future transit expansion needs such as commuter bus service to reduce traffic congestion and afford the Town residents an option to passenger car service.

SHA maintains limited funds to develop park-and-ride lots adjacent to SHA's roadway network and encourages transit use and ridesharing. Prior to initiating project development, the Town will need to document demonstrated demand for a future facility, identify right-of-way for a future facility, and demonstrate public support for a future facility.

PARKING

In particular, along Route 210 and west of Potomac Street, there is a lack of parking to support the existing business activity. There is a public parking lot for eight (8) cars in Gering Court at Route 210 and public parking for 26 cars to the rear of the Black Box Theatre across Indian Head Avenue from Town Hall. While this parking provides a huge benefit to the public and local businesses, in order to allow maximum use of the existing structures for the allowable uses, additional parking is required. The Town has begun to study this issue and develop feasible options in concert with the private sector.

EXISTING PROBLEM AREAS

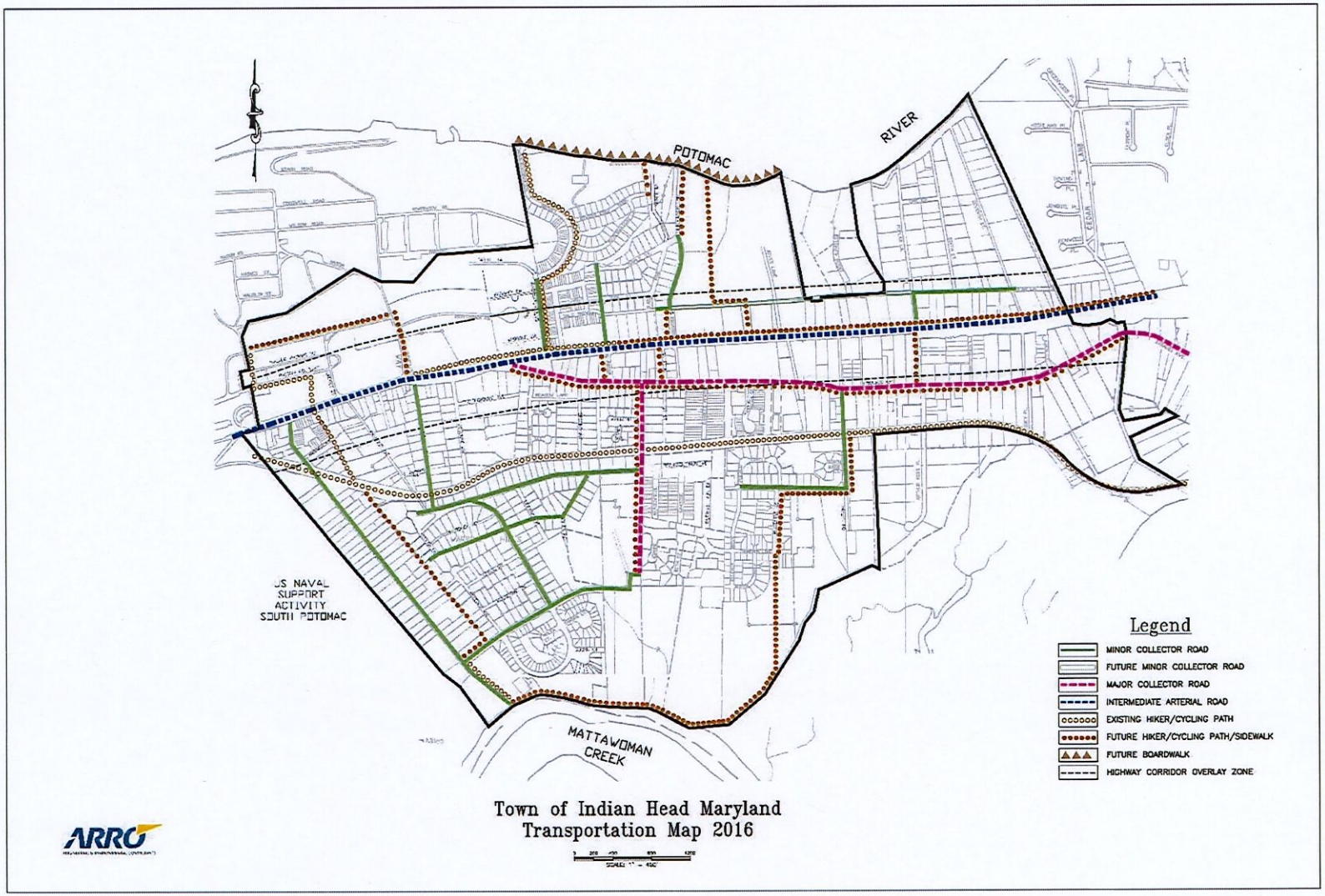
There is a high volume and high speed of traffic on Route 210, particularly in the morning and evening as workers arrive and depart the NSASP and NSFIH. This was partially addressed by marking brick paver crossings during the streetscape upgrade and by placing crossing signage in 2009. The continuous movement of traffic entering and departing the base in the morning and evening continues to make it difficult for pedestrians to cross the highway and for vehicles to cross or enter Route 210.

The lack of connecting sidewalks and bicycle pathways make pedestrian movement hazardous and discourages residents from undertaking either activity.

There are no commuter parking lots to support bus service to the District of Columbia.

Some streets are too narrow to accommodate traffic and pedestrian travel (i.e., Woodland Drive from Strauss Avenue to Ellerbe, Old Strauss Avenue and the streets in Knotts Subdivision) and some are misaligned (i.e., Jennifer Drive and Blair Road).

SHA will continue to work with the Town to determine and prioritize transportation infrastructure improvements along MD 210. The inclusion of such improvements in Charles County's 2016 Transportation Priorities Letter is an important first step to potential project development. The Town should work with both the County and Naval Surface Warfare Center Indian Head to jointly develop a list of needs within this corridor from which improvements may be developed later. The Town should continue efforts to redevelop central Indian Head along MD 210 and to coordinate future improvements with redevelopment.



Town of Indian Head Maryland
Transportation Map 2016

WATER RESOURCES ELEMENT

WATER RESOURCE GOALS

1. ***TO ENSURE THE QUALITY OF WATER AND PROTECT THE PUBLIC HEALTH, SAFETY, AND WELFARE OF ITS CITIZENS.***
2. ***TO PROTECT INDIAN HEAD AND THE STATE'S LAND AND WATER RESOURCES AND MEET SMART GROWTH POLICIES***
3. ***TO PARTICIPATE WITH OTHER JURISDICTIONS TO PRESERVE AND IMPROVE THE CONDITIONS OF THE CHESAPEAKE BAY, ITS MARSHES, AND OTHER WATERS OF THE STATE***
4. ***TO MINIMIZE NUTRIENT RUNOFF AND EROSION AND PRACTICE BEST MANAGEMENT PRACTICES TO REDUCE IMPACTS FROM DEVELOPMENT.***

POLICIES AND IMPLEMENTATION STRATEGIES

Policy WRE.1: In order to minimize nutrient runoff and erosion, Best Management Practices including environmental site design to the maximum extent possible as required in the State Stormwater Management Design Guidelines to reduce impacts from development and continued compliance with the MS4 program is recommended to be completed. Such techniques include:

a. Minimizing disturbance by clustering development and preserving open space

b. Vegetative filter strips and other multi-functional landscape areas

c. Roof top storage

d. Micro-bioretention facilities

e. Encourage the planting of street trees and landscaping to reduce temperature and enhance nutrient reduction

f. Disconnection of rooftop and non-rooftop runoff

g. Rainwater harvesting

h. Drywells

i. Rain gardens

j. Other practices in the State Design Manual

Policy WRE.2: Initiate an inflow and infiltration study and subsequent sewer system rehabilitation program to reduce excessive inflow/infiltration and potentially increase the number of available sewer taps as well as reduce operational expenses associated with operating pumping stations and treatment plant.

Policy WRE.3: Install emergency generator at the existing sanitary sewer pumping stations.

Policy WRE.4: Consider the installation of permanent meters to continuously monitor sewer flows at strategic locations throughout the sewer system to monitor areas of excessive inflow and infiltration.

Policy WRE.5: Add Backflow Preventers to individual water services for existing customers to prevent potential contamination of water supply. (New development is required to do this as part of the existing Town's water and sewer policy).

Policy WRE.6: Refurbish or replace Well #5 to assist in providing sufficient water supply for the planning period.

Policy WRE.7: Develop a system for allocating and monitoring sewer and water taps.

Policy WRE.8: Develop and place online new well, storage tank, and booster pump in the Patuxent Aquifer.

Policy WRE.9: Initiate coordination with DON to interconnect water supplies in event of emergencies.

Policy WRE.10: Initiate a regional discussion with the County on the future of wastewater treatment for Indian Head and the surrounding communities.

Policy WRE.11: Initiate a leak detection program to reduce unaccounted for water to less than 10%.

Policy WRE.12: Initiate a wellhead protection study to identify the areas surrounding each well that could lead to contamination if pollution would enter the groundwater. Adopt a wellhead protection ordinance for source water protection.

INTRODUCTION

The Town of Indian Head is located in the northwestern portion of Charles County, Maryland on a peninsula between the Potomac River and the Mattawoman Creek. The Town of Indian Head is a municipality of approximately 4,100 citizens, not including the adjacent Naval Support Activity South Potomac (NSASP) and Naval Support Facility Indian Head (NSFIH), which serves as the Town's western border. The Potomac River serves as the Town's northern border, Mattawoman Creek as the southern boundary, and the unincorporated area of Charles County as the east boundary. Indian Head provides its own water and wastewater conveyance, storage, and treatment.

The Patapsco Aquifer is the main source of potable water supply for the Town, which is treated and distributed at four separate well sites. Based on the highest semi-annual ground water withdrawal reports for the past five years, the Town pumps on average (actual withdrawal) 256,265 gallons per day. The potable water supply is currently provided by three (3) separate wells in the Patapsco Aquifer yielding 534,600 gallons per day and one (1) well in the Patuxent Aquifer yielding 270,000 gallons per day with all wells operating 18 hours per day. With Well #5 out of service, the maximum potential yield from the remaining wells is 534,600 gallons per day. Well #2, pumping at 105 gallons per minutes (gpm), is located on Evelyn Lane, Well #3, pumping at 230 gpm, is located on Dogwood Street; Well #4, pumping at 160 gpm, is located on Woodland Drive, Well #5 (currently out of service), pumping at 180 gpm, is located at Woodland Drive and Pueblo Circle, and Well #6 is located on Thompson Lane.

Combined water storage of 500,000 gallons is provided by two (2) elevated ellipsoidal tanks and one (1) ground level tank. Tank #1 is a 100,000-gallon tank on Town Street constructed in 1954 and last repainted in 2000. Tank #2 is a 200,000-gallon tank on Diffenbach Court, originally constructed in 1980. The 200,000-gallon ground level tank is located at Well #6 on Thompson Lane. Overflow elevation for both elevated tanks is elevation 204. All tanks are currently maintained by Utility Services Company, Inc. under contract to the Town.

The Town's water distribution system consists of water main sizes from 4-inch to 8-inch diameter. Fire suppression as well as domestic needs are satisfied throughout Town with pressures ranging from 40 psi to 80 psi depending on the specific locations. All water customers are metered.

Comparing water-billing records for 1,481 residential and 59 commercial connections to water production records, a water differential of 27% exists currently in the Town's system. Actual water consumption, based on billing records, is approximately 131 gpd per connection and 181 gpd per connection. The difference between water billed and water produced can be accounted for in part by unmetered use of water for hydrant flushing, firefighting, leaks, municipal use, and other purposes.

The Town's sewage treatment is provided by the Town of Indian Head Wastewater Treatment Plant located on Hailey Road. The plant's average daily treatment capacity is 500,000 gallons per day. In early 2009, construction of an Enhanced Nutrient Reduction (ENR) project was completed, which provided for the ability of the treatment plant to produce an effluent reliably consisting of 4 mg/l of nitrogen and 0.3 mg/l of phosphorus. This enhancement greatly reduces the loadings of nitrogen and phosphorus discharged by the plant into the Chesapeake Bay to 6,088 lbs/year and 457 lbs/year respectfully. The new upgraded plant is a 4-stage bardenpho process discharging to Harrison Cut, which flows to Mattawoman Creek. Sludge, which is thickened at the plant, is hauled to the County's Mattawoman Treatment Plant for dewatering and ultimate disposal. The most recent 3-year average daily flows metered at the plant are 394,300 gpd.

THE WATER RESOURCES MANDATE OF HOUSE BILL 1141

Due to water quality concerns and shell fish decline in the Chesapeake Bay, House Bill 1141 was approved by the Maryland Legislature and signed by the Governor in 2006, which resulted in a mandate to provide a Water Resources Element in all future Comprehensive Plans. The purpose of this element is to analyze long-term water needs and supplies for the land uses in Indian Head, to analyze the sewerage and stormwater generated in the community, and to provide goals, policies, and strategies for conservation, pollution reduction, and water quality degradation in the Town during the planning period.

The Purpose of the Water Resource Element (WRE) is to ensure that future municipal comprehensive plans take into account the opportunities and limitations presented by local and regional water resources. The WRE planning process will assist local governments in protecting public health, safety, and welfare, in meeting State Smart Growth policies, and in protecting Maryland's land and water resources.

CURRENT STATISTICS AND FUTURE PROJECTIONS

The Town of Indian Head is currently home to 4,100 residents and 1,513 households, which are projected to grow to a population of 5,378 residents and 2,068 households by 2030.

Future growth will largely result from infill development or redevelopment within the current municipal boundaries and by annexation of land from Charles County to the east of Town.

Table WRE-1 below provides projected population and household figures.

Water/Sewer Demand and Population and Household Projections for 2030
Table WRE-1

	2000	2005	2010	2015	2020	2025	2030	Change %
Population	3,423	3,603	3,844	4,100	4,575	5,044	5,378	57% or 1.9%/yr
Household	1,222	1,291	1,391	1,513	1,713	1,911	2,068	69% or 2.3%/yr
Household Size	2.80	2.79	2.76	2.71	2.67	2.64	2.60	-7.0% or -0.2%/yr
Water Demand (GPD)[1]	226,070	238,835	257,335	279,283	329,283	378,783	418,033	85% or 2.8%/yr
Wastewater Flow (GPD)[2]	317,720	335,660	361,660	394,300	444,300	493,800	533,050	68% or 2.2% yr

Source: Department of State Planning. Projections for highest development pressure method, adjusted for 2010 Census figures.

[1] Average day demand at 250 GPD/EDU for future flows beyond 2015

[2] Average day flow at 250 GPD/EDU for future flows beyond 2015

DRINKING WATER SUPPLY ASSESSMENT

The residents of Indian Head receive their drinking water from three (3) wells supplied by groundwater from the Patapsco Aquifer and one (1) well in the Patuxent Aquifer. Well #1 is currently not in use and Well #5 was previously abandoned.

Well #2 has a pumping rate of 105 gallons per minute (gpm) using a 10-horsepower pump. It has a pumping level of 195 feet with a static level of 138 feet. The water is pumped to a 2,000-gallon detention tank housed in a concrete block building on Evelyn Lane. The well depth is 294 feet and the pump is at 258 feet.

Well #3 has a pumping rate of 230 gpm using a 15-horsepower booster pump. The water is pumped to a 2,000-gallon detention tank housed in a concrete block building on Dogwood Street. The well depth is 522 feet and the pump is at 273 feet.

Well #4 has a pumping rate of 160 gpm using a 20-horsepower pump. The water is pumped to a 2,000-gallon detention tank housed in a concrete block building on Woodland Drive. The well depth is 442 feet and the pump is at 380 feet.

Well #5 has a pumping rate of 180 gpm using a 15-horsepower vertical turbine split case booster pump, located on Woodland Drive. It has a draw down level of 168 feet with a static level of 124 feet. The water is pumped to a 2,000-gallon detention tank housed in a concrete block building on Woodland Drive. The well depth is 367 feet and the pump is at 210 feet.

Well #6, in the Patuxent Aquifer, has a pumping rate of 250 gpm, which is chlorinated and pumped to a 200,000-gallon ground storage tank.

Wells are controlled with the Mission System to control levels. Well #2 has the only pump that is not tied to the control system. Instead, it uses a timer to control when it is on and off.

Table WRE-2 provides a summary of the pumping capacities for the three (3) wells in the Patapsco Aquifer and Well #6 in the Patuxent Aquifer currently in service for the Town:

Existing Well Yields
Table WRE-2

Well	Pumping Rate	X=24hr (gal)	X=18hr (gal)
2	105 gal/min	151,200	113,400
3	230 gal/min	331,200	248,400
4	160 gal/min	230,400	172,800
6	250 gal/min	360,000	270,000
Total, all wells in service as current		1,072,800	804,600
Current potential withdrawal with largest well out of service (#3)		712,800	534,600

Note: Well #5 has a pumping rate of 180 gpm but is excluded at this time due to water quality concerns.

The Town currently operates its water distribution system under Water Appropriation and Use Permit Numbers CH19576003(10) and CH19576103(03). It permits the Town to pump groundwater from five existing wells for a combined daily average allocation of 350,000 gpd and 577,000 gpd for the month of maximum use.

Treatment is provided at each well for disinfection by introducing liquid hypochlorite. No other treatment is provided. The Town Operator is a private contractor that provides operations services under contract to the Town.

The Patapsco Aquifer, from which Indian Head obtains its water supply, provides an adequate quantity of drinking water to meet the current needs of residents. The Maryland Department of the Environment has indicated, however, that the Patapsco Aquifer is currently stressed and additional appropriation from this aquifer for the Town's use will not be forthcoming. In order to meet the needs from additional growth anticipated through 2030, new well(s) withdrawing from the lower Patuxent Aquifer will be required. The Town has developed a new well at the location of old Well #6 on Thompson Lane, which draws water from the Patuxent Aquifer.

Current water quality from the existing wells (based on the Town's monthly testing) is satisfactory except for Well #5, which has elevated levels of gross alpha. Well #5 has been taken off line at the present time. The Town recognizes the need to protect potable water sources, and is evaluating the idea of developing a Wellhead Protection Ordinance similar to those in other Maryland municipalities.

There are no private wells located in the Town of Indian Head with the exception of two houses on Mattingly Avenue. It is planned to connect these two houses to the public water system in the near future. These two houses are included in the potential additional EDUs of development described in this section.

Using the Town water production records from the last five years, the results from Table WRE-2, and the potential demand from development approved but not yet built of 500 gpd average day flow (from 2 equivalent dwelling units), the following current water capacity for future growth is determined.

Current Water Capacity for Future Growth
Table WRE-3

	Capacity Based on Average Day Flow	Average Day Capacity during Month of Maximum Use	Maximum Day Capacity
*Current Permit Limit	350,000 gpd	577,000 gpd	534,600 gpd (1)
Historical High x 10% for drought	-307,950 gpd	-342,770 gpd	-420,950 gpd
Potential demand from approved development	42,050 gpd -500 gpd	234,230 gpd -650 gpd	113,650 gpd -800 gpd
Net Excess Capacity	41,550 gpd	233,580 gpd	112,850 gpd

(1) from Table WRE-1

**240,000 GPD for four (4) wells in the Patapsco Aquifer and 110,000 GPD for Well #6 in the Patuxent Aquifer. Month of maximum use = 350,000 GPD for four (4) wells in the Patapsco Aquifer and 155,000 GPD for Patuxent Aquifer per well appropriation permit #CH19576003(10) and #CH19576103(03).*

Based on current conditions, the maximum allowable average day flow for future development is 41,550 gpd or 166 equivalent dwelling units (EDUs).

Converting average daily projections in Table WRE-1 to maximum daily demands, the current maximum daily capacity will be exceeded in year 2023. Beyond this capacity, the Town will need to add new wells in the Patuxent Aquifer (in addition to Well #6) and/or rehabilitate Well #5 to remove gross alpha to allowable levels.

The Town currently does not have a wellhead protection plan. A wellhead protection plan identifies the area of influence for each well and identifies any potential sources of pollution or contamination that may affect the wells. The Town should therefore conduct a wellhead protection study and adopt a plan to protect the well sources from future contamination.

As stated previously the Town's unbilled water is approximately 27%. A portion of this unbilled flow can be accounted for in hydrant flushing, firefighting, Town parks, wastewater treatment plant, water treatment plant, and leaks. To better manage unaccounted for water, the Town should establish a detailed tracking program to closely monitor each category of unaccounted for water. Using the list of sources identified, the Town should estimate the amount of water lost by each source on a monthly basis. Table WRE-4 identifies methods the Town can use to estimate the amount of water lost by each source. In some cases, more than one method of estimating water loss has been identified.

Once the amount of unaccounted for water has been estimated for each month, each category should then be evaluated to determine methods of reducing or eliminating unmetered uses. If the volume of unaccounted for water continues to exceed 10%, a more detailed study of the Town's unaccounted for water would be warranted. A detailed unaccounted for water study would include a leak detection study of the distribution system.

Methods for Estimating Unaccounted for Water Usage
Table WRE-4

Source	Method(s)
Hydrant Flushing	1. Record the amount of time each hydrant is open and use pilot tube to estimate flow rate. The total volume of water used during the hydrant flushing is the product of the flow rate and the flushing time. 2. Estimate volume used during hydrant flushing by reading the system meter prior to and after flushing procedure. This method is less accurate than No. 1 above and should only be used during low demand periods.
Unmetered Filling of Swimming Pools	1. Place a meter on the line used to fill the pool. 2. Calculate the volume of water the pool can hold. The pool owner should contact the Town each time the pool is filled as well as when additional water is used to "top-off" the pool.
Water Main Breaks	1. Determine the amount of water lost by reading the amount of increased flow at the system meter during the period of break.
Sewer Main Cleaning	1. Determine volume of water stored in the sewer cleaning truck and keep track of the number of times the truck is filled.
Broken or Uncalibrated Meters	1. Replace or repair all broken meters. Begin a meter calibrating program and calibrate a certain percentage of meters each year.
Fire Protection	1. Have the fire department notify the Town after each period of water usage. The fire department should be able to inform the Town of the length of time during which water was used. The total volume of water can be estimated by reading the amount of increased flow at the system meter during the period of water usage.

Testing of Newly-constructed Water Mains	1. Calculate the volume of water the new water main can hold. Require the contractor/developer to notify the Town each time they fill a water main.
Cleaning of Wastewater Pumping Station	1. Estimate the flow rate of the cleaning device and keep track of the amount of time it is in use.
Unmetered Connections	1. Place meters on these services. 2. Estimate usage based upon the number of people within each household.

As stated previously, the Town's water storage capacity consists of 500,000 gallons within two separate elevated storage tanks and one ground level tank. Analyzing the sufficiency of existing storage requires a judgment involving the quantity and duration of fire flow. Given the nature of development in the Town of residential, multi-family, and small commercial (no industry), a duration of two hours was used. An analysis of the storage volume given the existing and projected population is provided below in Table WRE-5.

Water Storage Analysis
Table WRE-5

YEAR	POP	1 EDU's	2 Average Daily Demand (GPD)	3 Equalizing Storage (GAL)	4 Fire Flow (GAL)	5 Emergency Reserve (GAL)	6 Required Storage (GAL)	7 Existing Storage (GAL)	8 Storage Surplus or Deficit
EXISTING	4,100	1,513	297,748	81,583	242,600	108,061	432,244	500,000	67,756
2020	4,575	1,713	329,283	90,233	256,080	115,437	461,750	500,000	38,250
2025	5,044	1,911	378,783	103,786	268,628	124,138	496,552	500,000	3,448
2030	5,378	2,068	418,033	112,349	277,218	129,855	519,423	500,000	-19,423

Column 1 – Assumes growth at rate from Table WRE-1.

Column 2 – From WRE-1

Column 3 – Equalizing storage is 20% of maximum daily demand – Maximum daily demand is assumed at 1.37 x average daily demand.

Column 4 – Fire Flow at 2 hours duration and G=1020 P ½ (1-.01(P ½)) where G = GPM and P = population in thousands

Column 5 – Emergency Reserve is 25% of total storage.

Column 6 – Required Storage is Column 3 + 4 + 5

The analysis indicates, in year 2030, a deficit of 19,423 gallons will exist. Prior to the end of the planning period of year 2030, additional storage of approximately 20,000 gallons will be needed. Additional storage to meet this deficit should be constructed by 2026.

WASTEWATER TREATMENT ASSESSMENT

The Town of Indian Head is currently served by the Town's 500,000 gallon per day wastewater treatment plant located on Hailey Road within the Town limits. The plant was recently renovated to achieve enhanced nutrient removal (ENR) capability funded by a grant from MDE. The plant consists of a four stage bardenpho process with flow equalization, sludge digestion, and discharging to Harrison Cut, which flows to Mattawoman Creek and the Lower Potomac River and the Chesapeake Bay. The plant is designed and permitted to limit effluent loading to 6,088 lbs/year of nitrogen and 457 lbs/year of total phosphorus. Thickened sludge is hauled to the County's Mattawoman Wastewater Treatment Plant where it is dewatered and disposed. Sludge production is estimated to be 850 lbs/year. The plant consists of influent flow equalization followed by grit removal, aeration/reactor tanks, secondary clarifiers, sludge thickening and holding tank, effluent filters, alum and methanol chemical feed systems, gaseous chlorination/dechlorination for disinfection, and post aeration.

The Town of Indian Head's wastewater collection system, originally built in the 1930's, consists of gravity sewer lines ranging in size from 6-inches to 12-inches, force mains from 4-inches to 6-inches, and five pumping stations. There are no septic systems located in the Town of Indian Head with the exception of two houses on Mattingly Avenue. These two houses are planned to connect to the sewer system in the near future. These houses are included in the potential additional EDUs of development described on the following page. There are also approximately 12 grinder pumps with 2-inch low pressure sewer lines located on Parker Harley Drive and Strauss Avenue in the Teates Subdivision and Traverse Road in Woodland Village. The Knotts Subdivision, located at the east end of Town and north of Route 210, consists of small diameter gravity sewer 4-inches to 6-inches in size at minimum slope and septic tanks at each house to remove solids. This project was constructed in the early 1990's as an innovative and alternative system funded by EPA and MDE.

The central pump stations are located in Potomac Woods, Strauss Avenue in the Teates subdivision, Mattawoman Woods, Knotts Subdivision and the Riverwatch Subdivision. The Potomac Woods and Mattawoman Woods pump stations are small suction lift stations with 4-inch force mains designed for 100 gpm. The Teates and Riverwatch pump stations are duplex submersible stations with 4-inch force mains designed for 100 gpm. The Knotts Subdivision is a 200-gpm duplex submersible station with a soil odor control system and 6-inch force main. The Knotts Subdivision and Riverwatch pump stations are equipped with emergency generators.

The Town has developed plans and received permits to construct a sixth pump station on Davis Drive as part of a larger plan to replace all water and sewer lines in the subdivision in order to increase size, reduce maintenance, and reduce inflow and infiltration. The pump station, when completed, will be a suction lift, 100 gpm pump station with an emergency generator and 4-inch force main. The projected cost for these improvements is estimated at $700,000.

The existing collection system conveys significant wet weather flows. A 6:1 ratio of peak hour flow to average flow has been recorded at the treatment plant. Maximum month flows of 0.62 mgd has been recorded in December 2003 and a peak hour flow of 2.9 mgd in January 2003. In order to reduce the

possibility of upsets and sewer overflows, a flow equalization basin was added to the treatment plant in the 2008 ENR upgrade.

Based on daily flows recorded from the Town and MDE, the average of flows for the past three years is 394,300 gpd. The plant is designed for 500,000 gpd. As discussed in the water analysis, the quantity of flows estimated from development approved but not yet constructed is 500 gpd. Action to correct inflow and infiltration is needed and will consist of a thorough inflow and infiltration analysis of the collection system, design, and construction of the improvements followed by a post construction analysis period of one year to evaluate the effectiveness of the corrective measures. With the average day billed water demand of 279,283 GPD and the 3-year average of sewer treatment at 394,300 GPD, a reserve of 115,000 GPD for inflow and infiltration is accounted for in the 3-year average wastewater flow. This is the approximate difference in the 2002 and 2003 flows (dry year to wet year).

With this in mind, the remaining capacity of the existing plant for future development is as follows:

Remaining Sewer Capacity
Table WRE-6

Existing Design Capacity	500,000 gpd
Potential development flows	500 gpd
Existing 3-year average flow	394,300 gpd
Net remaining capacity for future development	105,200 gpd

The remaining capacity of 105,200 gpd equates to 420 new equivalent dwelling units in addition to the 500 GPD previously committed, using 250 GPD/EDU from the MDE Design Guidelines. Based on growth projections in Table WRE-1, these taps will be exhausted by year 2026. Once the inflow and infiltration are effectively reduced, additional capacity should be available depending on the effectiveness of the reduction program. Even with capacity generated by reducing inflow and infiltration, additional capacity needs must be generated prior to year 2026 from increasing the existing plant capacity or pumping flow to the County's Mattawoman treatment plant. Once the plant reaches 80% of design capacity, MDE requires a wastewater capacity management study to be performed.

STORMWATER MANAGEMENT ASSESSMENT

The Town of Indian Head is located between the Potomac River on the north, Mattawoman Creek on the south, and the NSASP and NSFIH on the west. A portion of the Town along the river and creek are within the Chesapeake Bay Critical Areas, and therefore are, subject to special development regulations, including limitations on lot coverage, forest removal, and disturbance to slopes steeper than 15 percent. Future development within the Town will in most part consist of infill and redevelopment. Future annexation to the east to some extent is envisioned along Route 210.

The Town currently enforces the County's Forest Conservation Ordinance and Maryland's 2000 and 2007 Stormwater Management Design Guidelines. The Town needs to encourage environmental site design to the maximum extent possible as proposed by the State design guidelines. Although the majority of the Town was developed prior to the implementation of these ordinances, future development will be guided by these regulations. Future plans by the Town to assist with reducing sediment loadings to the Bay include the construction of a living shoreline along the Potomac River in conjunction with a planned boardwalk.

Stormwater runoff from the Town of Indian Head drains to the north to the Potomac River and to the south to Mattawoman Creek, with the drainage basin being effectively divided by Route 210. In 2004, MDE established a Total Maximum Daily Load (TMDL) waste load allocation for nitrogen and phosphorous for Mattawoman Creek. The point source allocation (including urban nonpoint source discharges as well as wastewater treatment plants and other point sources) is 85,784 lb/year for nitrogen and 11,786 lb/year for phosphorous. Additionally, during the months of May through October, a point source allocation of 1,306 lb/month for nitrogen and 404 lb/month for phosphorous is in place for Mattawoman Creek. Based upon the data presented in the following section, the Town does not exceed the point source allocation for nitrogen or phosphorous. The total annual nutrient loading contribution from the Town to Mattawoman Creek is approximately 2.5% of the annual TMDL of nitrogen and 1.7% of the annual TMDL for phosphorous. There is no current TMDL waste load allocation for the area of the Town draining to the Potomac River, however, the Town recognizes the importance of minimizing nitrogen and phosphorous runoff to the waters of the Chesapeake Bay.

A summary of impervious and pervious land cover by drainage area is presented below. The percent impervious values for the zoning categories below are based on the 2006 "TMDL Implementation Guidance for Local Governments." The typical single-family lot in the R-1 and R-2 category is at least 1/3-acre and often ½-acre or larger; ½ acre was used as a conservative value, as pervious urban area contributes larger quantities of nitrogen and phosphorous runoff (see analysis in the following paragraphs).

Current Land Cover
Table WRE-7

Zoning	Usage/ Estimated Land Cover	Drainage Area	Total Area (acres)	Pervious Area (acres)	Impervious Area (acres)
GC	Commercial/ 85% Impervious	Potomac	8.06	1.21	6.85
		Mattawoman	30.10	4.51	25.59
Mixed Use/ or Commercial	Commercial/ 85% Impervious	Potomac	99.61	14.92	84.69
		Mattawoman	36.13	5.42	30.71
R-1 R-2	½ acre-Residential/ 25% Impervious	Potomac	164.46	123.34	41.12
		Mattawoman	395.58	296.68	98.90
R-M	< 1/8 acre-Residential/ 65% Impervious	Potomac	10.06	3.52	6.54
		Mattawoman	49.55	17.47	32.08
TOTAL AREA		Potomac	282.19	142.99	139.20
		Mattawoman	511.36	324.08	187.28

Nonpoint source nitrogen and phosphorous loading values based on land cover were determined based on the most recent (2007) Potomac River, Maryland watershed data in the "Watershed Model Output Data" available from the Chesapeake Bay Program. The total nitrogen and phosphorous loading for each land use in the watershed were divided by the total acreage for each use, with the resulting values being the nitrogen

and phosphorous loading in pounds per acre per year for each type of land use. Based on the Watershed Model Output Data classifications, land use within the Town of Indian Head is virtually all either "Pervious Urban" or "Impervious Urban," with proportions equivalent to the pervious and impervious percentages as shown in the preceding table.

Additional loading to Mattawoman Creek comes from the two existing septic systems on Mattingly Avenue. Utilizing the formula found on Page 72 of the MD Water Resources guidance document, the total nitrogen loading for the two residences is 21.74 lbs/year.

The table below summarizes current nitrogen and phosphorous loading by drainage area based on the previously determined loading values and land cover.

Current Non-Point Source Loading
Table WRE-8

Cover/Source	Drainage Area	Area (acres)	Average Nitrogen Loading (lbs/acre year)	Average Phosphorous Loading (lbs/acre year)	Nitrogen Loading (lbs/year)	Phosphorous Loading (lbs/year)
Pervious Urban	Potomac	142.99	8.60	1.00	1,229.71	142.99
	Mattawoman	324.08			2,787.09	324.08
Impervious Urban	Potomac	139.20	6.66	0.41	927.07	57.07
	Mattawoman	187.28			1,247.28	76.78
Septic Systems	Potomac				-	-
	Mattawoman				21.74	-
Potomac Total Non-Point Loading					2,156.78	200.06
Mattawoman Total Non-Point Loading					4,056.11	400.86

The potential annexation of the NSASP and NSFIH and the areas of Charles County to the east of the Town will add additional area to the Town, as shown in the following table:

Land Cover from Future Annexations
Table WRE-9

Zoning/ Usage	Usage/ Estimated Land Cover	Drainage Area	Total Area (acres)	Pervious Area (acres)	Impervious Area (acres)
NSASP & NASIH	55% Impervious[1]	Potomac	1,450	652.50	797.50
		Mattawoman	850	382.50	467.50
	Forest[1]	Potomac	300	300	-
		Mattawoman	900	900	-
R-2	½ acre-Residential/ 25% Impervious	Potomac	17.37	13.03	4.34
		Mattawoman	52.36	39.27	13.09
Mixed Use	Commercial/ 85% Impervious	Potomac	-	-	-
		Mattawoman	32.31	4.85	27.46
OS	Forest	Potomac	-	-	-
		Mattawoman	199.28	199.28	-
TOTAL AREA		Potomac	1,767.37	965.53[2]	801.84
		Mattawoman	2,034.95	1,525.90[3]	509.05

[1]*Impervious cover for developed areas of NSASP and NSFIH estimated from existing aerial photography and public descriptions of base provided by the Department of the Navy (DON). Undeveloped areas treated as forest cover.*

[2]*665.53 acres "Pervious Urban", 300 acres "Forest"*

[3]*426.62 acres "Pervious Urban", 1,099.28 acres "Forest"*

The additional nonpoint source loading from the annexed areas is calculated in the following table:

Non-Point Source Loading from Future Annexations
Table WRE-10

Cover	Drainage Area	Area (acres)	Average Nitrogen Loading (lbs/acre year)	Average Phosphorous Loading (lbs/acre year)	Nitrogen Loading (lbs/year)	Phosphorous Loading (lbs/year)
Pervious Urban	Potomac	665.53	8.60	1.00	5,723.56	665.53
	Mattawoman	426.62			3,668.93	426.62
Impervious Urban	Potomac	801.84	6.66	0.41	5,340.25	328.75
	Mattawoman	509.05			3,390.27	208.71
Forest	Potomac	300	1.37	0.02	411.00	6.00
	Mattawoman	1,099.28			1,506.01	21.99
Potomac Total Non-Point Loading					11,474.81	1,000.28
Mattawoman Total Non-Point Loading					8,565.21	657.32

It is planned to connect the two houses on Mattingly Avenue with septic systems to the public sewer and abandon the septic systems prior to the annexations. Adding the existing loading to the loading from the proposed annexations and subtracting the septic nitrogen loading, the total future non-point source loading to the Potomac River from the Town will be 13,631.59 lb/year of nitrogen and 1,200.34 lb/year of phosphorous, and the total future loading to Mattawoman Creek will be 12,599.58 lb/year of nitrogen and 1,058.18 lb/year of phosphorous. It should be noted, however, that the areas to be annexed are all existing single-family residential or commercial areas, environmental preserve, or NSASP and NSFIH uses, and the annexation will not change the land usage in those areas except for possible future infill. Thus, the net nitrogen and phosphorous loading on the Potomac River and Mattawoman Creek should not increase due to the annexations. Any development on the NSASP and NSFIH would be at the discretion of the DON and is beyond the influence of the Town.

The remainder of the projected population growth will occur as infill within the residential or mixed-use zoned areas of the Town. The infill and associated new infrastructure will result in a net increase in impervious cover, which based on the historical trends in the Watershed Model, should decrease nitrogen and phosphorous loading. Thus, the values calculated above represent probable maximum non-point nitrogen and phosphorous loading for the projected growth period. Future development trends along with implementation of best management practices in stormwater design should help reduce the ultimate loadings to the Potomac River and Mattawoman Creek from the current and future areas of the Town.

The Town currently discharges treated wastewater to Harrison Cut under NPDES Permit #04-DP-0590. An ENR upgrade has been made to the Town's treatment plant in order to comply with the new discharge limits that went into effect on March 1, 2010 (4 mg/L nitrogen and 0.3 mg/L phosphorous). The discharge limits will result in a maximum discharge of 6,088 lbs/year of nitrogen and 457 lbs/year of phosphorous at the existing maximum capacity of 500,000 GPD. Projected future point-source discharge quantities are tabulated below. Testing of the plant effluent after the ENR upgrades were completed shows effluent nitrogen and phosphorous concentrations below the permit limits, therefore, the values below represent a maximum loading.

Current and Projected Point Source Loading
Table WRE-11

YEAR	Wastewater Flow (GPD)	Nitrogen (lbs/year)	Phosphorous (lbs/year)
2010	337,250	4,104	308
2015	394,300	4,803	360
2020	449,300	5,999	410
2025	493,800	6,008	451
2030	533,050	*6,088	*457

**Maximum allowed by permit*

The following table presents projections of combined non-point and point source loading for the entire planning period. The non-point loading from the annexation areas is tabulated in a separate column as no schedule for annexation has currently been developed. The most conservative assumption for non-point loading has been adopted that nitrogen and phosphorous loading will not be decreased by increases in impervious area. As discussed above, actual non-point loading is likely to be lower, but it is difficult to

quantify the amount of impervious increase to due to infill development. For simplicity the table assumes that the septic systems on Mattingly Avenue will abandoned.

Current and Projected Total Non-Point and Point Source Loading
Table WRE-12

YEAR	Drainage Area	Non-Point Source N (lbs/yr)	Non-Point Source P (lbs/yr)	Point Source N (lbs/yr)	Point Source P (lbs/yr)	Total N (lbs/yr)	Total P (lbs/yr)	Total N with Annexed Areas (lbs/yr)	Total P with Annexed Areas (lbs/yr)
EXISTING	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,056	401	4,042	303	8,098	704	16,663	1,361
2010	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	4,104	308	8,138	709	16,703	1,366
2015	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	4,803	360	8,837	761	17,727	1,442
2020	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	5,999	410	10,033	811	18,923	1,491
2025	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	6,008	451	10,042	852	18,932	1,532
2030	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	6,088	457	10,122	858	19,012	1,538

As discussed above, the Town does not exceed the point source allocation for nitrogen or phosphorous, and will not do so during the planning period. The current total annual nutrient loading contribution from the Town to Mattawoman Creek is approximately 2.5% of the annual TMDL of nitrogen and 1.7% of the annual TMDL for phosphorous. At the end of the planning period, assuming the TMDL limits do not change, the total annual nutrient loading contribution from the Town to Mattawoman Creek will be approximately 12.4% of the annual TMDL of nitrogen and 7.6% of the annual TMDL for phosphorous, or 22.4% of the annual TMDL of nitrogen and 13.2% of the annual TMDL for phosphorous with all of the potential annexation areas included.

WATERSHED IMPLEMENTATION PLAN

In December 2010, the U.S. Environmental Protection Agency (EPA) published the Chesapeake Bay Total Maximum Daily Load (i.e., the Bay TMDL). The Bay TMDL sets limits on the number of pounds of nitrogen, phosphorus, and sediment to be discharged within the various Chesapeake Bay "basins" while still allowing the Bay to meet water quality standards. EPA apportioned the TMDL among the Bay states and the District of Columbia (called the Bay "jurisdictions"), giving those allocations, or "target loads," (targets) which represented the portion of the nitrogen, phosphorus, and sediment that jurisdiction could discharge. These targets included 2017 "Interim" and 2025 "Final" targets, with the goals of having sufficient pollution control measures in place by 2017 to meet the Interim target of 60 percent of the pollutant load reductions and to have additional measures in place by 2025 to meet the Final target of 100 percent of the reductions. EPA expected each jurisdiction to develop Watershed Implementation Plans (WIPs), which described in detail the jurisdiction's strategy to meet their targets.

Maryland published its Phase I WIP in December 2010 and submitted the first draft of its Phase II WIP in December 2011. As part of the Phase II WIP process, the Maryland state agencies developing the WIP had further subdivided the target loads received from EPA and had assigned them in a number of ways, including by major basin and also by responsible entity (local, state, or federal government) and "source sector" (wastewater, urban stormwater, septic, agriculture, forest, air). The Phase II WIP development process also engaged local partners, including county governments, to develop local strategies to meet these targets. County governments provided narrative strategies and Two-Year Milestones that were intended to document progress towards meeting targets. Some counties also submitted a detailed accounting of their strategies through a tool called the Maryland Assessment and Scenario Tool, or MAST. If a county chose not to submit a BMP scenario through MAST (as was the case for Charles County), a scenario was developed for that county based on generalized assumptions, and that scenario was included in the Phase II WIP.

Charles County issued its Watershed Implementation Plan Strategy in February 2013. For urban stormwater, the proposed strategies include stream restoration to retrofitting existing stormwater ponds with more efficient stormwater management to Environmental Site Design (ESD) to reduce loads. Many of these strategies involve the need to work on private land, and it will be critically important to find and develop incentives for private landowners to participate in the process of reducing loads from private land.

For Indian Head, the Municipal Separate Storm Sewer Systems program overlaps the WIP strategies and serves as the primary tool for reducing nutrient and sediment loads to the Chesapeake Bay.

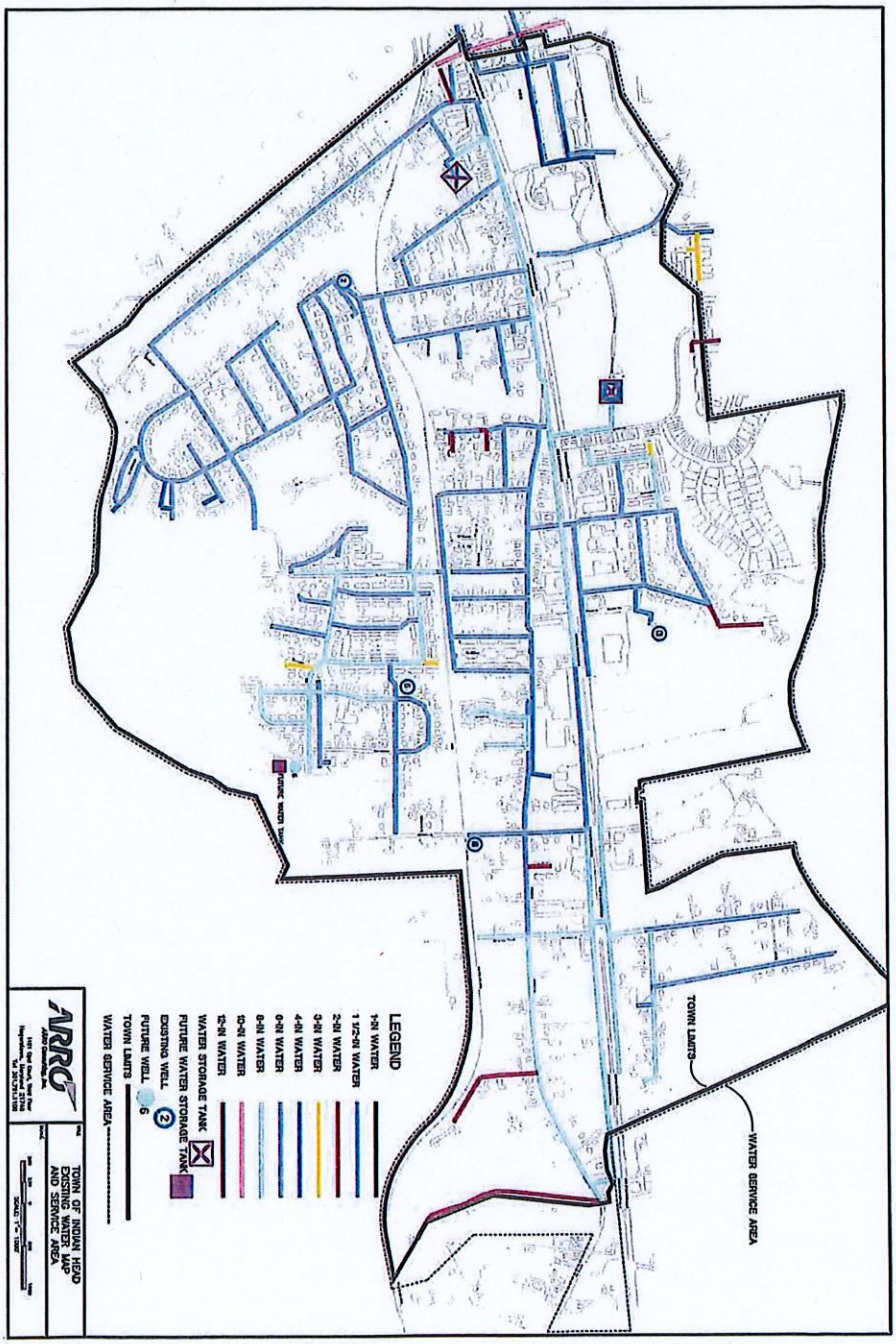
MUNICIPAL SEPARATE STORM SEWER SYSTEMS PROGRAM (MS4)

The Maryland Department of the Environment, Water Management Administration (MDE/WMA) adopted a general permit to control municipal storm drain system discharges under Phase II of the National Pollutant Discharge Elimination System (NPDES) in 2003. The Town of Indian Head is now covered under the general permit. Since the general permit expired in 2008, MDE is in the process of reissuing a new permit, which when adopted, will most likely include additional requirements to reduce nutrient and sediment loadings from the Town's Storm Sewer System.

The Town's Phase II MS4 NPDES permit requires the implementation and ongoing management of six (6) minimum control measures which are:

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping

The Town continues to improve on its compliance with these control measures and issues an annual report to MDE documenting the status of the Town's commitment to these requirements.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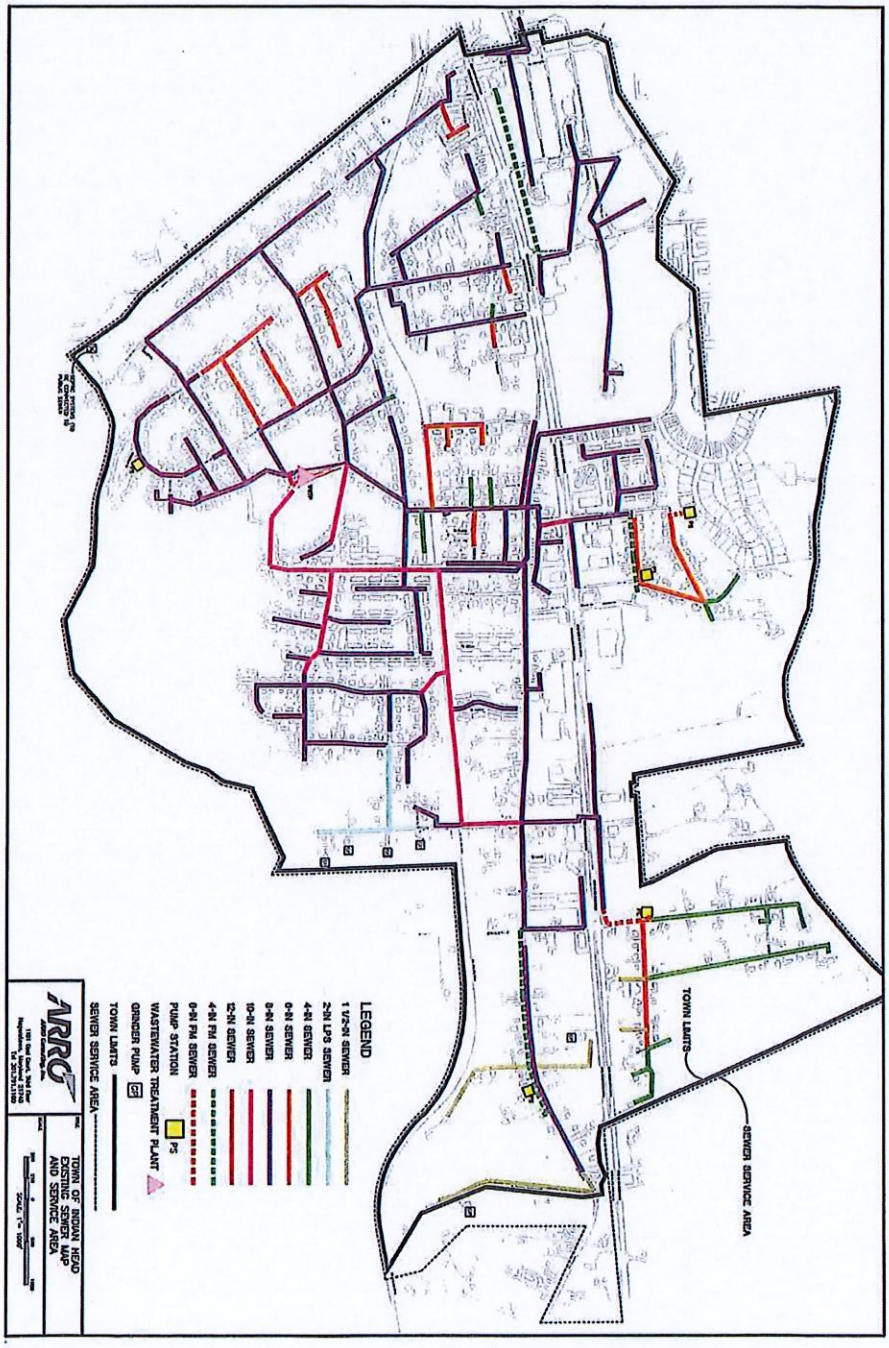
TOWN LIMITS
WATER SERVICE AREA
TOWN OF INDIAN HEAD
EXISTING WATER MAP
AND SERVICE AREA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PUMP STATION
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WASTEWATER TREATMENT PLANT
GRINDER PUMP
TOWN LIMITS
SEWER SERVICE AREA
TOWN LIMITS
SEWER SERVICE AREA
TOWN OF INDIAN HEAD
DISTRICT MAP
AND SERVICE AREA

MINERAL RESOURCES

MINERAL RESOURCE GOAL

PROHIBIT MINING ACTIVITIES WITHIN THE TOWN AND WORK WITH THE COUNTY AND STATE TO PROHIBIT MINING WITHIN THE IMMEDIATE VICINITY OF THE TOWN. LIMIT AND STRICTLY CONTROL MINING ACTIVITIES WITHIN THE MATTAWOMAN WATERSHED IN ORDER TO PRESERVE ITS UNIQUE CHARACTERISTICS AND ENVIRONMENT.

POLICIES AND IMPLEMENTATION STRATEGIES

Policy MR.1: Prohibit mining activities within the Town.

Implementation Strategies:

1. Adopt language within the Zoning Ordinance that prohibits mining activities within the incorporated limits of Indian Head.
2. Coordinate with Charles County to develop a protection zone within the immediate area of Indian Head where mining activities will not be allowed in order to protect the community.
3. Work with other private and public groups to protect Mattawoman Creek.

INTRODUCTION

Sand and gravel deposits are the most important mineral resources in Charles County and have become extremely important for use in construction since the County began to urbanize in the late 1970's.

The main deposits lie primarily in the terrace regions of the Potomac, Port Tobacco, and Wicomico Rivers. The Maryland Geological Survey has produced a map of the County, which shows the thin deposits of sand and gravel (between 10 to 20 feet thick) are present within the Town at the higher terrace elevations, which lie above 100 feet.

In general, the deposits within the Town are of poor quality and limited quantity to be viable as a marketable venture. Further, the Town is approximately 85 percent developed, which indicates that mining is not feasible in any practical sense of the word.

Mining, if it were allowed, would seriously impact the quiet enjoyment of the Town and cause severe disruption of the residential and commercial use as well as potentially impact the quality and yield of the Town's wells on which the Town relies as its sole source of potable drinking water.

DEVELOPMENT REGULATIONS

PURPOSE

Land development regulations are adopted to protect and enhance the public welfare and safety. The Zoning Ordinance and Subdivision Regulations provide order, consistency, and compatibility of development throughout the Town. The Land Use Regulations are intended to implement the objectives or goals of the Comprehensive Plan which include:

1. Enhance an "old town" feel in the Town through the appropriate use of mixed-use zoning coupled with the retention of existing residential areas.

2. Promote the development of pedestrian-friendly residential areas and maintain a diversity of housing types available to all income levels. Promote the addition of elderly housing opportunities and retirement facilities.

3. Develop a strategy to foster economic development including a tourism industry around the natural resources and other unique opportunities for the Town.

4. Protect Sensitive Areas and implement the goals, objectives, and requirements of the Town's Critical Area Plan.

RECOMMENDATION FOR LAND DEVELOPMENT REGULATIONS

The Town of Indian Head has implemented a Zoning Ordinance and Subdivision Regulations, which provide guidance and requirements for land development. To provide flexibility in design, the Town Center Mixed Use regulations provide less restrictive regulations regarding lot size and building setbacks than other zoning districts. This is intended to encourage innovative design and allow the use of "clustering" development to preserve natural sensitive features.

The Town is currently reviewing revisions to the zoning and subdivision regulations as well as the Comprehensive Plan to better streamline the approval process, eliminate conflicts between regulations, and encourage innovative design.

Other regulations that impact development and have been adopted by the Town include:

- Floodplain Regulations
- Forest Resource Conservation
- Stormwater Management

These supplemental regulations were adopted and based on the State Model Ordinances.

Within the areas designated for growth and/or redevelopment, the Town's development regulations should foster economic development through the use of innovative techniques. Given that the areas for growth

are primarily mixed-use zoning, flexibility in the design is provided within the zoning ordinance to encourage innovative design. Future revisions to the land use regulations should include innovative techniques to encourage economic development.

Streamlining, to the extent practical, of development applications should be encouraged with the land use regulations. Currently, the land use regulations for site plan and subdivision review and approval allows for an expedited review if significant economic benefits may be realized.

The policies and implementation strategies can be found within the Land Use Element of this plan.

AREAS OF CRITICAL CONCERN

CHESAPEAKE BAY CRITICAL AREA PROGRAM

The Chesapeake Bay Critical Area Law requires the Town of Indian Head to adopt and implement a Critical Area Management Program and Ordinance to protect the water quality and wildlife habitats of the Bay and its tributaries. The State Critical Area Commission reviews the program and ordinance every six years. All development activity within the Critical Area must comply with criteria affecting development density, water dependent uses, buffers from waterways, and protections for natural shorelines and wildlife habitats.

Approximately a quarter of the land in Indian Head is contained within the Critical Areas along the Potomac River to the north and Mattawoman Creek to the south. The following areas are viewed as being of Critical State Concern.

MATTAWOMAN CREEK WATERSHED

The Mattawoman Creek extends 1.2 miles through the Town of Indian Head draining 400 acres of the Town. Tidal wetlands of the Mattawoman are essential nursery areas for numerous species of fish. The main stem and tributaries of the creek have been among the Potomac basin's most important spawning waters, however, marked declines in the tidal fish community have been recently documented.

In 2003 the US Army Corps of Engineers completed a watershed management plan for Mattawoman Creek in Charles County. The plan was developed in response to concerns that development within the Development District had the potential to significantly affect Mattawoman Creek resources, with water quality and aquatic biota the primary concerns. This management plan demonstrated the most effective (and least expensive) way to maintain water quality and ecological benefits is to protect the Mattawoman Creek Stream Valley to top of slope. The delineation of the Stream Valley was completed by the Maryland Department of Natural Resources (MDNR) in 2007.

Due to the Mattawoman beginning to show signs of stress, but still being at a point of recovery, an interagency taskforce lead by MDNR issued its 2012 final recommendations in a report titled, "The Case for Protection of the Watershed Resources of Mattawoman Creek." This report emphasizes the value of protecting the stream valley in order to maintain a functional ecosystem.

POTOMAC RIVER WATERSHED

Approximately 4,500 feet of shoreline on the Potomac River exists along the northern boundary of the Town of Indian Head. The Interstate Commission on the Potomac River Basin (ICPRB) is an interstate compact commission established by Congress in 1940 to help the Potomac Basin states and the federal government to enhance, protect, and conserve the water and associated land resources of the Potomac River basin through regional and interstate cooperation.

In 1998, the Potomac River was designated one of the first 14 American Heritage Rivers in a program designed to streamline federal participation in local efforts to protect and enhance the natural, cultural, and economic resources inherent in the waterways.

The implementation policies and goals are contained within the Sensitive Areas Element of this plan.

IMPLEMENTATION

INTRODUCTION

There are several sections of the Comprehensive Plan that have implementation strategies. To avoid the old idea of a Comprehensive Plan being placed on a shelf to pick up dust, a Plan Implementation section has been included. Not only will all strategies be placed in a logical order, the Planning Commission may make recommendations to the Mayor and Council relative to what priority the specific strategy should have. Determinants of prioritization are: budget, grant availability, logical sequence of accomplishing one priority before the other, and timing of the need. Certainly, there are other reasons to assign one priority before the other, however, these will surface at the time of prioritization.

There should be three levels of priorities. The first is Priority 1: those items that are short term. Priority 2 are those items that should be done within approximately the next ten years. Priority 3 are those items that should be completed by the end of the planning period in 2030. However, it is recognized that the priorities may change with the ten (10) year update of the Comprehensive Plan.

Obviously, the highest priorities will be completed first. In addition, each priority will be assigned as tasks for an appropriate agency, staff, jurisdiction, or several entities. Some tasks will require a partnership between entities, however, the main entity listed will manage the completion of the project.

Following are abbreviations that will be placed in the column next to a priority that represents the entity that is responsible for completing the priority. Additions may be made to this list.

DPW	Department of Public Works
ENG	Town Engineer
CC	Charles County
FIN	Town Treasurer
M&C	Mayor and Council
MD	State of Maryland
PC	Planning Commission
TM	Town Manager
ZA	Town Zoning Administrator

Policy and Implementation Strategy		Priority	Responsibility
Policy LU.1:	Delineate sensitive areas as required by the 1992 Economic Growth Resource Protection and Planning Act, and develop regulations, which protect these resources from inappropriate uses.	1	ZA
Policy LU.2	Continue the implementation of the Town's Critical Area Program through the site plan and zoning ordinance provisions.	1	PC
Policy LU.3	Study the existing residential stock in Town and develop a policy, which provides a balanced approach to the types of future residential construction.	2	PC
Policy LU.4	Support a pedestrian friendly environment for new and existing development by: requiring or supporting sidewalks/bicycle routes through the development and connectivity with existing routes; open space and parkland to encourage neighborhood gatherings and activities; and community buildings to facilitate community-oriented meetings and activities.	1	M&C ZA
Policy LU.5	Develop regulations and make appropriate zoning map amendments necessary to facilitate opportunities for the construction of elderly housing, which include allowances for retirement homes and nursing facilities.	1	ZA
Policy LU.6	Provide ample mixed-use areas along Route 210 to support the continued development and redevelopment of mixed-use activities with coordination from the Department of the Navy (DON).	1	PC
Policy LU.7	Retain the ambiance of existing residential areas set back from Route 210 and protect them from the negative characteristics such as noise, odors, and traffic resulting from future development and redevelopment activities.	2	PC
Policy LU.8	Develop flexible building regulations that promote innovative design, cost saving techniques, and which expedite the review and construction process.	1	TM
Policy LU.9	Provide and promote recreational opportunities, which will encourage tourists to visit the Town. Provide maximum access to the Potomac River and Mattawoman Creek within the Town limits. Encourage use of the Indian Head Rail Trail and extend the Boardwalk along the Potomac River and rail trail along the Mattawoman to the Town limits. Provide a pedestrian link among all these features.	1	M&C

Policy LU.10	Revise the zoning ordinance to encourage the development of tourism related facilities like bed and breakfast accommodations. Develop a Town theme and tourism logo, possibly based on some unique intertwining of water proximity, Navy history and Native American history that would draw visitors. Foster building of appropriate museums and staging of area wide cultural events.	1	ZA
Policy LU.11	Consider establishing a historic district overlay zone for certain areas of the Town to protect the character of the area and to foster the continuance of the area as a historically significant area.	2	PC
Policy EN.1:	Protect the 100-Year Floodplain from the adverse effects of development.	1	ZA
Policy EN. 2:	Development will be directed away from steep slopes.	1	ZA
Policy EN. 3:	The natural ecosystem and functions of the stream and stream buffers are preserved and enhanced and stormwater is managed to prevent degradation of streams.	1	ENG
Policy EN. 4:	Implement the provisions of the Chesapeake Bay Critical Area Overlay Zone ordinance through the permit review process to ensure that future development is consistent with the requirements of the adopted Town Program.	1	ZA
Policy MG.1:	Promote development of vacant property (infill) with the Town where infrastructure currently exists.		
Policy MG.2:	Promote a well-designed, walkable mixed-use development.		
Policy MG. 3:	Remove blighted development and promote redevelopment.		
Policy CF.1:	Develop new and improve existing park and recreational facilities to address deficiencies identified per 1,000 residents.	1	M&C
Policy CF.2:	Provide recreational, health, and social service programs for the Town's elderly and handicapped, and improve and increase recreational programs for the Town's children and teenagers.	1	M&C
Policy CF.3:	Provide increased and improved access to the Potomac River and to Mattawoman Creek.	1	TM
Policy CF.4:	Provide improvements and additions to the existing recreation complex.	2	M&C

Policy CF.5:	Ensure that there will be an adequate supply and storage of water to meet drinking water requirements and firefighting capabilities.	1	TM
Policy CF.6:	Eliminate inflow problems in order to better utilize and possibly increase the existing capacity of the sewer system.	1	M&C ENG TM
Policy CF.7:	Upgrade sewer collection facilities to ensure adequate flow carrying capacities and to prevent spills or overflows.	1	ENG
Policy CF.8:	Ensure that the Town has adequate and appropriate facilities and equipment to conduct its operations efficiently and effectively.	1	TM
Policy CF.9:	Actively participate in the joint DON/Community Partnership.	1	M&C
Policy CF.10:	Maintain and periodically evaluate a system of impact fees that will be charged to developers to compensate for facilities necessitated by new development or extensive redevelopment and to expand existing facilities.	1	M&C
Policy CF.11:	Continue to support the Indian Head Fire Department and Rescue Service and maintain the department within Town limits.	1	M&C
Policy H.1:	Conserve, rehabilitate, and revitalize existing housing.	3	M&C
Policy H.2:	Maintain the integrity of existing residential neighborhoods from incompatible adjacent land uses and further improve their appearance and viability as neighborhoods by adoption and enforcement of appropriate regulations.	1	PC M&C
Policy H.3:	Promote a variety of elderly care facilities, such as independent and assisted living accommodations.	2	PC
Policy H.4:	Provide adequate facilities and services necessary to maintain, rehabilitate, and encourage the development of new housing.	1	TM
Policy H.5:	Improve the overall appearance of the Town by encouraging visual improvements to existing structures, streets, and parking areas and by adopting design standards for new development.	1	M&C
Policy H.6:	Enhance the preservation of historic and cultural resources		
Policy ED.1:	Implement the strategic plan for economic development with short and long-term goals.	1	M&C

Policy ED.2:	Develop a five-year plan for tourism development based on the natural assets of the community.	2	TM
Policy ED.3:	Streamline regulatory mechanisms to encourage economic growth.	1	TM ZA
Policy ED.4:	Develop a program of public and private actions to improve the aesthetics of the Town.	1	M&C
Policy TN.1:	Develop and implement a design improvement program for the Maryland Route 210 corridor that maintains the smooth flow of traffic through the Town, but which also provides for the development of a more livable downtown area with more pedestrian opportunities for residents.	2	TM
Policy TN.2:	Provide an interconnected pedestrian and bicycle path network in the Town.	1	M&C PC
Policy TN.3:	Provide adequate parking areas in the commercial district.	1	M&C
Policy TN.4:	Reduce traffic congestion on Maryland Route 210. Encourage the development and use of car and van pools and the establishment of commuter bus service.	2	M&C
Policy WRE.1:	In order to minimize nutrient runoff and erosion, Best Management Practices including environmental site design to the maximum extent possible as required in the State Stormwater Management Design Guidelines and continue compliance with the MS4 program to reduce impacts from development are recommended to be completed. Such techniques include: a. Minimizing disturbance by clustering development and preserving open space b. Vegetative filter strips and other multi-functional landscape areas c. Roof top storage d. Micro-bioretention facilities e. Encourage the planting of street trees and landscaping to reduce temperature and enhance nutrient reduction f. Disconnection of rooftop and non-rooftop runoff g. Rainwater harvesting h. Drywells i. Rain gardens j. Other practices in the State Design Manual	1	PC

Policy WRE.2:	Initiate an inflow and infiltration study and subsequent sewer system rehabilitation program to reduce excessive inflow/infiltration and potentially increase the number of available sewer taps and reduce operational expenses associated with operating pumping stations and treatment plant.	1	ENG M&C
Policy WR.3:	Install emergency generator at the existing sanitary sewer pumping stations.	2	DPW
Policy WRE.4:	Consider the installation of permanent meters to continuously monitor sewer flows at strategic locations throughout the sewer system to monitor areas of excessive inflow and infiltration.	1	TM
Policy WRE.5:	Add Backflow Preventers to individual water services for existing customers to prevent potential contamination of water supply. (New development is required to do this as part of the existing Town's water and sewer policy).	1	TM
Policy WRE.6:	Refurbish or replace Well #5 to assist in providing sufficient water supply for the planning period.	1	TM
Policy WRE.7:	Develop a system for allocating and monitoring sewer and water taps.	1	ENG
Policy WRE.8:	Develop and place online new well, storage tank, and booster pump in the Patuxent Aquifer.	1	TM
Policy WRE.9:	Initiate coordination with DON to interconnect water supplies in event of emergencies.	2	M&C
Policy WRE.10:	Initiate a regional discussion with the County on the future of wastewater treatment for Indian Head and the surrounding communities.	1	M&C TM
Policy WRE.11:	Initiate a leak detection program to reduce unaccounted for water to less than 10%.	1	TM
Policy WRE.12	Initiate a wellhead protection study to identify the areas surrounding each well that could lead to contamination if pollution would enter the groundwater. Adopt a wellhead protection ordinance for source water protection.	1	ENG M&C
Policy MR.1:	Prohibit mining activities within the Town.	1	PC

APPENDIX A: RESOURCE MATERIALS

The following resources were used for background material to prepare the Comprehensive Plan. Many of the documents are bound separately and may be found at the Charles County Planning Department, Charles County Library or Indian Head Town Hall.

- Bryans Road – Indian Head Sub-Area Plan
- Charles County Comprehensive Plan Figure 6-1
- Sanitary Sewer Service Areas
- Charles County Comprehensive Plan Figure 6-2
- Planned Water Districts
- Dept. of State Planning Municipal Population Projections
- Charles County Department of Planning and Growth
- Management Review Letter
- Maryland Department of Planning Comment Letter
- Joint Land Use Study
- Economic Revitalization Strategy
- ULI TAP