

TOWN OF INDIAN HEAD

Honorable Edward W. Rice, Mayor

Honorable Dennis J. Scheessele, Vice Mayor

Honorable Margie A. Posey, Councilwoman

COMPREHENSIVE PLAN 2009



Adopted: February 1, 2010

COUNCIL FOR THE TOWN OF INDIAN HEAD

RESOLUTION NO: 02-01-10
INTRODUCED BY: Town Council
DATE INTRODUCED: February 1, 2010
DATE ADOPTED: February 1, 2010
DATE EFFECTIVE: February 1, 2010

A RESOLUTION FOR THE PURPOSE OF ADOPTING THE TOWN OF INDIAN HEAD 2009 COMPREHENSIVE PLAN.

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

WHEREAS, the policies and implementation strategies in the 2009 Comprehensive Plan for the Town of Indian Head, are based on the preferred scenario and background studies for water, sewer, transportation, economic development, housing and environment; and

WHEREAS, the Mayor and Town Council have determined that it is in the best interest of the Town to adopt the 2009 Comprehensive Plan recommended by the Planning Commission as amended by the Mayor and the Town Council; and

WHEREAS, the 2009 Comprehensive Plan shall constitute a general plan for the Town of Indian Head setting forth goals and a guide for future development. The adoption of the 2009 Comprehensive Plan shall not be construed as approval of individual projects which may be recommended therein, and the Council shall reserve to themselves the right to consider, debate, oppose, or support specific actions that may come before them that are intended to implement specific elements of this plan;

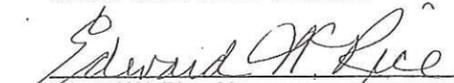
NOW THEREFORE, BE IT HEREBY RESOLVED by the Town Council of Indian Head, Maryland, that:

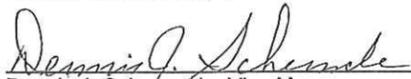
Section I. The document hereby attached and known as the "Town of Indian Head Comprehensive Plan" is hereby adopted.

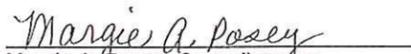
Section II. Be it further resolved that all resolutions or parts of resolutions in conflict herewith be and the same are hereby repealed to the extent of such conflict.

Section III. This resolution shall be in full force and effective on the 1st day of February 2010.

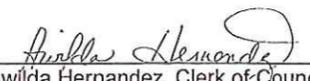
INDIAN HEAD TOWN COUNCIL


Edward W. Rice, Mayor


Dennis J. Scheesséle, Vice Mayor


Margie A. Posey, Councilwoman

ATTEST:


Awilda Hernandez, Clerk of Council

2-1-10
Date

ACKNOWLEDGEMENTS

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Honorable Margie A. Posey, Councilwoman

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Assistance provided by ARRO Consulting, Inc.

INDIAN HEAD COMPREHENSIVE PLAN ORGANIZATION

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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 is directed at revitalizing the Town and creating new and innovative residential and business development opportunities.

The State mandates and eight visions have been incorporated into the Town Comprehensive Plan. The visions are as follows:

1. *Development is concentrated in suitable areas;*
2. *Sensitive areas are protected;*
3. *Growth is directed to existing population centers and resource areas are protected;*
4. *Stewardship of the Chesapeake Bay and the land is a universal ethic;*
5. *Conservation of resources, including a reduction in resource consumption, is practiced;*
6. *To assure the achievement of the above economic growth is encouraged and regulatory mechanisms are streamlined;*
7. *Adequate public facilities and infrastructures under the control of the County or municipal corporation are available or planned in areas where growth is to occur; and*
8. *Funding mechanisms are addressed to achieve these visions.*

The Comprehensive 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, and lastly, it satisfies state requirements for a new Comprehensive Plan.

Since the Comprehensive 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 Comprehensive Plan depends on the Town Council and the public to make it work. It should be remembered that the Comprehensive 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 this plan.

LEGAL BASIS

Article 66B of the Annotated Code of Maryland 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 legislation requires all jurisdictions to review and update such Plan at intervals of no more than six years.

The "Seven Visions" identified in the Maryland Economic Growth, Resources Protection, and Planning Act of 1992 must, also, be incorporated into the plan. However, as a result of year 2000 amendments there are eight visions to be incorporated.

Article 66B of the Annotated Code of Maryland
Planning and Zoning Enabling Act is the State's preeminent planning law. It provides for jurisdictional power for local land use and growth management decisions.
House Bill 1141 requires a Municipal Growth Element in all municipal comprehensive plans and a Water Resources Element in all local government comprehensive plans.

PLAN UPDATE PROCESS

During the last year, the Town of Indian Head has been working diligently to define the characteristics of the Town they would like to take into the next decades. This Plan reflects interviews, work sessions by the elected officials and the Planning Commission; and, sets a positive course for Indian Head over the next twenty 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 2009 Indian Head Comprehensive Plan has been prepared with revisions and additions to the adopted 1997 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 1997. It is based on Planning Commission and Mayor and Council work sessions; numerous interviews with elected officials, community service providers, County and Town employees; individual and joint 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 Charles County's Comprehensive Plan, Comprehensive Water and Sewerage Plan, and other documents as referenced in Appendix A.

OVERALL GOALS OF THE PLAN

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

1. To insure that future growth is reflective of the desires of its citizens.
2. To enhance the relationship between the Town and the Navy and to provide the basic support services necessary to maintain the viability of the Navy'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.
 - f. Promotion of public safety.

House Bill 1141 requires municipalities to include two new elements in their Comprehensive Plan: the Municipal Growth Element and the Water Resources Element, which are incorporated in this Plan.

The Municipal Growth Element requires a far more detailed and quantitative analysis of the municipality's anticipated growth than has been required in past Comprehensive Plans. It requires coordination between municipal and county representatives before the Comprehensive Plan can be accepted by the State. The County and Town Ordinances and materials that have been used as background information are listed in Appendix A. The County, as well as the State Planning Department will be sent a copy of this document for review.

The Water Resources Element seeks to identify the existing water, sewer and stormwater capacities and impact of future development upon these resources.

PLAN IMPLEMENTATION

This plan is designed to guide public decisions, financial considerations, and administrative actions, as well as 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, the comprehensive water and sewer plan, and the open space and recreation plan.

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

1. The Town Council is responsible for adopting:
 - a. 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
2. 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
3. The Planning Commission is responsible for:
 - a. Annual review of the progress in implementing this plan
 - b. Preparing and recommending to the Town Council changes to the plan and its policies at least once every five years
 - c. Review proposed public facilities and development projects for consistency with the plan
 - d. Review and approval of site plans and subdivisions
 - e. Annual review of the progress of implementing the Comprehensive Plan
4. Time frame of implementation:
 - a. The Town will update the Zoning Ordinance and Subdivision Regulation in conjunction with the development of a Downtown Revitalization Plan. This Plan may include the legislative removal of deed restrictions from Village Green property so it is ready to play an appropriate roll in Revitalization. Though the Town has already started research on this work effort, changes to the Town's Ordinances will not move forward until after the adoption of the Town's 2009 Comprehensive Plan.

BACKGROUND

LOCATION

Indian Head is located in northwest Charles County, Maryland, election district 7, 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. Navy facility and to the east is the major Development District for Charles County along Maryland Route 210 toward Bryans Road.

The Town is the beginning of the Indian Head Highway (Maryland Route 210) which is a four lane divided highway extending from the Capital Beltway (Interstate 95) and which runs for approximately 20 miles through southern Prince Georges County and northwestern Charles County to the entrance of the Navy Base (U.S. Naval Support Activity South Potomac) at Indian Head, Maryland.

Indian Head 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



HISTORY

The fortunes of the Town of Indian Head have fluctuated with those of the Navy's activities on the base. The Base at Indian Head is the oldest, continuously operating Naval Ordnance facility in the United States. Established in 1890 as the Naval Proving Ground, it became the Naval Powder Factory in 1932, the Naval Propellant Plant in 1958, the Naval Ordnance Station in 1966, and the Indian Head Division, Naval Surface Warfare Center in 1992 and the Naval Support Activity, Southern Potomac Region in 2000. The changes in name have accompanied changes in the mission of the station as it transitions from a proving ground/production facility to an engineering and technical center.

During World War II, the Navy facility produced flashless powder and pellets, and research was conducted in rocketry and development of air to ground anti-tank weapons. To accommodate workers during the war the Navy constructed additional housing in the area now known as the Village Green and also constructed the Potomac Heights and Woodland Village neighborhoods. Construction of the Indian Head Highway was initiated during the war, and the Navy provided bus service between Washington and Indian Head.

After the end of World War II the Town's population plummeted from 1,140 to 491 because of a reduction in the production of ammunition. During the Korean conflict four

new production facilities were constructed, the worker population increased, and additional employee housing was built. During the 1950's the Navy began to phase out housing for civilians instead of making necessary repairs. In the late 1950's the housing that surrounded the Village Green was demolished, with the last civilian occupants moving out in 1965.

Twenty-three new buildings were completed by the Navy in 1960 for manufacture of propellant for Polaris Missiles. In 1966, the plant was redesignated as the Naval Ordnance Station, and its production capability reached its maximum level during the Vietnam War. While ordnance production remains a significant activity, other activities that are gaining in importance include research, development, testing, and evaluation.

In 1920, under the leadership of Mr. Mattingly, Indian Head incorporated and elected three Town Commissioners. It is interesting to note that the majority of the town's residents at the time lived on government property and could not vote.

Indian Head is dependent on the Navy. It developed immediately outside of the main base gate during the war years when there was a massive effort to produce powder and munitions. Navy personnel and civilians moved to the area to support the effort, which brought accompanying housing and commercial development to serve the civilian population. Even the main highway (Maryland Route 210) was initiated by the federal government to provide a vital and quick link to the naval base from the Washington D.C. area.

The character of current day Indian Head is reflective of its origins, which can easily be seen in almost every aspect of ordinary daily living. The network of streets and sidewalks in the Village Green Park clearly indicate where military housing once stood, and the current population is reflective of a significant work force still active on the base; and there is a substantial number of military and civilians retirees that live in town.

Recent development pressure in nearby areas of Charles County 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.

REGIONAL SETTING

Indian Head is in a very unique situation in regards to its physical location and the economic forces at work in the region. The Town is located between the Navy Base at Indian Head at the southern end of Maryland Route 210 and the Development District of Charles County, which occupies a large portion of the north, central, and western portions of the County.

The population growth in Indian Head is similar to the kind of growth that is occurring throughout Charles County. The close proximity to Washington DC 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 3,422 according to the 2000 Census. These population numbers reflect a residential population increase of approximately 113%.

Although the Town is growing in residential population there has been a stagnation and erosion of commercial activity. The Navy Base to the west of Indian Head is a destination, which draws over 3,000 to the base. These commuters primarily travel through Town to their employment and stay on base during the day. In the afternoon they again travel through Town to destinations north and east of the town and have little contact with local businesses except for a significant lunchtime business.

When viewed from a larger regional perspective, Indian Head is an essential ingredient of the northern Charles County Development District. 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 of Indian Head, including the NSWC, should be a key component of Charles County's economic development efforts. The Town should continue to create a Downtown Redevelopment Plan that is recognized as part of the County's Plan and will serve as the basis for creating a Town Center that will be supported by existing and future residential development.

Regional Development Issues:

- The Navy Base at Indian Head is a major employer in Charles County, and a primary source of support for commercial enterprises in the Town of Indian Head.
- 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 by water on both sides presents unique development opportunities for a quality of life that is not available elsewhere in the area.
- As a result of State acquisitions and County down zoning in the area, the Town needs support from the County and State in its development and redevelopment efforts.

DEMOGRAPHICS

Indian Head is a diverse community that consists largely of year-round residents, non-resident property owners, and a growing number of senior citizens. Although the availability of data is limited, this section will include all groups of population,

mentioned above, to provide a basis for understanding and meeting present and future planning needs when forecasting in the Municipal Growth Element chapter. It 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 of Indian Head 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 Ordnance Station (NOS). There was a major increase in the Town’s population from 1950 to 1970 with the enlargement of the NOS facilities and accompanying increase in employment, because 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. The completion of Maryland Route 210 as a four lane divided highway has accelerated the pace of new residential construction.

In 1986, Indian Head annexed Woodland Village with 270 residents and Knotts Subdivision with 92 residents. In 1992, the Teates Subdivision of 51 residents was annexed, and in 1994, a new housing project with 62 residents was built, plus an annexation of the Travers Road area brought approximately 25 additional residents. Based on Charles County’s estimate, the Town’s population was 2,015 on November 1, 1986. Currently the population is approximately 4,100 due to annexation and growth in new residential construction.

Table IN-1 shows the historic population from 1970 to 2000 with the percent of change for each decade and annual change per year.

**Population 1970-2000 and Percent of Change
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%

Table IN-2 compares the historical growth of Indian Head to Charles County and the State.

**Historical Population and Average Growth Rate per Decade
Indian Head, Charles County, and Maryland
1985 - 2000**

Table IN-2

	Indian Head	Charles County	State of Maryland
1985	1,612	82,155	
1990	3,531	101,154	4,780,753
1995	3,466 – 3,951	103,603	
2000	3,422	120,546	5,296,486

RESIDENT POPULATION CHARACTERISTICS

It is common for a Comprehensive Plan to analyze the various characteristics of a community’s population, such as age, gender and education. Such information can serve to inform many actions related to future planning of services.

2000 Population Characteristics: Age, Gender, Median Age, and
Household Size in Indian Head & Charles County
Table IN-3

Population	Indian Head	Percent	Charles County	Percent
2000	3,422	100%	120,546	100%
Population by Gender				
Male	1,661	48.5%	58,878	48.8%
Female	1,761	51.5%	61,668	51.2%
Population by Age				
Under 5	285	8.3%	8,603	7.1%
5-19	923	27.0%	29,125	24.1%
20-64	1,953	57.1%	73,416	60.8%
65+	261	7.6%	9,402	7.7%
Indian Head Total	3,422	100%	120,546	99.7%
Median Age	31.4		34.6	
Average Household Size	2.8		2.86	

Source: 2000 U.S. Census; Charles County Comprehensive Plan 2006; Summary by ARRO

As shown in Table IN-3, the population is fairly evenly divided between males and females. The population of school age children: generally ages 5-19, is 27.0 percent of the population in Indian Head and 24.1 percent in Charles County. The median age of the Town's population is 31.4 years of age compared to 34.6 years of age in Charles County. This table does not have a break down in older population other than 65 years plus; however, with many people retiring earlier than 65, it is likely that there is a higher percentage than 7.6 percent living in Indian Head. Table IN-4 provides a more detailed picture of older population by age.

**Age of Householder
Occupied Housing Units
Table IN-4**

Age	Number	Percent
15-24 years	61	5.0
25-34 years	274	22.4
35-44 years	364	29.8
45-54 years	218	17.8
55-64 years	133	10.9
65-74 years	82	6.7
75-84 years	77	6.3
85 year and older	13	1.1
Occupied Housing Units	1,222	

Reference: 2000 US Census Bureau

Table IN-4 above shows the distribution by Age of Householder by Occupied Housing Units from the 2000 census. Of interest is that 14.1 percent of the householders are 65 years or older. An additional 10.9 percent of Indian Head's householders are between the ages of 55-64 some of which are close to or who may already be retired. Henceforth, approximately 25.0 percent of householders are either retired or retirement is occurring soon. This becomes a significant statistic when housing, in-town business and professional offices, and retail services located in town are addressed in the Plan.

HOUSING CHARACTERISTICS

**Indian Head
Housing Characteristics 2000
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
1,222	93.2%	1,311	802	61.2%	420	32.0%	89	6.8%

US Census: 2008

Educational levels in Indian Head are fairly comparable to Charles County as shown by percentage on Table IN-6. Among Indian Head's population, 43.4 percent have participated in a college experience as compared to 52.4 percent of County residents.

**Educational Attainment
Table IN-6**

Educational Attainment (highest level)	Indian Head	Indian Head Percent	Charles County	Charles County Percent
Population 25 years and over	2,066		76,987	
Less than high school graduate	403	19.5	10,910	14.1
High School Graduate (or equivalency)	765	37.0	25,682	33.4
Some College	515	24.9	19,973	25.9
Associate Degree	98	4.7	5,016	6.5
Bachelor Degree	172	8.3	10,158	13.2
Graduate or Professional Degree	113	5.5	5,248	6.8

Source: U.S. Census

Table IN-6 provides general breakdown of levels of educational attainment, which will be used in the Community Services 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, provision of children and adult dance, music, or 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 Indian Head.

LAND USE

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 Base. 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 amount 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.

The remainder of 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 highway overlay zone incorporating an area 500 feet on both sides of 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 Navy Base, and area 5 would be a portion of the existing Mattawoman natural environment area along Mattawoman Creek.

EXISTING LAND USE IN RELATION TO THE COMPREHENSIVE PLAN

Indian Head’s pattern of development is generally consistent with the Comprehensive Plan adopted in 1997. There have been no major new commercial facilities constructed and those that exist are located in the commercial core along MD Route 210.

There have been numerous new residential projects (single-family and multi-family) completed and some are under construction in the areas designated for residential use. The policies established in the 1997 Comprehensive Plan 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 Navy Base Gate 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 recently completed a rails to trails project that removed the old rails through Town and replaced them with a new paved hiker/biker trail.

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

Indian Head Existing Zoning and Land Uses

Table LU-1

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

Table LU-2 contains the current land use in 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, also, 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.

Table LU-2 provides the currently adopted zoning classifications that are somewhat related to the 1997 Comprehensive Plan. Part of the update of this Comprehensive Plan is to establish preferred Land that reflects those land use classifications.

**Existing Zoning for Residential, Commercial,
Mixed Use and Recreation Uses
Table¹ LU- 2**

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

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

PROPOSED LAND USE CLASSIFICATIONS

The following Comprehensive Plan land use classifications shown on Table LU-3 closely matches the existing land use classifications. There are no significant changes intended for the proposed land map but it does differ from the 1997 Comprehensive Plan land use map in regard to the mixed-use district along Route 210.

**Future Land Use Classifications
Table LU-3**

Land Use	Recommended Density	Recommended Uses	Acres	%
Institutional	Variable	Publicly owned areas of the town where the public is invited to congregate or areas that are used for private/public service.	26	3.3
Commercial/ Residential Mixed Use (Comparable to existing TCMX Zoning)	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. This district requires compliance with the Highway Overlay Zone design guidelines.	136	17.1
Residential, Low Density	3 DU/AC	Single-family, detached, and residential accessory uses.	45	5.7
Residential, Medium Density	4-5 DU/AC	Single-family, detached, and residential accessory uses.	376	47.4
Residential, (High Density) Multi-family	6-15 DU/AC	Single-family, detached, attached, and multi-family, and residential accessory uses.	60	7.5
Recreation/ 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.	112	14.2
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.	38	4.8

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

Approximately 45 acres or 5.7% are shown as Residential Low Density, primarily located along Mattawoman Creek on the south side of Town and generally within the Chesapeake Bay Critical Areas, Resource Conservation Area. The majority of the Town, 376 acres, is zoned Medium Density Residential and encompasses the majority of the Town south of Route 210 and along the east and west borders of Town adjacent to Charles County and the Navy Base. This land use category generally reflects the historic residential pattern and intensity of development.

The Commercial/Residential Mixed Use (Comparable to existing TCMX Zoning) comprises 136 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 38 acres are designated as commercial uses and are generally located along Route 210.

There is approximately 26 acres of land within the Town in the institutional category that includes schools, churches, and municipal functions. The open space area comprises 112 acres and includes existing active and passive parkland within the Town including the recently completed rails to trails project.

Since there is a significant population of senior citizens and retirees in Indian Head, new, redevelopment, or revitalization projects should include consideration for those physically challenged who live in and visit Indian Head by providing handicapped accessible facilities and being sure that landowners repair sidewalks in front of their property that are not in good shape and would impede a wheelchair. Portable signs and other materials that businesses put out on the sidewalk should be kept out of the public walkways where there should be adequate clearance for the handicap to maneuver.

LAND USES ADJACENT TO INDIAN HEAD

On the west of the Town boundary, lies the Navy Base on federal land. To the east end, including a small pocket of existing residential land on the north, lies Charles County, which is presently low-medium density residential. To the north, lies the Potomac River and to the south, Mattawoman Creek.

During the development of this comprehensive plan, several areas of potential annexation were identified. These areas include the existing low density developments at Stoney Point and along Arthur Ross Place, the Navy Base 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.

With adoption of this Comprehensive Plan, the densities above would be adopted and the Zoning Ordinance would need to be amended to reflect the changes. The Planning Commission does not appear to desire to change the height of buildings higher than they exist today.

LAND USE DEVELOPMENT PROCESS

Land use development regulations are generally thought to secure public safety, promote health and welfare of citizens, provide for adequate light and air and conservation of natural resources, facilitate adequate provisions of transportation, water, sewerage, recreation, landscaping, parks, and conservation of natural resources. With adoption of a Comprehensive Plan, review of Land Development Ordinances should take place to insure that regulations are compatible with the goals and policies of the Comprehensive Plan. This 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 the proper authority that is responsible for the completion of each task that is needed to carry out the Comprehensive Plan.

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 Indian Head'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 which has ample recreational and open space opportunities, and to develop a tourist industry around the natural resources of the Town to help support the declining 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.

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, which 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, which 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.

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.

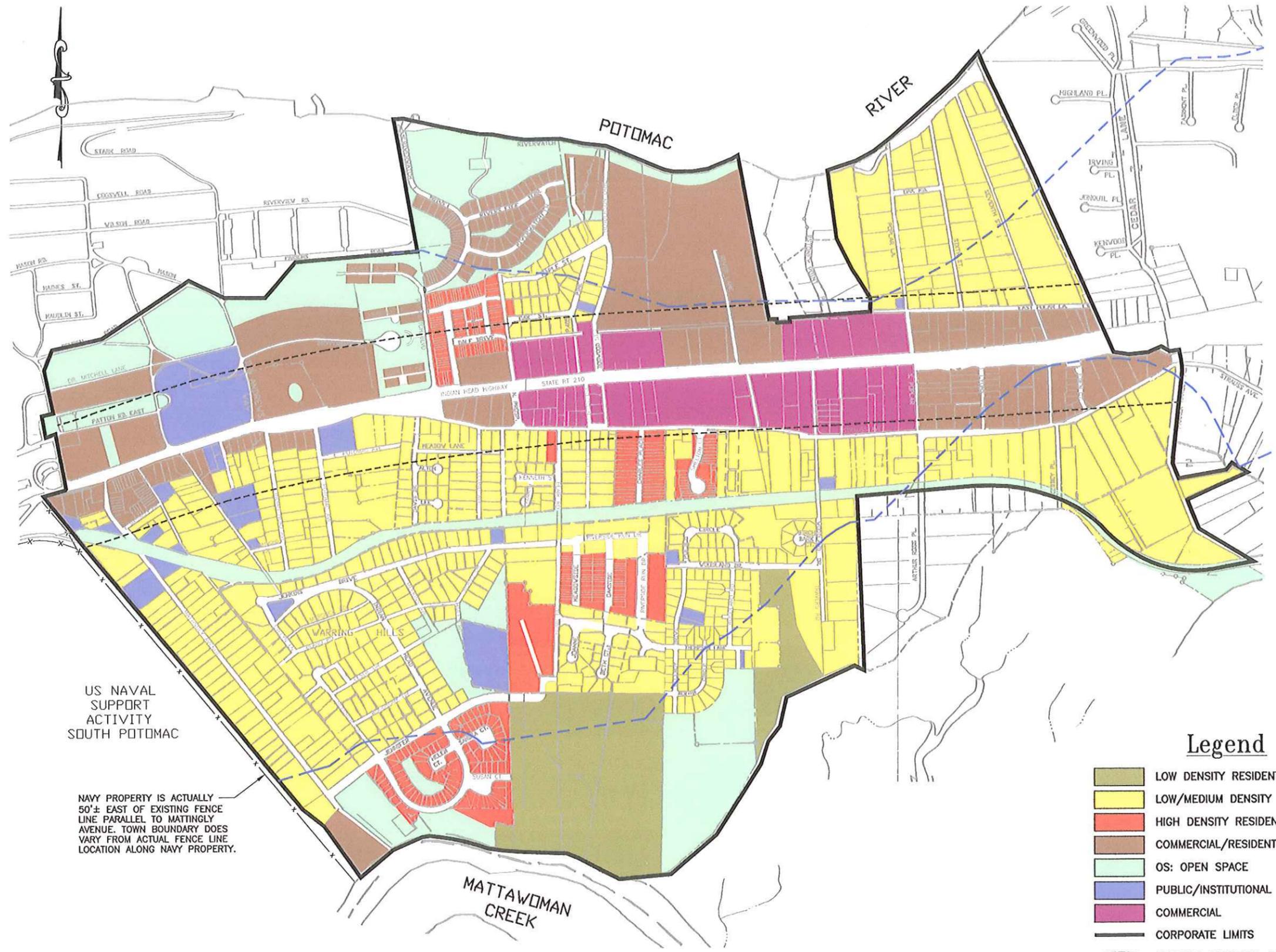
Policy LU.8: Develop flexible building regulations that promote innovative design, cost saving techniques, and which expedite the review and construction process.

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 Trail and extend the Boardwalk along the Potomac and 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, Navy history and Indian 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.





US NAVAL
SUPPORT
ACTIVITY
SOUTH POTOMAC

NAVY PROPERTY IS ACTUALLY
50'± EAST OF EXISTING FENCE
LINE PARALLEL TO MATTINGLY
AVENUE. TOWN BOUNDARY DOES
VARY FROM ACTUAL FENCE LINE
LOCATION ALONG NAVY PROPERTY.

Legend

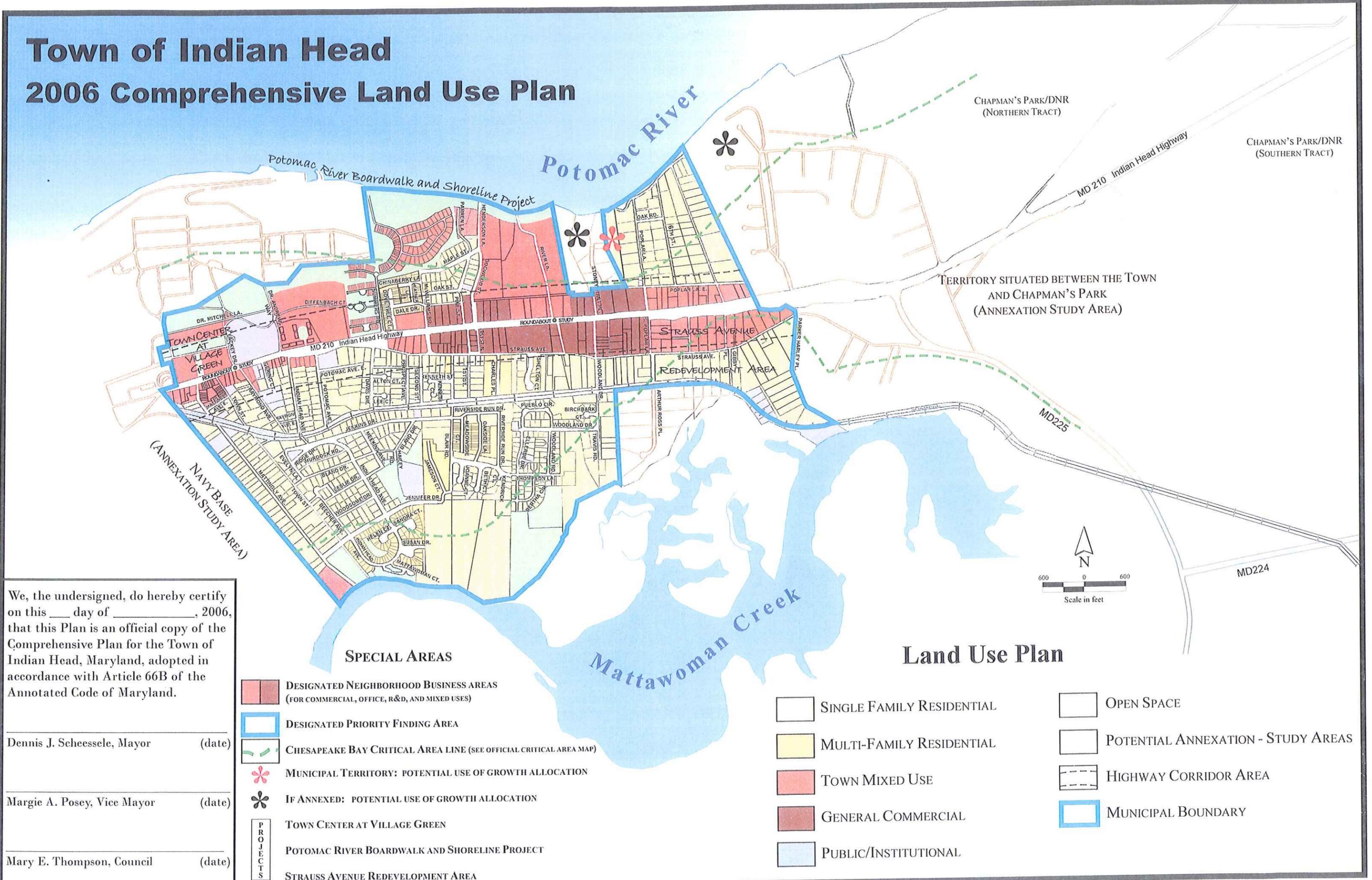
- LOW DENSITY RESIDENTIAL
- LOW/MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- COMMERCIAL/RESIDENTIAL MIXED USE
- OS: OPEN SPACE
- PUBLIC/INSTITUTIONAL
- COMMERCIAL
- CORPORATE LIMITS
- HIGHWAY CORRIDOR OVERLAY ZONE
- CHESAPEAKE BAY CRITICAL AREA OVERLAY ZONE
- EXISTING NAVAL SUPPORT BOUNDARY FENCE

Town of Indian Head Maryland Proposed Land Use Map 2009



Town of Indian Head

2006 Comprehensive Land Use Plan



We, the undersigned, do hereby certify on this ___ day of _____, 2006, that this Plan is an official copy of the Comprehensive Plan for the Town of Indian Head, Maryland, adopted in accordance with Article 66B of the Annotated Code of Maryland.

Dennis J. Scheessele, Mayor (date)

Margie A. Posey, Vice Mayor (date)

Mary E. Thompson, Council (date)

- | | | | | | |
|--|--|--|---------------------------|--|------------------------------------|
| | DESIGNATED NEIGHBORHOOD BUSINESS AREAS (FOR COMMERCIAL, OFFICE, R&D, AND MIXED USES) | | SINGLE FAMILY RESIDENTIAL | | POTENTIAL ANNEXATION - STUDY AREAS |
| | DESIGNATED PRIORITY FINDING AREA | | MULTI-FAMILY RESIDENTIAL | | HIGHWAY CORRIDOR AREA |
| | CHESAPEAKE BAY CRITICAL AREA LINE (SEE OFFICIAL CRITICAL AREA MAP) | | TOWN MIXED USE | | MUNICIPAL BOUNDARY |
| | MUNICIPAL TERRITORY: POTENTIAL USE OF GROWTH ALLOCATION | | GENERAL COMMERCIAL | | |
| | IF ANNEXED: POTENTIAL USE OF GROWTH ALLOCATION | | PUBLIC/INSTITUTIONAL | | |
| | TOWN CENTER AT VILLAGE GREEN | | | | |
| | POTOMAC RIVER BOARDWALK AND SHORELINE PROJECT | | | | |
| | STRAUSS AVENUE REDEVELOPMENT AREA | | | | |

ENVIRONMENTAL, SENSITIVE, CRITICAL AREAS

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 four sensitive areas; 100 Year Flood Plains, streams and their buffers, habitats of threatened and endangered species, and steep slopes.

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. In addition, disturbance of these areas can impact the natural resources that contribute to the Town's character and residents' quality of life.

THE 100-YEAR FLOOD PLAIN

Flood plains are by definition subject to periodic flooding. They 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 flood plain if specific engineering works such as dikes, levees, floodwalls, etc. are constructed. Within the Town of Indian Head, there are two areas that are affected by the 100-year flood plain. 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 flood plain.

Generally, restricting the 100-year flood plain from development 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 of Indian Head 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 not only vital to the Town's natural ecosystem, but 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 of Indian Head 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, and 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 food 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 Indian Head where they can function as greenways, wildlife corridors, and stormwater transport and holding systems.

In Indian Head, 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 the 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. The 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 of Indian Head. 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.

The Town has adopted ordinances and regulations to protect the items listed above. 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 Flood Plain, and threatened and endangered species. The Town has also adopted as part of the Zoning Ordinance, regulations to protect the Chesapeake Bay Critical Area.

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.

The Town of Indian Head has adopted its Critical Area Program, which is included in a separate document entitled "Indian Head Critical Area Plan".

The Town of Indian Head remains committed to the protection of the natural environment and the goals and objectives of the State Critical Areas Program.

The State of Maryland adopted House Bill 1253, effective July 1, 2009, which strengthened the importance of protecting the Critical Area and buffers from development and the enforcement provisions for violations.

ENVIRONMENTAL, SENSITIVE, AND CRITICAL AREA GOALS

1. TO 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 FLOOD PLAINS, ENDANGERED SPECIES HABITATS, 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 Flood Plain from the adverse effects of development.

Implementation Strategies:

1. Restrict the 100-Year Flood Plain from further development. New structures will not be permitted within the 100-Year Flood Plain, 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 Flood Plain shall not be permitted.
3. New residential structures shall not be permitted within the 100-Year Flood Plain.

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 eco system and functions of the stream and stream buffers are preserved and enhanced and stormwater is managed to prevent degradation of streams.

Implementation Strategies:

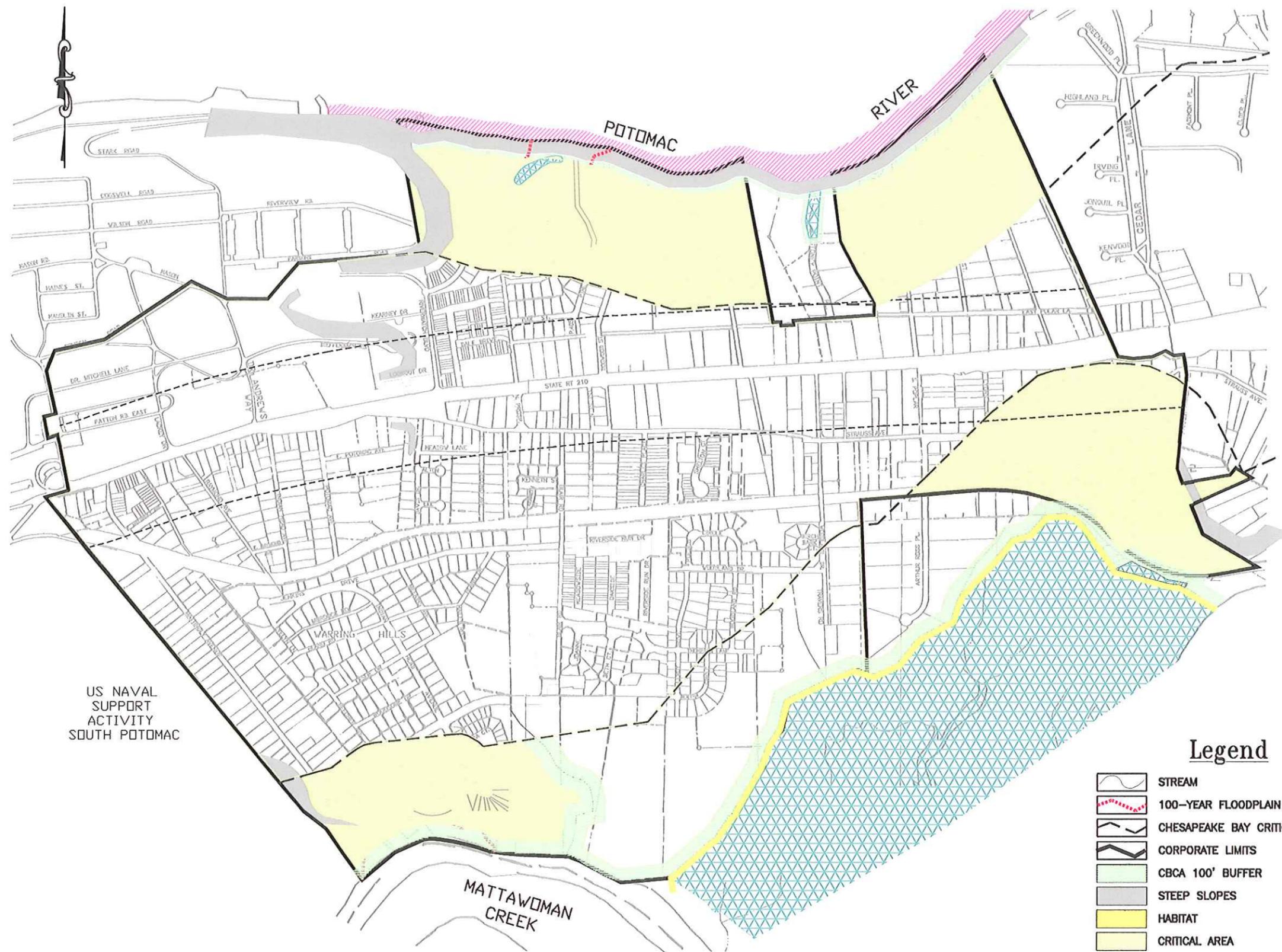
1. It should be noted that there are no streams within the Town of Indian Head. However, the Town will continue to monitor and try to identify and map any unknown perennial or intermittent streams and establish a minimum 25-foot buffer from each bank for areas outside the State Critical Area.
2. The 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.

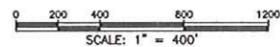
Implementation Strategies:

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.



US NAVAL
SUPPORT
ACTIVITY
SOUTH POTOMAC

Town of Indian Head Maryland
Sensitive Areas Map 2009



Legend

-  STREAM
-  100-YEAR FLOODPLAIN
-  CHESAPEAKE BAY CRITICAL AREA
-  CORPORATE LIMITS
-  CBCA 100' BUFFER
-  STEEP SLOPES
-  HABITAT
-  CRITICAL AREA
-  SUBMERGED AQUATIC VEGETATION
-  WETLANDS

MUNICIPAL GROWTH

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 Town precipitated by population growth. It 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 16 percent between the years of 2000 and 2007.

**Estimated Population for Indian Head and Selected Jurisdictions
2000-2007
Table MG-1**

Jurisdiction	2007	2006	2005	2004	2003	2002	2001	2000	2000-2007 Percent Change
Maryland	5,618,344	5,602,017	5,573,163	5,537,662	5,494,136	5,433,822	5,374,956	5,310,916	6.1
Charles County	140,449	137,425	134,468	131,572	128,740	125,969	123,257	120,546	16.5
Indian Head	3,974	3,927	3,879	3,780	3,702	3,607	3,514	3,423	14.2

Prepared by the Maryland Department of Planning, Planning Data Services

In their 2006 Comprehensive Plan, Charles County projected a 2010 population of 147,400 with 52,228 households, and 2.78 persons per household. Their projection for 2020 was a population of 177,181 with 63,654 households and 2.74 persons per household. Population projections received from Charles County to the year 2020 indicates that their average annual growth rate in population will be 2 percent.

According to the 2000 Census reports, the average household size in Indian Head was 2.86 persons. Households represent all people occupying a housing unit, whether related or not (containing no more than one family); a family includes a householder 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-2 shows population projected from 1980 to 2030. Projection in the year 2030 predicts a rise in population to 5,860 persons and 2,251 households. These numbers have been used for forecasting of the Community Facilities and Water Resources Element. Of course the national economy will affect population growth in the Town since there are not an abundance of jobs here and there is a higher cost to commute long distances to work. Many may be reluctant to invest in remodeling a home or a developer may want to wait to begin a project until the economy and the housing market improves.

**Projected Population and Household Projections - 1980 -2030
Table MG-2**

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	3,879	13.3	1,391	13.8
2010	4,120	6.2	1,495	7.5
2015	4,582	11.2	1,691	13.1
2020	5,057	10.4	1,895	12.1
2025	5,526	9.3	2,094	10.5
2030	5,860	6.0	2,251	7.5

Indian Head data developed by State Department of Planning using highest development pressure method.

GROWTH PATTERNS

The fortunes of the Town have fluctuated with those of the Navy Base. With the base's 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-2, 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.

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

Since the 1997 Comprehensive Plan was adopted, a number of new community facilities have been added to the Town. The fishing pier and boat docks have been rebuilt at Mattingly Park and a bicycle/walking path has been added along the old rail trail. The Senior Center was improved, the wastewater treatment plant has been upgraded to Enhanced Nutrient Removal status, Woodland Village infrastructure has been replaced. In addition, several multi-family housing projects have been constructed in Riverwatch and along Route 210.

Other proposals that are being considered or have had plans approved are those of a new 160 unit luxury condominium and townhouses along the Potomac River known as Ridgewater.

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 which is mainly located from Potomac Street to the Navy Base. 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 of the Town is shown in Table MG-3 below and following that is Table MG-4 that contains the proposed land classifications and the uses expected in those areas.

**Existing Zoning for Residential, Commercial,
Mixed Use and Recreation Uses
Table¹ MG-3**

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

¹Table 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 scrutinized by the Planning Commission with the goal of improving aesthetics through Town.

**Future Land Use Classifications
Table MG-4**

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-5**

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%	136	17.1%	0%
Total Commercial	174	21.9%	174	21.9%	0%
Government Public/Institutional Roads	26	3.3%	26	3.3%	0%
Residential Low Density	45	5.7%	45	5.7%	0%
Residential Medium Density	376	47.4%	376	47.4%	0%
Residential High Density	60	7.6%	60	7.6%	0%
Total Residential	481	60.7%	481	60.7%	0%
Recreation/Open Space	112	14.1%	112	14.1%	0%
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 Navy Base 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 walk-able and bike-able community. Infrastructure is already in place and infill lots are less costly to provide sewer and water.

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.

Table MG-6 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.

Vacant Lots with Potential for New Construction in the Existing Town Boundaries

Indian Head

Table MG-6

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 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 Heads' 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. In fill 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 build up areas where infrastructure already exists. Infill development conserves an existing community's finances due to the presence of infrastructure and services that can be enhanced and improved rather than starting from new construction. It is important that infill development be designed to be attractive and compatible with the existing development in Town.

The State encourages Comprehensive Plan polices 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 of infill development as shown below.

- ✓ Site constraints, such as: wetlands; poor drainage; 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 if they do not meet 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 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.

The U.S. Naval Support Facility – Indian Head, occupying approximately 3,500 acres, is identified as a future annexation area. As a federal facility, annexation would have no influence on any development that may occur. The federal government, being a higher government echelon than the Town, would not be subject to the Town’s land use regulations or municipal powers. Annexation could be mutually beneficial to the Navy and the Town. The Navy base is considering privatizing non-mission related functions such as housing, electric distribution, and water and wastewater services. The Town could assist the Navy by becoming an operator for some of these services. Annexation will facilitate such activity. The Navy base 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. While the Town has no current plan for annexation of the Navy base, it would be mutually beneficial to be able to annex the base. The Town wants to be in a position to help the Naval Support Facility – Indian Head to flourish.

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 provided paid for by the residents through a front foot assessment. The existing advancement 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 provided 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, Route 225 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 exists 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. It is expected that sewer could be provided by the

County, since sewer lines exist on Route 225 and Strauss Avenue, and water could be provided by the Town by extending the existing Town water lines currently on Strauss Avenue and along Route 210.

Table MG-7 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-7**

Land Use	Acres	Development Potential	Water/Sewer Demand	Remarks
R-2/Low Medium Residential	33	4 units/acre = 132 EDUs	33,000 GPD	
TCMX Mixed Use	80	Mixed Residential/ Commercial	80,000 GPD	1,000 GPD/acre Served by County Sewer
Stoney Point Place	17	7 EDUs	1,750 GPD	Critical Areas
Arthur Ross Place	19	13 EDUs	3,250 GPD	Critical Areas
TOTALS	101	152 & Commercial	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 and sewer treatment capabilities of the Town. The Town should, when planning any expansion of the existing water and sewer system to meet projected demands in 2030, consider the additional burden of annexation on the Town's facilities. It is however, 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 ASSESSMENT

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 actually withdrawals on average 279,957 gallons per day. The potable water supply is currently provided by four separate wells in the Patapsco Aquifer yielding 675,000 gallons per day with all wells operating 18 hours per day. With the largest well #3 out of service, the yield from the remaining wells is 480,600 gallons per day. Well #2, pumping at 105 gallons per minutes (gpm), is located on Evelyn Lane; Well #3, pumping at 180 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-8 below provides average daily water demands through the planning period.

Water Demand Projections for 2030

Table MG-8

	2000	2005	2010	2015	2020	2025	2030	Change %
Population	3,423	3,879	4,120	4,582	5,057	5,526	5,860	71% or 2.4%/yr
Household	1,222	1,391	1,495	1,691	1,895	2,094	2,251	84% or 2.8%/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	246,844	280,982	285,207	334,207	385,207	434,957	474,207	92% or 3%/yr

Source: Department of State Planning. Projections for highest development pressure method.

¹ Average day demand at 250 GPD/EDU for future flows beyond 2009

Combined water storage of 300,000 gallons is provided by two elevated ellipsoidal tanks. 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. Overflow elevation for both tanks is elevation 204. Both 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 CH57G003(07). Initially issued by MDE in 1957, the permit has a current expiration date of September 1, 2007. It permits the Town to pump groundwater from five existing wells for a combined daily average allocation of 338,000 gpd and 422,000 gpd for the month of maximum use. A new water appropriation permit application that incorporates increased capacity from new well #6 is currently being reviewed by the State.

The Patapsco Aquifer, from which Indian Head obtains 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 embarked on developing a new well at the location of old Well #6 on Thompson Lane, which will draw water from the Patuxent Aquifer. An appropriation permit for new well #6 for 250,000 gpd has been submitted to MDE for review.

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. Once new well(s)

are on line, Well #5 may be abandoned, production reduced or refurbished with additional treatment capability.

With Well #6 in the Patuxent Aquifer, a separate groundwater appropriation permit for 250,000 gpd average daily flow and 312,000 gpd for the month of maximum use is anticipated. This addition to the existing permit of 338,000 gpd and 422,000 gpd produces a total of 588,000 gpd and 734,000 gpd respectively. Table MG-9 provides a summary of available capacity.

**Available Capacity for New Growth
Table MG-9**

	Capacity Based on Average Day Flow	Average Day Capacity during Month of Maximum Use	Maximum Day Capacity
Current Permit Limit	588,000 gpd	734,000 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	280,050 gpd -24,750 gpd	391,230 gpd -32,175 gpd	113,650 gpd -39,600 gpd
Net Excess Capacity	255,300 gpd	359,055 gpd	74,050 gpd

(1) from Table WRE-2

Given the conservative assumptions as stated above, the 2010 available maximum day capacity for new growth is 74,050 gpd. The Town’s system has adequate capacity to meet average day demands through 2030.

Converting average daily projections in Table MG-8 to maximum daily demands, the current maximum daily capacity will be exceeded in year 2021. 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.

Based on a comparison between pumped and customer metered flows, the Town’s unaccounted for water is approximately 24%. 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 300,000 gallons within two separate elevated 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-10.

**Water Storage Analysis
Table MG-10**

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	1,474	297,748	81,583	242,600	108,061	432,244	300,000	- 132,244
2010	4,120	1,495	285,207	78,147	243,428	107,192	428,767	300,000	- 128,767
2015	4,582	1,691	334,207	91,573	256,331	115,968	463,872	300,000	- 163,872
2020	5,057	1,895	385,207	105,547	269,204	124,917	499,668	300,000	- 199,668
2025	5,526	2,094	434,957	119,178	287,572	135,583	542,333	300,000	- 242,333
2030	5,860	2,251	474,207	129,933	289,188	139,707	558,828	300,000	- 258,828

Column 1 – Assumes growth at rate from State Planning. See MG-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 $G=1020 P^{1/2} (1-.01(P^{1/2}))$ 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 258,828 gallons will exist. The Town is currently planning a new 200,000-gallon ground storage tank and booster station to be built in conjunction with new Well #6. This will be completed in 2010. The 200,000-gallon storage tank will provide adequate storage until 2020. Prior to the end of the planning period of year 2030, additional storage of approximately 59,000 gallons will be needed. Additional storage to meet this deficit should be constructed by 2020.

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 332,000 gpd. Table MG-11 summarizes the projected sewer demand over the planning period.

Sewer Demand Projections for 2030

Table MG-11

	2000	2005	2010	2015	2020	2025	2030	Change %
Population	3,423	3,879	4,120	4,582	5,057	5,526	5,860	71% or 2.4%/yr
Household	1,222	1,391	1,495	1,691	1,895	2,094	2,251	84% or 2.8%/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	274,950	312,975	337,250	386,250	437,250	487,000	526,250	91% or 3% yr

Source: Department of State Planning. Projections for highest development pressure method.

¹Average day flow at 250 GPD/EDU for future flows

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 are planned to connect to public sewer by 2011. 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 in 2010, 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 332,000 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 24,750 gpd. In order to account for the excessive inflow and infiltration in the wastewater system, 20% of the design flow (approximate difference in 2002 and 2003 flows) is recommended to be held in reserve until corrective action is taken to reduce excess inflow and infiltration in the system. Corrective action would include 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 this in mind, the remaining capacity of the existing plant for future development is as follows:

**Remaining Sewer Capacity
Table MG-12**

Existing Design Capacity	500,000 gpd
20% Reserve for I/I (approximate difference between 2002 & 2003 flows)	-100,000 gpd
Potential development flows	-24,750 gpd
Existing 3-year average flow	-332,000 gpd
Net remaining capacity for future development	43,250 gpd

The remaining capacity of 43,250 gpd equates to 173 equivalent dwelling units using 250 GPD/EDU from the MDE Design Guidelines. Based on growth projections, these taps will be exhausted by year 2016. Once the inflow and infiltration is effectively reduced, additional taps should be available depending on the effectiveness of the reduction program. Other options for increasing capacity include expanding the existing wastewater treatment plant or pumping to the County's Mattawoman Treatment Plant under a negotiated agreement with the County Commissioners.

STORMWATER MANAGEMENT ASSESSMENT

The Town of Indian Head is located between the Potomac River on the north, Mattawoman Creek on the south and the U.S. Naval Base on the west. A portion of the Town along the river and creek are within the Chesapeake Bay Critical Areas and;

therefore, 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 Stormwater Management 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. The Town needs to encourage environmental site design (ESD) to the maximum extent possible (MEP) as proposed by the State Design Guidelines. The Town intends to adopt an ordinance requiring environmental site design by November 2009.

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, the MDE established a Total Maximum Daily Load (TMDL) wasteload 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 present in the following section, the Town does not exceed the point source allocation for nitrogen or phosphorus. 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 phosphorus. There is no current TMDL wasteload 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.

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."

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 MG-13**

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 Naval base 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 MG-14**

Zoning/ Usage	Usage/ Estimated Land Cover	Drainage Area	Total Area (acres)	Pervious Area (acres)	Impervious Area (acres)
Naval Base	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	80	12	68
OS	Forest	Potomac	-	-	-
		Mattawoman	199.28	199.28	-
TOTAL AREA		Potomac	1,767.37	965.53 ²	801.84
		Mattawoman	2,081.64	1,533.05 ³	548.59

¹Impervious cover for developed areas of Naval base estimated from existing aerial photography and public descriptions of base provided by the Navy. Undeveloped areas treated as forest cover.

²665.53 acres "Pervious Urban", 300 acres "Forest"

³433.77 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 MG-15**

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	433.77			3,730.42	433.77
Impervious Urban	Potomac	801.84	6.66	0.41	5,340.25	328.75
	Mattawoman	548.59			3,653.61	224.92
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					8,890.04	680.68

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, likely in 2010 or 2011. 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 12,946.15 lb/year of nitrogen and 1,081.54 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 Naval base 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 Naval base would be at the discretion of the U.S. Navy 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, effective March 1, 2005 and expiring on February 28, 2010. An ENR upgrade has been made to the Town's treatment plant in order to comply with the new

discharge limits to go 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 well below the permit limits; so, the values below represent a maximum loading.

Current and Projected Point Source Loading
Table MG-16

YEAR	Wastewater Flow (GPD)	Nitrogen (lbs/year)	Phosphorous (lbs/year)
EXISTING	332,000	4,042	303
2010	337,250	4,104	308
2015	386,250	4,700	352
2020	437,250	5,320	399
2025	487,000	5,926	444
2030	526,250	6,403	480

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 be abandoned in 2010.

Current and Projected Total Non-Point and Point Source Loading
Table MG-17

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	16,988	1,385
2010	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	4,104	308	8,138	709	17,028	1,390
2015	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	4,700	352	8,734	753	17,624	1,434
2020	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	5,320	399	9,354	800	18,244	1,481
2025	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	5,926	444	9,960	845	18,850	1,526
2030	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	6,403	480	10,437	881	19,327	1,562

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.

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 Navy Base 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 $(.85 + (.12 \times \text{population in thousands}))$, 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. The Sheriff's Office has a full time station in Town on Route 210 employing 28 sworn officers and covers Indian Head, Bryans Road and Nanjemoy.

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 Lackey High. Indian Head Elementary is located within the Town along Route 210 and provides education for pre-kindergarten through grade 5. According to the County Local Educational Agency (LEA), Indian Head Elementary received planning approval for a full day kindergarten addition/renovation. LEA will be seeking state funding approval in FY 2011. 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.

**School Enrollment
2008/2009
Table MG-18**

Schools	State Rated Capacity	2008/2009 Enrollment	Utilization
Indian Head Elementary	404	371	92%
General Smallwood Middle	659	513	78%
Lackey High	1,612	1,399	95%

As shown in table MG-18, enrollment at all schools are 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. It has been determined that population in 2030 is projected to be 5,860 and 2,251 households.

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 the 2009 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-19.

Projected School Impacts
Table MG-19

School	State Rated Capacity	2008/2009 Enrollment	2010 Enrollment	2020 Enrollment	2030 Enrollment
Indian Head Elementary	404	371	373	461	539
Middle School	659	513	514	566	612
High School	1,612	1,399	1,401	1,477	1,545

From the projections in Table MG-19, we can see that enrollment for the elementary school may be exceeded by year 2013. 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 three branches: La Plata Branch, P.D. Brown Memorial Library in Smallwood Village, Waldorf, and the new Potomac Branch in Bryans Road. The three branches have a combined floor area of 36,400 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. 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 it's 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 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 Navy 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, and a gazebo.

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 tot 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 open space for passive recreation. The National Recreation and Park Association recommends 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 planning the construction 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.

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 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 accepts 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

The national recession is currently being felt in Indian Head, as well as, Charles County and the region. Increased unemployment, decrease in property values, and loss of tax revenues will affect development and the provisions for infrastructure improvements that are and will be needed.

During this poor economic climate, the Town should be more inclined to have developers pay their way when developing within the Town and contributing to easing the stress on the existing infrastructure. Infrastructure improvements that will be needed over the planning period include capacity and pipeline improvements to the water system, capacity, pipeline and pump station upgrades to the wastewater system including corrective action to reduce excessive inflow and infiltration; sidewalk and bicycle paths, additional public parking in the commercial district and for access to the proposed boardwalk along the Potomac River.

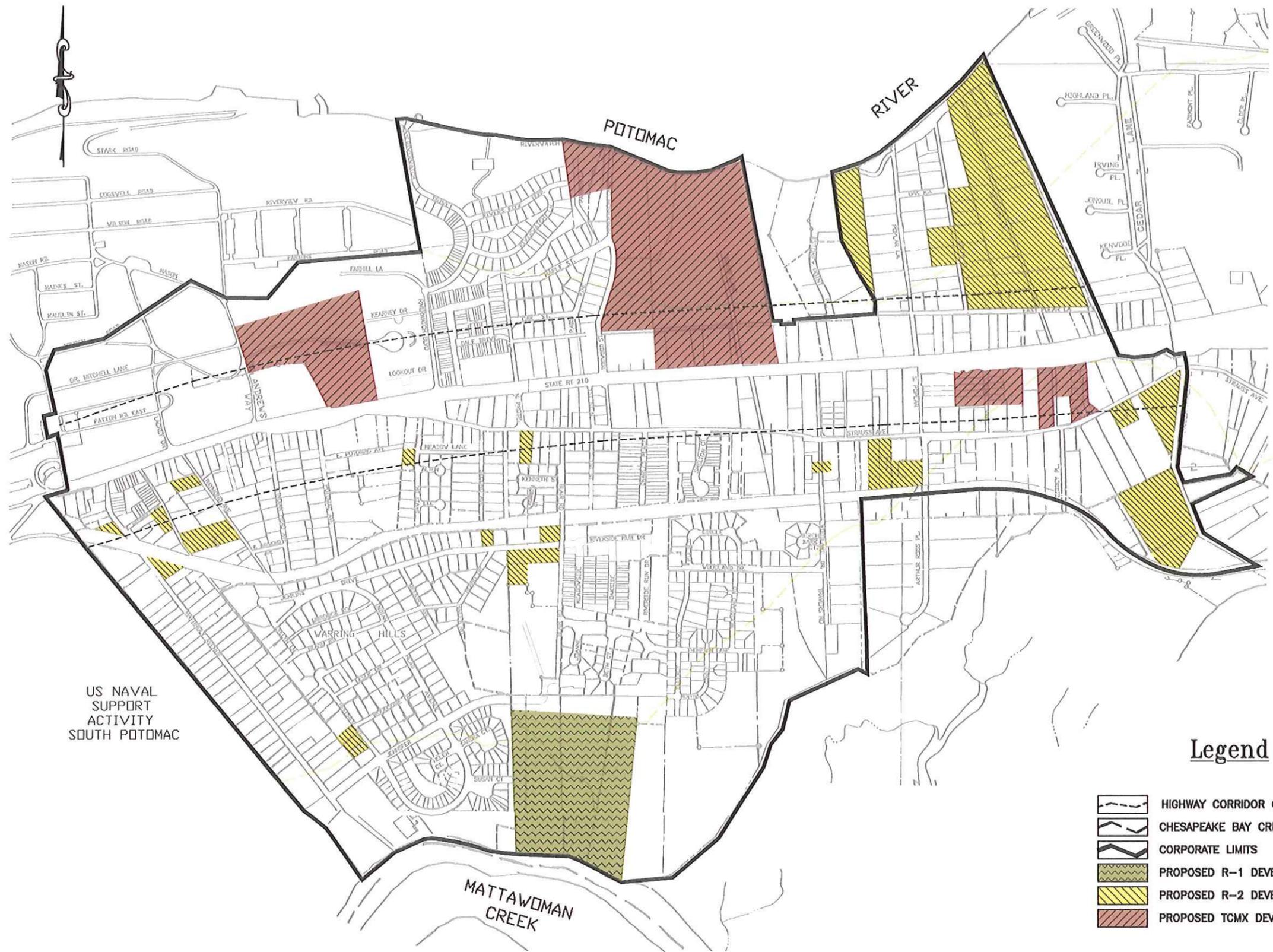
The Town should actively apply for grants from such funding agencies as the Maryland Department of the Environment, Housing and Community Development, State Highway Administration and the USDA-Rural Utility Service to fund some or all of the necessary public improvements.

This comprehensive plan supports these and other goals, policies and strategies. An effort should be made to amend the Town's land use ordinances and policies in a timely manner, and implement them as they are recommended in the Implementation section of this plan.

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 are 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.

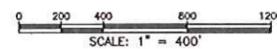


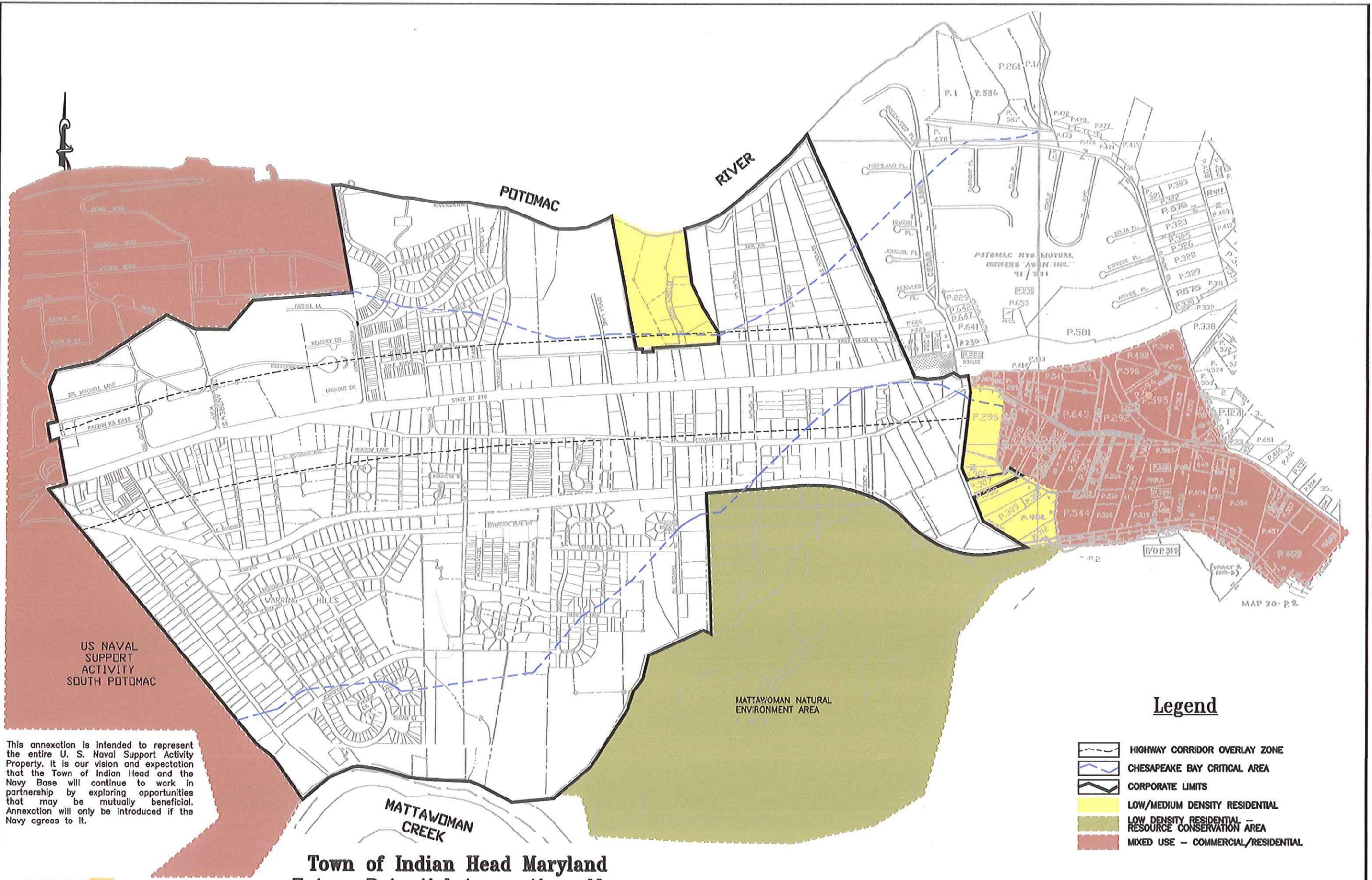
US NAVAL
SUPPORT
ACTIVITY
SOUTH POTOMAC

Legend

-  HIGHWAY CORRIDOR OVERLAY ZONE
-  CHESAPEAKE BAY CRITICAL AREA
-  CORPORATE LIMITS
-  PROPOSED R-1 DEVELOPMENT
-  PROPOSED R-2 DEVELOPMENT
-  PROPOSED TCMX DEVELOPMENT

**Town of Indian Head Maryland
Future Development Map**





This annexation is intended to represent the entire U. S. Naval Support Activity Property. It is our vision and expectation that the Town of Indian Head and the Navy Base will continue to work in partnership by exploring opportunities that may be mutually beneficial. Annexation will only be introduced if the Navy agrees to it.

Legend

-  HIGHWAY CORRIDOR OVERLAY ZONE
-  CHESAPEAKE BAY CRITICAL AREA
-  CORPORATE LIMITS
-  LOW/MEDIUM DENSITY RESIDENTIAL
-  LOW DENSITY RESIDENTIAL - RESOURCE CONSERVATION AREA
-  MIXED USE - COMMERCIAL/RESIDENTIAL

**Town of Indian Head Maryland
Future Potential Annexations Map**



COMMUNITY FACILITIES

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.

Indian Head 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 life style 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 Recreational
- 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 Navy Base 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.

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.

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. The Sheriff's Office has a full time station in Town on Route 210. 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. The school is planning an addition for increased classroom

space. 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 be grow to 5,860 if the Town continues to grow at the historic rates. There will be approximately 2,251 households and each household is estimated to have 2.8 persons in single-family dwellings.

**School Enrollment
2008/2009
Table CF-1**

Schools	State Rated Capacity	2008/2009 Enrollment	Utilization
Indian Head Elementary	404	371	92%
General Smallwood Middle	659	513	78%
Lackey High	1,612	1,399	95%

As shown in table CF-1, enrollment at all schools are 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. It has been determined that population in 2030 is projected to be 5,860 and 2,251 households.

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 the 2009 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	2008/2009 Enrollment	2010 Enrollment	2020 Enrollment	2030 Enrollment
Indian Head Elementary	404	371	373	461	539
Middle School	659	513	514	566	612
High School	1,612	1,399	1,401	1,477	1,545

From the projections in Table CF-2, we can see that enrollment for the elementary school may be exceeded by year 2013. 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 three branches: La Plata Branch, P.D. Brown Memorial Library in Smallwood Village, Waldorf, and the new Potomac Branch in Bryans Road. The three branches have a combined floor area of 36,400 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 it's 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 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 Navy 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, and a gazebo.

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 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 open space for passive recreation. The National Recreation and Park Association recommends 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. The Town is currently planning the construction 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 2011.

Charles County is currently working on 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 accepts 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 five (5) 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. Standard criteria would recommend a one-day supply minimum of available storage, which puts the current capacity below the recommended 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.

COMMUNITY FACILITIES GOALS

1. TO PROVIDE, MAINTAIN AND UPGRADE COMMUNITY FACILITIES.
2. TO PRESERVE OPEN SPACE AND TO 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.

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.
5. Coordinate with the County to include Indian Head in the countywide Bicycle and Pedestrian Facilities Master Plan.

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 and Indian Head Trail. 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 which is 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 Navy.

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

Implementation Strategies

1. Sink a new deep well into the 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 projects.
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 right-of-ways 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: Insure 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. Evaluate periodically 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 Naval Base.

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

Implementation Strategies

1. Pursue the option of joint use of Town and Navy Base 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.

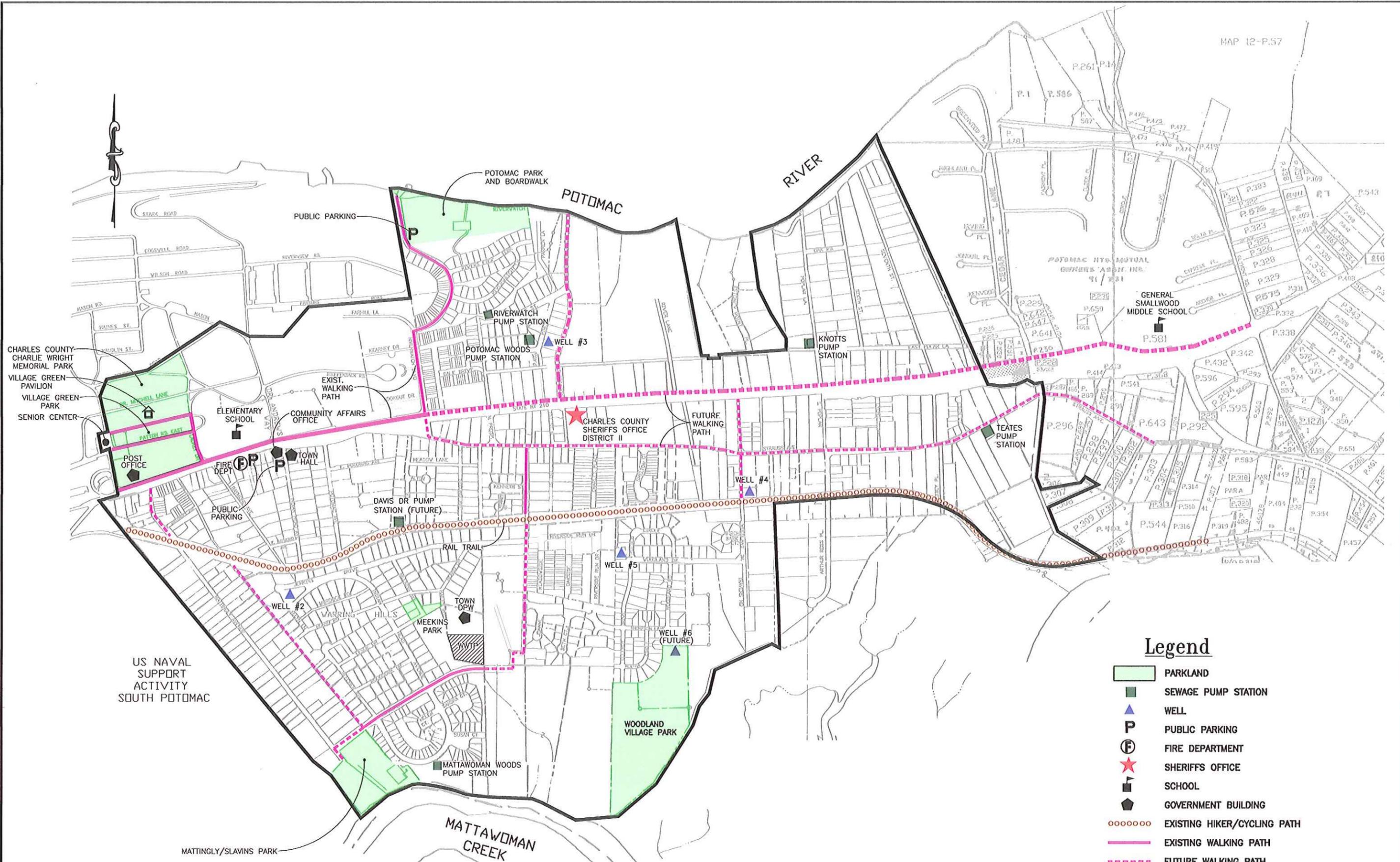
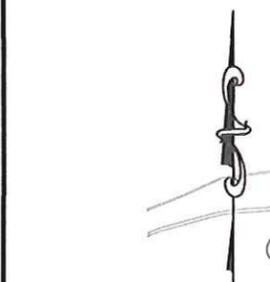
Implementation Strategies

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.

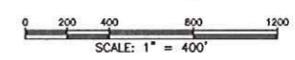




Legend

- PARKLAND
- SEWAGE PUMP STATION
- WELL
- PUBLIC PARKING
- FIRE DEPARTMENT
- SHERIFFS OFFICE
- SCHOOL
- GOVERNMENT BUILDING
- EXISTING HIKER/CYCLING PATH
- EXISTING WALKING PATH
- FUTURE WALKING PATH

Town of Indian Head Maryland Community Facilities Comprehensive Plan 2009



HOUSING

INTRODUCTION

Housing is one of the most important elements of the Town. It is not merely shelter; but physically and socially reflects the character of the Town from its roots as housing for the Navy Base which began in 1890. Housing is the Town's principle 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.

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 Navy Base 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 though 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 most of the Smart Growth Initiatives in Box H-1; and is close to meeting all objectives with adoption and implementation of their updated Comprehensive Plan.

Box H-1

Smart Neighborhoods

- Transportation choice and walk-ability
- 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

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.

It has also been identified that there is and will be a greater need in the future to provide housing for senior citizens, including assisted living units, and possibly full nursing facilities.

The 2006 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

<i>Year</i>	<i>Households</i>	<i>Household Change Percent</i>
2000	1,222	-
2005	1,391	13.8%
2010	1,495	7.5%
2015	1,691	13.1%
2020	1,895	12.1%
2025	2,094	10.5%
2030	2,251	7.5%

Projections from Department of State Planning

Table H-1 shows that based on previous growth, there will be approximately 1,029 new dwelling units available in 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, 2000

Table H-2

Housing Status	Units
Occupied	1,222
Owner Occupied	802
Renter Occupied	420
Vacant	89
Total Units	1,311

2000 Census Data summarized by ARRO Consulting, Inc.

Table H-2 indicates that there were actually 89 dwelling units in 2000 which 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, 2000

Table H-3

Age of Householder	Owner Number	Occupied percent	Age of Householder	Renter Number	Occupied percent
	802	100		420	100
15-24 years	25	3.1	15-24 years	36	8.6
25-34 years	154	19.2	25-34 years	120	28.6
35-44 years	219	27.3	35-44 years	145	34.5
45-54 years	154	19.2	45-54 years	64	15.2
55-64 years	99	12.8	55-64 years	34	8.1

65-74 years	69	8.6	65-74 years	13	3.1
75-84 years	72	9.0	75-84 years	5	1.2
85 years and older	10	1.2	85 years and older	3	0.7

2000 Census Data; Summarized by ARRO Consulting, Inc.

Table H-3 depicts Housing units by age and by owner or renter occupied. Notice that householders over 55 make up approximately 31.6 percent of owner occupied householders. An additional 55 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 will have to have services and shopping for them as well. Public transit will be necessary if services are not located in Town.

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; 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. In addition, developers will know what will be expected of them when they make application which will add to a faster review time.

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 existing home occupations are a common occurrence, especially if the jurisdiction's Zoning Ordinance does not clearly define the regulations applicable to the home occupation when the application is approved and enforcement occurs when someone is in violation of their permit. 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 only due to creating a nuisance or impact on a residence or a neighborhood. Definition of the home occupation and the requirements should be clear and concise in the Zoning Ordinance.

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 other to insure that they are adequate for conserving, rehabilitation, 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. Consider using a part of the Village Green for such housing because of its proximity to the Senior Center, Post Office and its pedestrian-friendly nature.
2. Work with the County and the State to identify funding sources and other programs which 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 Navy Base 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.

ECONOMIC DEVELOPMENT

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 have 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 Navy Base, 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 Navy Base 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 Navy Base, 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 an increase in 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

Demographic and economic forecasts have been prepared with County data when Town data was not available. Tables should be updated during the next mandated 6-year Comprehensive Plan update.

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 Bureaus numbers during the next Comprehensive Plan review. Tables within this Plan may be revised during the next Comprehensive Plan update.

**Employment, Journey to Work
Table ED-1**

Maryland: Southern Region, Charles County, Indian Head Actual 1970-2000; Projections 2005-2030										
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

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 EC-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 closely 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

¹Percents based on Charles County's Projected Growth

According to 2000 census data, Indian Head employees were traveling approximately 38.6 minutes during their journey to work and were earning a median household income

of \$42,702. The median value of owner occupied housing was \$115,100. Although it is recognized that the median household income and median value of owner occupied housing has increased over the last eight years, sufficient data at a Town level is not available to cite exact numbers.

**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
2000	38.6 minutes	\$42,702	\$115,100

TOURISM

Indian Head’s greatest strength, aside from its location next to the largest single employer (Navy Base) 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 has 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.

ECONOMIC GOALS

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

POLICIES AND IMPLEMENTATION STRATEGIES

Policy ED.1: Develop a 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 Commission that represents all the economic engines in the Town and by aggressively pursuing plans developed by the Commission and embraced by the Town Council.

2. The Town needs to ensure that Land Use Policies encourage the retaining 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 include 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 Navy Base and the community to develop a Town Center concept for the area from Potomac Avenue to the gate at the Navy Base. The intent of this concept is to attract essential services to meet the needs of the citizens as well as tourist and to provide office and other business opportunities that support the needs of the Navy Base.
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 the proposed internal trail system as proposed by this plan for cycling and hiking in Town. 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/museums in Town which center around the Navy 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. Also work on ways to make this section of Maryland Route 210 more pedestrian friendly.
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.

TRANSPORTATION

INTRODUCTION

The Town is currently bisected by Maryland Route 210, a major four-lane highway which originates on the western side of Town at the U.S. Navy facility. In addition there are numerous cross streets and some 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 designated 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:

Intermediate 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, 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: (Leslie Drive, Pine and Oak Streets) 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.

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 the Town, most citizens of the Town commute to the Navy Base or outside the County.

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 State Highway Administration has two long range plans to improve vehicular and pedestrian traffic that would impact the Town. An access control improvement project with bicycle trail is planned along Route 210 from Route 225 to Route 227. In addition, a multi-lane capacity improvement project with bicycle trails is planned along Route 225 from Route 210 to Route 301. Both projects are long-range projects and may not become a reality for 10 years or more.

Since the 1997 Comprehensive Plan, the Town has initiated a project along the Potomac River to construct a 12-foot wide boardwalk beginning at the Navy Base 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 Transportation Enhancement Program from the State Highway Administration and funds from the Town. Completion of the first 1,200 feet is planned for year 2010.

Since adoption of the 1997 Comprehensive Plan, the State Highway Administration has improved the streetscape along Route 210 from the Navy Base to Potomac Street. The improvements included paving, curbs, sidewalks, landscaping, and handicapped ramps.

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 and 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. Shared use paths on the public should be incorporated into the standard details or specifications of the street and traffic calming may need to be added to insure 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.

Since the 1997 Comprehensive Plan, a major shared use trail has been completed by the County throughout the Town beginning at the Navy Base. The old rail line has been eliminated and replaced with a new paved trail, which will ultimately extend through the County.

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 device 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.

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.

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.

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 Navy Base. 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).

TRANSPORTATION GOALS

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

POLICIES AND IMPLEMENTATION STRATEGIES

Policy T.1: Develop and implement a design improvement program for the Maryland Route 210 corridor which 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.

Policy T.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, which attract large numbers of people. (Fast food restaurants, grocery stores, theaters, etc.)

Policy T.3: Provide adequate parking areas in the commercial district.

Implementation Strategies:

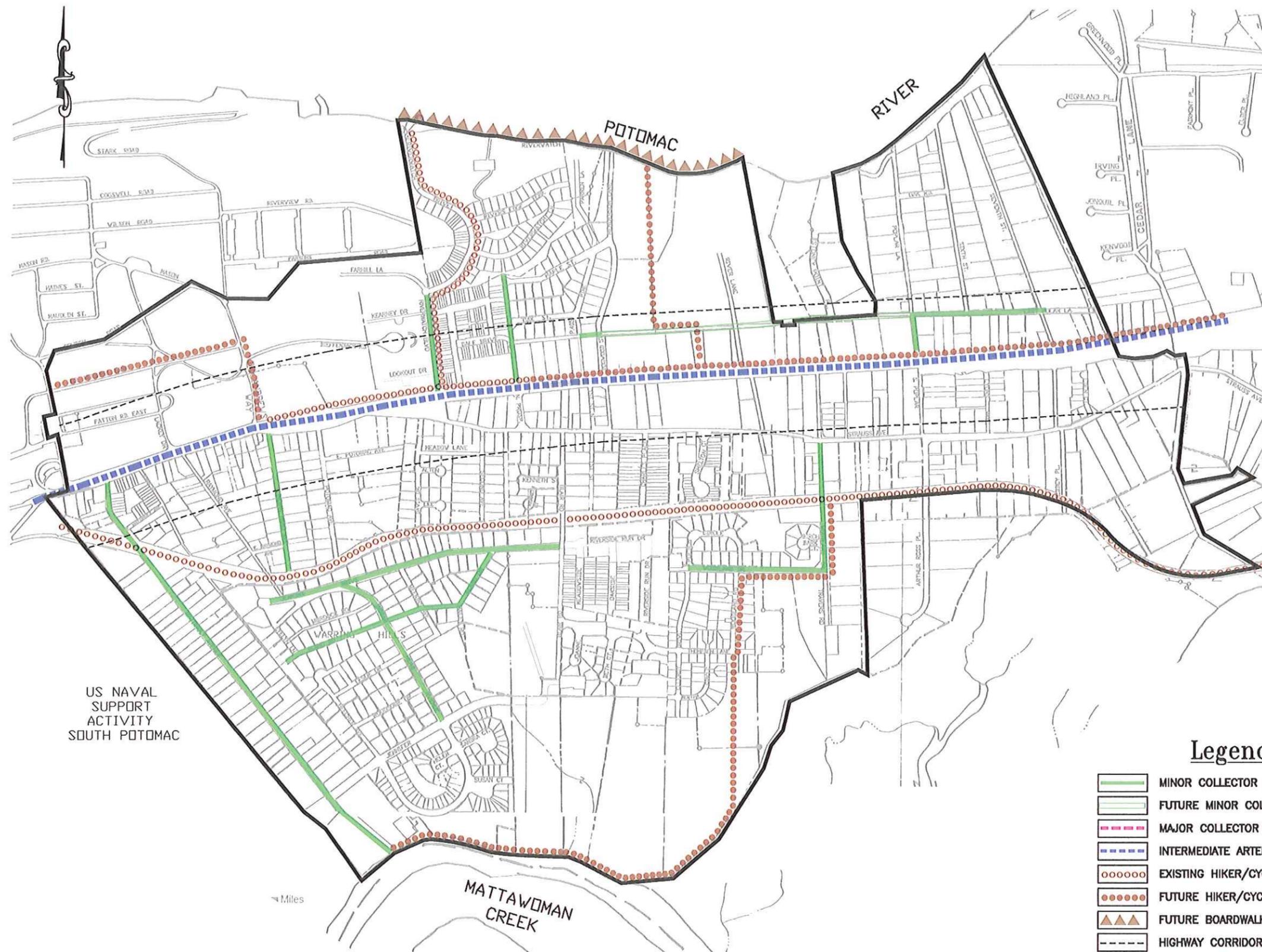
1. Develop a policy for off street parking for existing businesses which will better utilize existing parking areas and to increase the available parking spaces.
2. Develop off street parking facilities in areas where limited space currently exists as part of a commercial revitalization program.

Policy T.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 commute bus service and van pools.





US NAVAL
SUPPORT
ACTIVITY
SOUTH POTOMAC

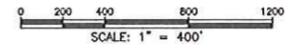
← Miles

MATTAWOMAN
CREEK

Legend

-  MINOR COLLECTOR ROAD
-  FUTURE MINOR COLLECTOR ROAD
-  MAJOR COLLECTOR ROAD
-  INTERMEDIATE ARTERIAL ROAD
-  EXISTING HIKER/CYCLING PATH
-  FUTURE HIKER/CYCLING PATH
-  FUTURE BOARDWALK
-  HIGHWAY CORRIDOR OVERLAY ZONE

**Town of Indian Head Maryland
Transportation Map 2009**



WATER RESOURCES ELEMENT

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 Surface Warfare Center, which serves as the Town's western border. The Potomac River serves as the Town's northern border, the Mattawoman Creek, the southern boundary, and the unincorporated area of Charles County on the east. 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) 279,957 gallons per day. The potable water supply is currently provided by four separate wells in the Patapsco Aquifer yielding 675,000 gallons per day with all wells operating 18 hours per day. With the largest well #3 out of service, the maximum potential yield from the remaining wells is 480,600 gallons per day. Well #2, pumping at 105 gallons per minutes (gpm), is located on Evelyn Lane; Well #3, pumping at 180 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.

Combined water storage of 300,000 gallons is provided by two elevated ellipsoidal tanks. 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. Overflow elevation for both tanks is elevation 204. Both 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 1,372 connections to water production records, an unaccounted for water loss of 24% exists currently in the Town's system. Actual water consumption is therefore approximately 155 gpd per connection and 204 gpd per connection based on water production which includes water losses. Unaccounted for water should be less than 10%.

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 332,000 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 1,460 households, which are projected to grow to a population of 5,860 residents and 2,251 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	3,879	4,120	4,582	5,057	5,526	5,860	71% or 2.4%/yr
Household	1,222	1,391	1,495	1,691	1,895	2,094	2,251	84% or 2.8%/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	246,844	280,982	285,207	334,207	385,207	434,957	474,207	92% or 3%/yr
Wastewater Flow (GPD) ²	274,950	312,975	337,250	386,250	437,250	487,000	526,250	91% or 3% yr

Source: Department of State Planning. Projections for highest development pressure method.

¹ Average day demand at 250 GPD/EDU for future flows beyond 2009

² Average day flow at 250 GPD/EDU for future flows beyond 2009

DRINKING WATER SUPPLY ASSESSMENT

The residents of Indian Head receive their drinking water from four (4) wells supplied by groundwater from the Patapsco Aquifer. Well #1 is currently not in use and Well #6 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 200 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.

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 four (4) wells 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	180 gal/min	259,200	194,400
3**	230 gal/min	331,200	248,400
4	160 gal/min	230,400	172,800
5	180 gal/min	259,200	194,400
Total, all wells in service as current		900,000	675,000
Total, all wells in service with different booster pumps (3**)		972,000	729,000
Current potential withdrawal with largest well out of service (#3)		640,800	480,600

The Town currently operates its water distribution system under Water Appropriation and Use Permit Number CH57G003(07). Initially issued by MDE in 1957, the permit has a current expiration date of September 1, 2007. It permits the Town to pump groundwater from five existing wells for a combined daily average allocation of 338,000 gpd and 422,000 gpd for the month of maximum use. A new Water Appropriation and Use Permit application that incorporates the increased capacity from the new Well #6 is currently being reviewed by the State.

Treatment is provided at each well for disinfection by introducing liquid hypochlorite. No other treatment is provided. The Town Operator is Environmental Associates Services and Training, Inc. which 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 already embarked on developing a new well at the location of old Well #6 on Thompson Lane, which will draw water from the Patuxent Aquifer. An appropriation permit for new well #6 for 250,000 gpd has been submitted to MDE for review.

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. Once new well(s) are on line, Well #5 may be abandoned, production reduced or refurbished with additional treatment capability. 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 24,750 gpd average day flow (from 99 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	338,000 gpd	422,000 gpd	480,600 gpd (1)
Historical High x 10% for drought	-307,950 gpd	-342,770 gpd	-420,950 gpd
Potential demand from approved development	30,050 gpd -24,750 gpd	79,230 gpd -32,175 gpd	59,650 gpd -39,600 gpd
Net Excess Capacity	5,300 gpd	47,055 gpd	20,050 gpd

(1) from Table WRE-1

Based on current conditions, the maximum allowable flow for future development is 5,300 gpd or 21 equivalent dwelling units (EDUs).

The Town has already drilled a new well #6 and is expected to receive an average day withdraw permit of 250,000 gpd in the lower Patuxent Aquifer. The new well is expected to be on line in 2010. Given this fact and taking a conservative approach to abandon Well #5 which currently has a high gross alpha level, the following table WRE-4 of well yield and available capacity is determined.

**Expected 2010 Well Yield
(Based on new Well #6 and abandoned Well #5)
Table WRE-4**

Well	Pumping Peak	18-hour Yield
2	105 gpm	113,400 gpd
3	230 gpm	248,400 gpd
4	160 gpm	172,800 gpd
6	230 gpm	248,400 gpd
Total with largest Well #3 out of service		534,600 gpd

With new Well #6 in the Patuxent Aquifer, a separate groundwater appropriation permit for 250,000 gpd average daily flow and 312,000 gpd for the month of maximum use is

anticipated. This addition to the existing permit of 338,000 gpd and 422,000 gpd produces a total of 588,000 gpd and 734,000 gpd respectively.

**Available Capacity for New Growth
Table WRE-5**

	Capacity Based on Average Day Flow	Average Day Capacity during Month of Maximum Use	Maximum Day Capacity
Current Permit Limit	588,000 gpd	734,000 gpd	534,600 gpd (1)
Historical High x 10% for drought	<u>-307,950 gpd</u>	<u>-342,770 gpd</u>	<u>-420,950 gpd</u>
Potential demand from approved development	280,050 gpd <u>-24,750 gpd</u>	391,230 gpd <u>-32,175 gpd</u>	113,650 gpd <u>-39,600 gpd</u>
Net Excess Capacity	255,300 gpd	359,055 gpd	74,050 gpd

(1) from Table WRE-4

Given the conservative assumptions as stated above, the 2010 available maximum day capacity for new growth is 74,050 gpd.

Converting average daily projections in Table WRE-1 to maximum daily demands, the current maximum daily capacity will be exceeded in year 2021. 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 unaccounted for water is approximately 24%. 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-6 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 Estimated Unaccounted for Water Usage
Table WRE-6**

Source	Method(s)
Hydrant Flushing	<ol style="list-style-type: none"> 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. 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	<ol style="list-style-type: none"> Place a meter on the line used to fill the pool. 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> Replace or repair all broken meters. Begin a meter calibrating program and calibrate a certain percentage of meters each year.
Fire Protection	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> Estimate the flow rate of the cleaning device and keep track of the amount of time it is in use.
Unmetered Connections	<ol style="list-style-type: none"> Place meters on these services. Estimate usage based upon the number of people within each household.

As stated previously, the Town’s water storage capacity consists of 300,000 gallons within two separate elevated 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 WRE-7.

**Water Storage Analysis
Table WRE-7**

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	1,474	297,748	81,583	242,600	108,061	432,244	300,000	-132,244
2010	4,120	1,495	285,207	78,147	243,428	107,192	428,767	300,000	-128,767
2015	4,582	1,691	334,207	91,573	256,331	115,968	463,872	300,000	-163,872
2020	5,057	1,895	385,207	105,547	269,204	124,917	499,668	300,000	-199,668
2025	5,526	2,094	434,957	119,178	287,572	135,583	542,333	300,000	-242,333
2030	5,860	2,251	474,207	129,933	289,188	139,707	558,828	300,000	-258,828

Column 1 – Assumes growth at rate from State Planning. See 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 $G=1020 P^{1/2} (1-.01(P^{1/2}))$ 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 258,828 gallons will exist. The Town is currently planning a new 200,000-gallon ground storage tank and booster station to be built in conjunction with new Well #6. This will be completed in 2010. The 200,000-gallon storage tank will provide adequate storage until 2020. Prior to the end of the planning period of year 2030, additional storage of approximately 59,000 gallons will be needed. Additional storage to meet this deficit should be constructed by 2020.

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. It is planned to connect these two houses 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 in 2010, 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 332,000 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 24,750 gpd. In order to account for the excessive inflow and infiltration in the wastewater system, 20% of the design flow (approximate difference between 2002 and 2003 flows) is recommended to be held in reserve until corrective action is taken to reduce excess inflow and infiltration in the system. Corrective action would include 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 this in mind, the remaining capacity of the existing plant for future development is as follows:

**Remaining Sewer Capacity
Table WRE-8**

Existing Design Capacity	500,000 gpd
20% Reserve for I/I	-100,000 gpd
Potential development flows	-24,750 gpd
Existing 3-year average flow	-332,000 gpd
Net remaining capacity for future development	43,250 gpd

The remaining capacity of 43,250 gpd equates to 173 new equivalent dwelling units in addition to the 24,750 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 2016. Once the inflow and infiltration is 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 from increasing the existing plant capacity or pumping flow to the County's Mattawoman treatment plant.

STORMWATER MANAGEMENT ASSESSMENT

The Town of Indian Head is located between the Potomac River on the north, Mattawoman Creek on the south and the U.S. Naval Base on the west. A portion of the Town along the river and creek are within the Chesapeake Bay Critical Areas and; therefore, 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, the MDE established a Total Maximum Daily Load (TMDL) wasteload 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 wasteload 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 1/2-acre or larger; 1/2 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-9**

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	1/2 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-10**

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 Naval base 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-11**

Zoning/ Usage	Usage/ Estimated Land Cover	Drainage Area	Total Area (acres)	Pervious Area (acres)	Impervious Area (acres)
Naval Base	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	80	12	68
OS	Forest	Potomac	-	-	-
		Mattawoman	199.28	199.28	-
TOTAL AREA		Potomac	1,767.37	965.53 ²	801.84
		Mattawoman	2,081.64	1,533.05 ³	548.59

¹Impervious cover for developed areas of Naval base estimated from existing aerial photography and public descriptions of base provided by the Navy. Undeveloped areas treated as forest cover.

²665.53 acres "Pervious Urban", 300 acres "Forest"

³433.77 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-12**

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	433.77			3,730.42	433.77
Impervious Urban	Potomac	801.84	6.66	0.41	5,340.25	328.75
	Mattawoman	548.59			3,653.61	224.92
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					8,890.04	680.68

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, likely in 2010 or

2011. 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 12,946.15 lb/year of nitrogen and 1,081.54 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 Naval base 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 Naval base would be at the discretion of the U.S. Navy 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, effective March 1, 2005 and expiring on February 28, 2010. An ENR upgrade has been made to the Town's treatment plant in order to comply with the new discharge limits to go 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 well below the permit limits; so, the values below represent a maximum loading.

Current and Projected Point Source Loading
Table WRE-13

YEAR	Wastewater Flow (GPD)	Nitrogen (lbs/year)	Phosphorous (lbs/year)
EXISTING	332,000	4,042	303
2010	337,250	4,104	308
2015	386,250	4,700	352
2020	437,250	5,320	399
2025	487,000	5,926	444
2030	526,250	6,403	480

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 be abandoned in 2010.

**Current and Projected Total Non-Point and Point Source Loading
Table WRE-14**

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	16,988	1,385
2010	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	4,104	308	8,138	709	17,028	1,390
2015	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	4,700	352	8,734	753	17,624	1,434
2020	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	5,320	399	9,354	800	18,244	1,481
2025	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	5,926	444	9,960	845	18,850	1,526
2030	Potomac	2,157	200	-	-	2,157	200	13,632	1,200
	Mattawoman	4,034	401	6,403	480	10,437	881	19,327	1,562

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.

WATER RESOURCE GOALS

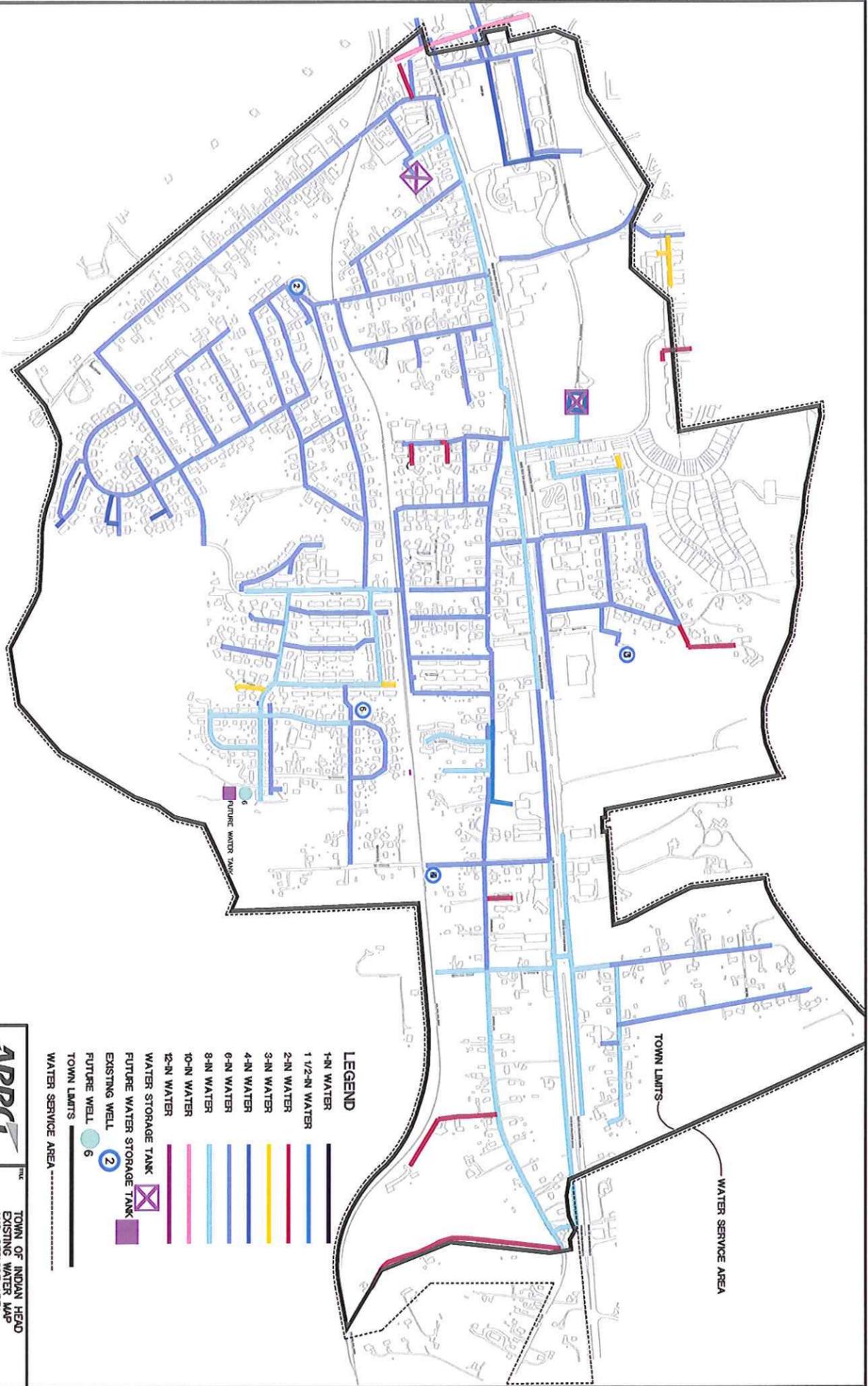
1. TO INSURE THE QUALITY OF WATER AND PROTECT THE PUBLIC HEALTH, SAFETY, AND WELFARE OF ITS CITIZENS.
2. TO PROTECT INDIAN HEAD AND THE STATES’S LAND AND WATER RESOURCES AND MEET SMART GROWTH POLICIES
3. TO PARTICIPATE WITH OTHER JURISDICTIONS TO PRESERVE AND IMPROVE THE CONDITIONS OF THE CHESAPEAKE 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 WR.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 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-biorentention 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 WR.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.
- Policy WR.3: Install emergency generator at the existing sanitary sewer pumping stations.
- Policy WR.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 WR.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 WR.6: Refurbish or replace Well #5 to assist in providing sufficient water supply for the planning period.
- Policy WR.7: Develop a system for allocating and monitoring sewer and water taps.

- Policy WR.8: Develop and place on line new well, storage tank and booster pump at Well #6.
- Policy WR.9: Initiate coordination with Navy Base to interconnect water supplies in event of emergencies.
- Policy WR.10: Initiate a regional discussion with the County on the future of wastewater treatment for Indian Head and the surrounding communities.
- Policy WR.11: Initiate a leak detection program to reduce unaccounted for water to less than 10%.
- Policy WR.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.

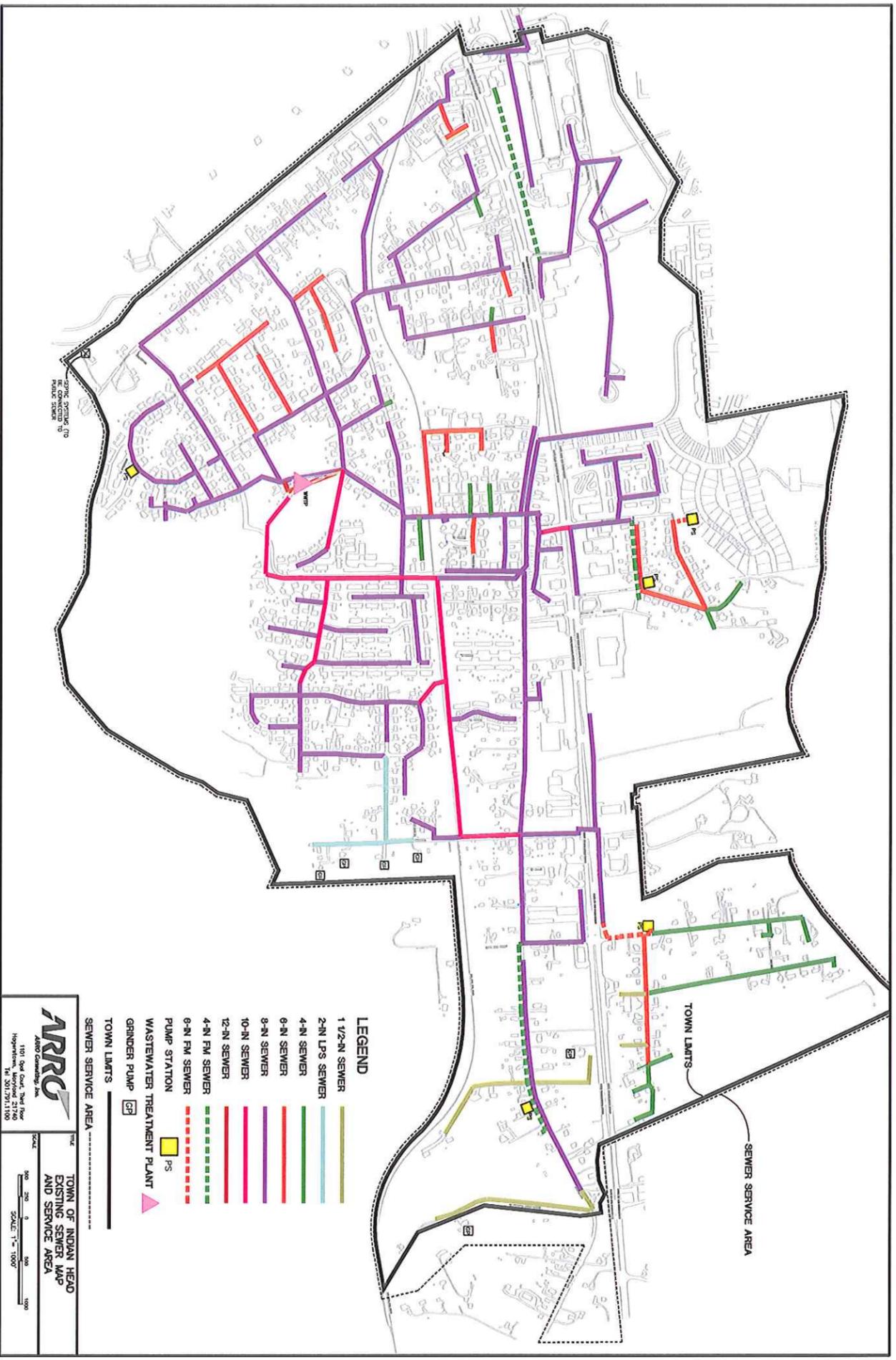


- LEGEND**
- 14-IN WATER
 - 1 1/2-IN WATER
 - 2-IN WATER
 - 3-IN WATER
 - 4-IN WATER
 - 6-IN WATER
 - 8-IN WATER
 - 10-IN WATER
 - 12-IN WATER
 - WATER STORAGE TANK
 - FUTURE WATER STORAGE TANK
 - EXISTING WELL
 - FUTURE WELL
 - TOWN LIMITS
 - WATER SERVICE AREA

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TOWN OF INDIAN HEAD
 EXISTING WATER MAP
 AND SERVICE AREA

SCALE: 1" = 1000'



SEWER SERVICE AREA

TOWN LIMITS

LEGEND

- 1 1/2-IN SEWER
- 2-IN LPS SEWER
- 4-IN SEWER
- 6-IN SEWER
- 8-IN SEWER
- 10-IN SEWER
- 12-IN SEWER
- 4-IN FM SEWER
- 8-IN FM SEWER
- PUMP STATION
- WASTEWATER TREATMENT PLANT
- GRINDER PUMP

SEWER SERVICE AREA



TOWN OF INDIAN HEAD
EXISTING SEWER MAP
AND SERVICE AREA

SCALE: 1" = 100'

MINERAL RESOURCES

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, and potentially impact the quality and yield of the Town's wells on which the Town relies as its sole source of potable drinking water.

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, which 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.

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 specify 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: those items that should be done within approximately the next ten years; and Priority 3: 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 six 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, which promotes a pedestrian-friendly environment.	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	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.	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 Trail and extend the Boardwalk along the Potomac and 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 Indian 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 Flood Plain 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 eco system 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 CF.1:	Develop new and improve existing park and recreational facilities.	1	M&C
Policy CF.2:	Provide recreational, health and social service programs for the Town's elderly and handicapped; and improve and	1	M&C

	increase recreational programs for the Town's children and teenagers.		
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 fire fighting 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:	Insure 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 Navy/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 ED.1:	Develop a strategic plan for economic development with short and long-term goals.	2	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 T.1:	Develop and implement a design improvement program for the Maryland Route 210 corridor which 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 T.2:	Provide an interconnected pedestrian and bicycle path network in the Town.	1	M&C PC
Policy T.3:	Provide adequate parking areas in the commercial district.	1	M&C
Policy T.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 WR.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 is recommended to be completed. Such techniques include: a. Minimizing disturbance by clustering development and	1	PC

	<ul style="list-style-type: none"> b. Vegetative filter strips and other multi-functional landscape areas c. Roof top storage d. Micro-biorentention 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 WR.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 WR.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 WR.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 WR.6:	Refurbish or replace Well #5 to assist in providing sufficient water supply for the planning period.	1	TM
Policy WR.7:	Develop a system for allocating and monitoring sewer and water taps.	1	ENG
Policy WR.8:	Develop and place on line new well, storage tank and booster pump at Well #6.	1	TM
Policy WR.9:	Initiate coordination with Navy Base to interconnect water supplies in event of	2	M&C

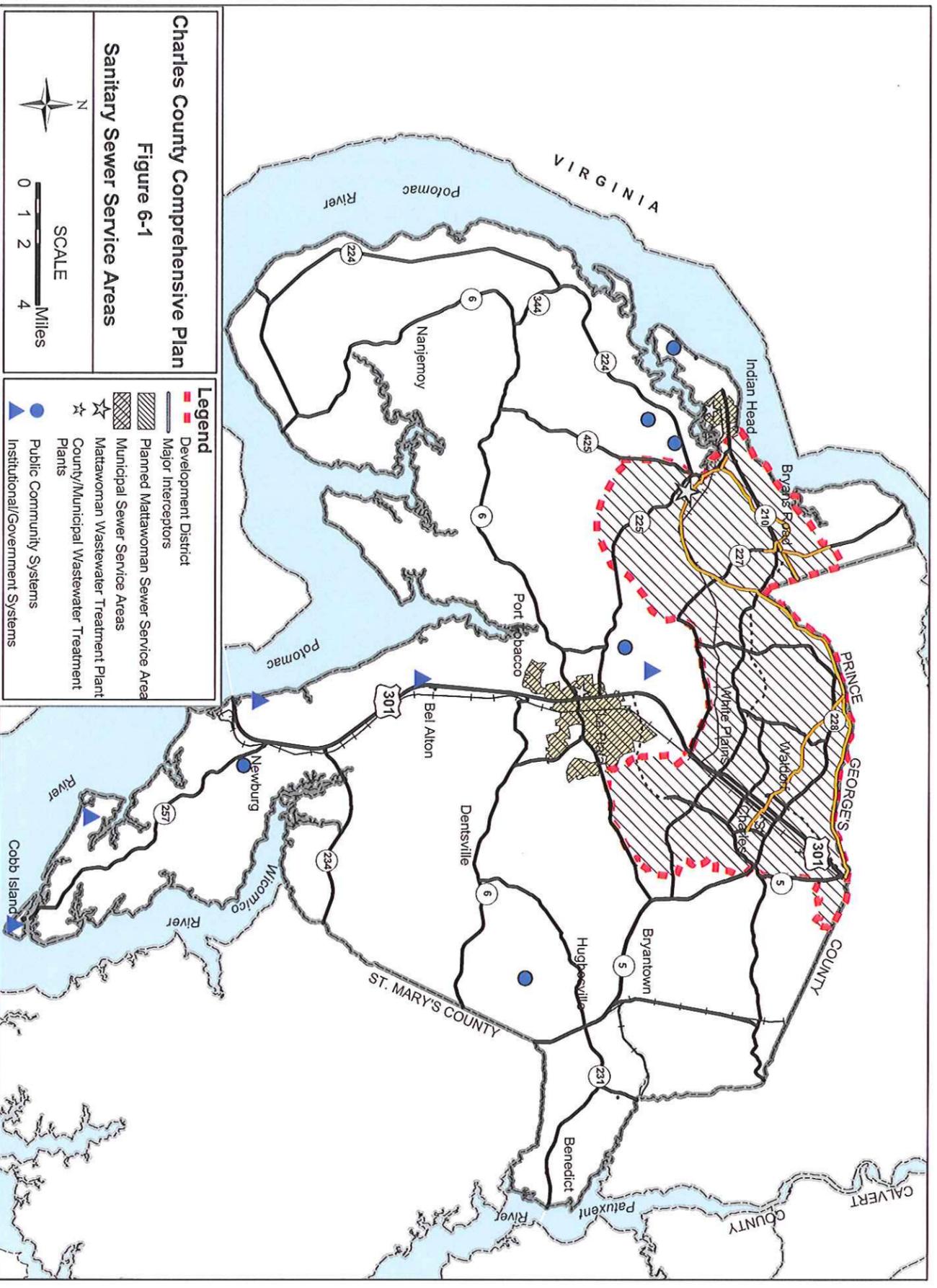
	emergencies.		
Policy WR.10:	Initiate a regional discussion with the County on the future of wastewater treatment for Indian Head and the surrounding communities.	1	M&C TM
Policy WR.11:	Initiate a leak detection program to reduce unaccounted for water to less than 10%.	1	TM
Policy WR.12	Install a wellhead protection plan.	1	ENG M&C
Policy MR.1:	Prohibit mining activities within the Town.	1	PC

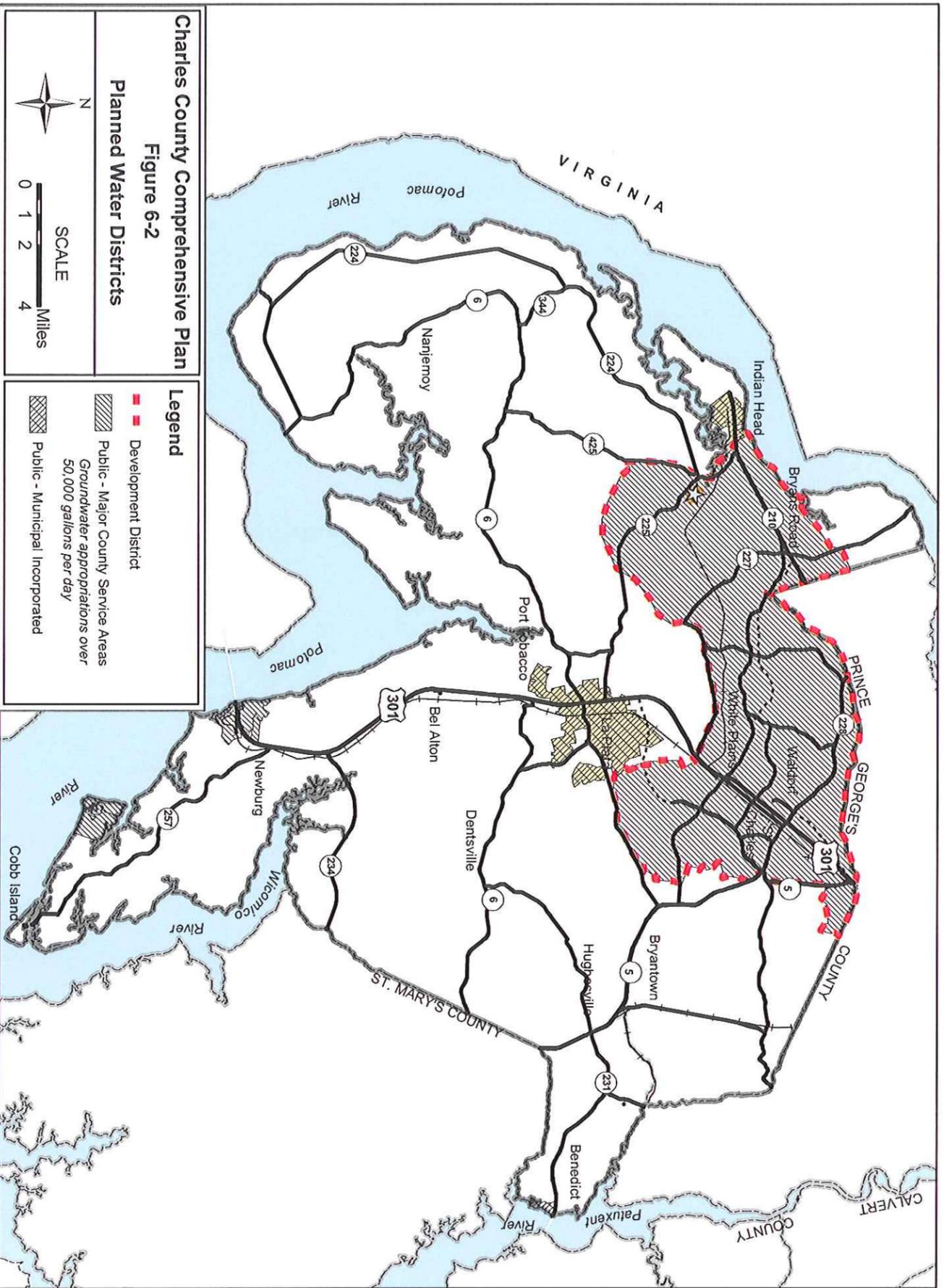
APPENDIX A: RESOURCE MATERIALS

The following resources were used for background material to prepare the 2009 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.

- A. Town of Indian Head 1997 Comprehensive Plan
- B. Charles County Comprehensive Plan – 2006
- C. Charles County Comprehensive Water and Sewer Plan – 2003
- D. Census Bureau and Maryland Department of State Planning Data
- E. Town of Indian Head Zoning Ordinances
- F. Town of Indian Head Subdivision Regulations
- G. Interviews with Town Staff and Officials
- H. Town of Indian Head Water and Sewer Monitoring Reports
- I. Downtown Indian Head Market Analysis and Audit – 1997
- J. Enhanced Nutrient Removal Study for the Town of Indian Head Wastewater Treatment Plant – 2004
- K. Indian Head New Horizons, The Plan for the Future for Downtown – Updated December 2005
- L. Article 66B, Annotated Code of Maryland
- M. Maryland Department of Planning Comment Letter – August 27, 2009

A special thanks to Charles County for the use of their 2006 Comprehensive Plan maps in Appendix A.





Charles County Municipal Population Projections

Indian Head - Population Projections

	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030	1970-2000	2000-2030
Constant Share Method	1,350	1,381	3,531	3,423	3,879	4,116	4,570	5,032	5,483	5,798	2,073	2,375
Lowest Naïve Method (Shift Share 90_00)	1,350	1,381	3,531	3,423	3,434	3,172	2,998	2,724	2,340	1,810	2,073	-1,613
Highest Naïve Method (Shift Share 80_00)	1,350	1,381	3,531	3,423	4,200	4,788	5,707	6,700	7,755	8,682	2,073	5,259
Avg All Naïve Methods	1,350	1,381	3,531	3,423	3,751	3,873	4,162	4,447	4,717	4,879	2,073	1,456
Avg All Naïve Methods (w/o High&Low)	1,350	1,381	3,531	3,423	3,724	3,828	4,085	4,341	4,585	4,732	2,073	1,309
Lowest Devp Pressure Method (90_05, .125 miles)	1,350	1,381	3,531	3,423	3,879	4,117	4,572	5,036	5,490	5,808	2,073	2,385
Highest Devp Pressure Method (00_05, .5 miles)	1,350	1,381	3,531	3,423	3,879	4,120	4,582	5,057	5,526	5,660	2,073	2,437
Avg Devp Pressure Methods	1,350	1,381	3,531	3,423	3,879	4,118	4,576	5,044	5,504	5,828	2,073	2,405
Avg Devp Pressure Methods (w/o High & Low)	1,350	1,381	3,531	3,423	3,879	4,118	4,576	5,043	5,503	5,826	2,073	2,403

La Plata - Population Projections

	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030	1970-2000	2000-2030
Constant Share Method	1,561	2,484	5,841	6,556	7,429	7,883	8,753	9,637	10,502	11,106	4,995	4,550
Lowest Naïve Method (Shift Share 90_00)	1,561	2,484	5,841	6,556	7,200	7,397	7,943	8,447	8,881	9,049	4,995	2,493
Highest Naïve Method (Shift Share 80_00)	1,561	2,484	5,841	6,556	8,120	9,350	11,197	13,224	15,388	17,306	4,995	10,750
Avg All Naïve Methods	1,561	2,484	5,841	6,556	7,489	8,011	8,947	9,907	10,859	11,558	4,995	5,002
Avg All Naïve Methods (w/o High&Low)	1,561	2,484	5,841	6,556	7,420	7,866	8,697	9,535	10,349	10,910	4,995	4,354
Lowest Devp Pressure Method (90_05, .125 miles)	1,561	2,484	5,841	6,556	7,429	7,911	8,846	9,832	10,835	11,586	4,995	5,030
Highest Devp Pressure Method (00_05, .5 miles)	1,561	2,484	5,841	6,556	7,429	7,948	8,967	10,087	11,270	12,213	4,995	5,657
Avg Devp Pressure Methods	1,561	2,484	5,841	6,556	7,429	7,931	8,910	9,967	11,065	11,917	4,995	5,361
Avg Devp Pressure Methods (w/o High & Low)	1,561	2,484	5,841	6,556	7,429	7,931	8,911	9,969	11,069	11,922	4,995	5,366

Port Tobacco Village - Population Projections

	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030	1970-2000	2000-2030
Constant Share Method	0	0	36	15	17	18	20	22	24	25	15	10
Lowest Naïve Method (Shift Share 90_00)	0	0	36	15	1	1	1	1	1	1	15	-14
Highest Naïve Method (Linear regression)	0	0	36	15	29	32	37	42	47	51	15	36
Avg All Naïve Methods	0	0	36	15	10	9	9	10	11	12	15	-3
Avg All Naïve Methods (w/o High&Low)	0	0	36	15	8	7	5	6	6	6	15	-9
Lowest Devp Pressure Method (90_05, .125 miles)	0	0	36	15	17	18	21	24	27	30	15	15
Highest Devp Pressure Method (90_05, .5 miles)	0	0	36	15	17	19	23	28	34	40	15	25
Avg Devp Pressure Methods	0	0	36	15	17	19	22	26	31	36	15	21
Avg Devp Pressure Methods (w/o High & Low)	0	0	36	15	17	19	22	26	32	36	15	21

Sum of Municipalities - Population Projections

	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030	1970-2000	2000-2030
Constant Share Method	2,911	3,865	9,408	9,994	11,325	12,017	13,344	14,691	16,009	16,929	7,083	6,935
Lowest Naïve Method	2,911	3,865	9,408	9,994	10,635	10,570	10,942	11,172	11,222	10,859	7,083	865
Highest Naïve Method	2,911	3,865	9,408	9,994	12,350	14,180	16,940	19,966	23,190	26,038	7,083	16,044
Avg All Naïve Methods	2,911	3,865	9,408	9,994	11,250	11,893	13,118	14,364	15,597	16,448	7,083	6,454
Avg All Naïve Methods (w/o high & low)	2,911	3,865	9,408	9,994	11,152	11,700	12,788	13,882	14,940	15,648	7,083	5,654
Lowest Devp Pressure Method	2,911	3,865	9,408	9,994	11,325	12,046	13,439	14,892	16,353	17,425	7,083	7,431
Highest Devp Pressure Method	2,911	3,865	9,408	9,994	11,325	12,066	13,572	15,172	16,831	18,113	7,083	8,119
Avg Devp Pressure Methods	2,911	3,865	9,408	9,994	11,325	12,067	13,508	15,037	16,600	17,781	7,083	7,787
Avg Devp Pressure Methods (w/o high & low)	2,911	3,865	9,408	9,994	11,325	12,068	13,509	15,039	16,603	17,785	7,083	7,791

Rest of County - Population Projections

	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030	1970-2000	2000-2030
Constant Share Method	44,767	68,886	91,746	110,552	125,275	132,933	147,606	162,509	177,091	187,271	65,785	76,719
Lowest Naïve Method	44,767	68,886	91,746	110,552	125,965	134,380	150,008	166,028	181,878	193,341	65,785	82,789
Highest Naïve Method	44,767	68,886	91,746	110,552	124,250	130,770	144,010	157,234	169,910	178,162	65,785	67,610
Avg All Naïve Methods	44,767	68,886	91,746	110,552	125,350	133,057	147,832	162,836	177,513	187,752	65,785	77,200
Avg All Naïve Methods	44,767	68,886	91,746	110,552	125,448	133,250	148,162	163,318	178,160	188,552	65,785	78,000
Lowest Devp Pressure Method	44,767	68,886	91,746	110,552	125,275	132,904	147,511	162,308	176,747	186,775	65,785	76,223
Highest Devp Pressure Method	44,767	68,886	91,746	110,552	125,275	132,864	147,378	162,028	176,269	186,087	65,785	75,535
Avg Devp Pressure Methods	44,767	68,886	91,746	110,552	125,275	132,883	147,442	162,163	176,500	186,419	65,785	75,887
Avg Devp Pressure Methods	44,767	68,886	91,746	110,552	125,275	132,882	147,441	162,161	176,497	186,415	65,785	75,883

County Total

	47,678	72,751	101,154	120,546	136,600	144,950	160,950	177,200	193,100	204,200	72,868	83,654
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Municipal Share - Population Projections

	Census 1970	Census 1980	Census 1990	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030	Pct Point Change 1970-2000	Pct Point Change 2000-2030
Constant Share Method	6.1%	5.3%	9.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	2.2%	0.0%
Lowest Naïve Method	6.1%	5.3%	9.3%	8.3%	7.8%	7.3%	6.8%	6.3%	5.8%	5.3%	2.2%	-3.0%
Highest Naïve Method	6.1%	5.3%	9.3%	8.3%	9.0%	9.8%	10.5%	11.3%	12.0%	12.8%	2.2%	4.5%
Avg All Naïve Methods	6.1%	5.3%	9.3%	8.3%	8.2%	8.2%	8.2%	8.1%	8.1%	8.1%	2.2%	-0.2%
Avg All Naïve Methods (w/o high & low)	6.1%	5.3%	9.3%	8.3%	8.2%	8.1%	7.9%	7.8%	7.7%	7.7%	2.2%	-0.6%
Lowest Devp Pressure Method	6.1%	5.3%	9.3%	8.3%	8.3%	8.3%	8.4%	8.4%	8.5%	8.5%	2.2%	0.2%
Highest Devp Pressure Method	6.1%	5.3%	9.3%	8.3%	8.3%	8.3%	8.4%	8.6%	8.7%	8.9%	2.2%	0.6%
Avg Devp Pressure Methods	6.1%	5.3%	9.3%	8.3%	8.3%	8.3%	8.4%	8.5%	8.6%	8.7%	2.2%	0.4%
Avg Devp Pressure Methods (w/o high & low)	6.1%	5.3%	9.3%	8.3%	8.3%	8.3%	8.4%	8.5%	8.6%	8.7%	2.2%	0.4%



CHARLES COUNTY GOVERNMENT
 Department of Planning & Growth Management

Charles County Commissioners
 Wayne Cooper, President
 Edith J. Patterson, Ed.D., V.P.
 Reuben B. Collins, II
 Samuel N. Graves, Jr.
 Gary V. Hodge

Roy Hancock
 Acting County Administrator

July 31, 2009



Melvin C. Beall, Jr., P.E.
 Director

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Permits
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Planning
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 Ph: 301-870-3896
 Fax: 301-645-0638

Resource and
 Infrastructure Management
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 Fax: 301-638-2403

24-Hour
 Permit Status Inquiry
 301-645-0600

Mr. Richard D. Parks, P.E.
 Senior Vice President
 Arro Engineering & Environmental Consultants
 1101 Opal Court, Suite 312
 Hagerstown, Maryland 21740

Re: 2009 Indian Head Draft Comprehensive Plan

Dear Mr. Parks:

Thank you for the opportunity to allow the Charles County Department of Planning and Growth Management (PGM) review the Town of Indian Head 2009 Draft Comprehensive Plan. PGM staff has reviewed the draft plan and has the following to offer:

Resource & Infrastructure Management – Jason Groth

Transportation Element

- On page TN-3, under Transit, it would be beneficial to add a sentence or discussion regarding future transit expansion needs, such as commuter bus service expansion.
- On page TN-4, under Policies, it is suggested that the Town consider policies to mandate off-site infrastructure improvements by the developers through an Adequate Public Facilities Ordinance or other regulatory means during the development approval process. This can cover improvements to Water, Sewer, Roads, Schools, and Stormwater Management in order to mitigate for the impacts on local infrastructure.
- On page TN-5, under Policy T.4, it is suggested that the Maryland Transit Administration (MTA) be added as a coordinating State Agency.

Water Resources Element

- On page WRE-8, 1st paragraph, given that the annexation of existing developed land is generally not cost effective without some redevelopment, the assumption that there will be no increase in impervious surface in these areas is difficult to comprehend. It is suggested that there be a minor increase in impervious surface in reality.

Municipal Growth Element

- On page MG-14, 2nd Paragraph following Table MG 12, the 2nd Sentence states that "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 phosphorus loading." This statement seems illogical. Please explain or reference a previous example of how an increase in impervious surface will decrease loadings.

Community Facilities

- On page CF-3, under "Schools", the Town does not mention an allocation policy to manage school capacity with regard to development. It is suggested that Town consider an allocation policy to help manage the local school populations and avoid over-crowding.
- On page CF-7, it is suggested that the Town consider policies to mandate off-site infrastructure improvements by the developers through an Adequate Public Facilities Ordinance or other regulatory means during the development approval process. This can cover improvements to Water, Sewer, Roads, Schools, and Stormwater Management in order to mitigate for the impacts on local infrastructure.
- The Community Facilities Comprehensive Plan Figure is missing a legend. It appears to indicate future sidewalk. Please clarify.

Planning Division – Steven Ball

Open Space & Recreation Element

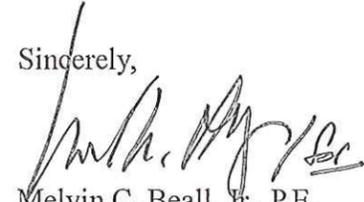
- Staff notes that an objective of the Open Space and Recreation Element is to provide recreational trails and sidewalks, hiker-biker paths and bike lanes that serve non-vehicular modes of transportation. Charles County is currently working on a countywide Bicycle and Pedestrian Facilities Master Plan and recommends that the Comprehensive Plan reflect a coordinated effort between the Town and the County to develop bicycle and pedestrian resources.

Municipal Growth Element

- The Draft Plan proposes several areas of potential annexation of lands in the County that are adjacent to the Town. Because there are fiscal impacts on Charles County in terms of tax differentials for current or future residential developments annexed into municipalities, additional interagency coordination and analysis is warranted.
- Per the requirements of the House Bill 1141, Article 23-A (3) (1), Municipal Growth Element, we understand that the Town is required to develop and coordinate an *Annexation Plan* with the Charles County Commissioners. As part of this Annexation Plan, we also understand that local agreement with the associated jurisdictions is necessary to complete your Municipal Growth Element. According to MDP, the Plan should clearly identify parcels, acreage, existing zoning, proposed land use and density for each property within the proposed growth area. We look forward to discussing the Town's Annexation Plan in the near future.

We hope the comments we have provided will be helpful in finalizing the Town's Comprehensive Plan. If you have any questions or would like to meet with Staff, please contact my Administrative Associate, Ms. Stephanie Moore at (301) 885-1324 to set up a meeting.

Sincerely,

A handwritten signature in black ink, appearing to read 'Melvin C. Beall, Jr.', written in a cursive style.

Melvin C. Beall, Jr., P.E.
Director

cc: reading file

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Maryland Department of Planning
Review Comments
Draft 2009 Indian Head Comprehensive Plan
August 27, 2009

Land Use

- The Town is to be commended for its proactive approach to using tools such as its Town Center Zoning to attract development into key areas of the Town. It was just a few years ago that the Town of Indian Head was all but pleading with developers to come to Indian Head and build. It appears that the Town's planning efforts, including innovative zoning techniques that support new and infill development are having some success in attracting much needed residential and commercial construction.
- The Plan appears to support the creation of pedestrian friendly developments but does not appear to provide any mechanism for achieving this in its' Policies and Implementation Strategies on page LU-6. A more specific statement in support of achieving this goal and mechanism for achieving it should be provided.

Transportation

Re: Policy T.1

- We suggest the Town add the following strategy under Policy T.1: Provide an interconnected local street network including building a local roadway paralleled to MD 210 on the north side of MD 210 through future mixed use and residential development and redevelopment.
- In addition, change Strategy 2 to "In working with SHA, continue managing access and improving existing ingress and egress onto MD 210." There is minimal reference to an access management program mentioned in the plan. It is unclear what strategies were addressed in the program. The plan should include access management strategies defined by the program.

Re: Policy T.2

- The planned pedestrian and bicycle routes and the boardwalk are disconnected as shown on the Transportation Map. We encourage the Town to develop a strategy addressing this issue. Perhaps, the strategy could state that "Provide an interconnected pedestrian and bicycle path network in the Town."

Water and Sewer

- The Plan should contain a water service area map and sewer service area map of the Town and its growth area as to the levels of current service and development status. This will assist in the Town allocation process and infrastructure planning needs.
- The Plan should contain a map that identifies areas of failing water supply and septic development (this could be included in the service area maps).
- It is recommended that the Town implement a wellhead protection plan to protect the raw water supply and investigate all open space land opportunities for the use of wastewater irrigation.
- Coordinate all policies and recommendations of other elements in the efforts of minimizing nutrient impacts to the Mattawoman and Potomac River Watersheds.
- Implement an environmental site design (ESD) program for all new development.
- Under Policy CF.5, add the following strategy,
 - Update the County Water and Sewer Plan annually with infrastructure improvements, water and sewer usage information, and funding information on all Capital Improvement Program (CIP) projects involving water and sewer and stormwater projects.

Water Resource Element

The Town of Indian Head WRE is incomplete but would meet the requirements of HB1141 by addressing the following comments. The most important comments to include are in **bold**. The WRE does not yet effectively address the following purposes of the law and/or State guidance, as follows:

- Identify suitable receiving waters and land areas to meet the stormwater management and wastewater treatment and disposal needs of existing and future development proposed in the land use element of the plan, considering available data provided by MDE (Section 1.03(iii), Article 66B).
- The WRE should, for each watershed, calculate the total forecasted nutrient load, which includes nutrient loads from current and future WWTP discharge, septic tanks, and stormwater runoff (MDP M&G 26, p. 13).
- Does the WRE identify strategies to protect current and future water sources from pollution (MDP M&G 26, p. 27).

To ensure the adequacy of water supplies to support existing and future development as proposed in the land use plan, the Indian Head Comprehensive Plan includes demand forecasts and compares this to expected capacity (p. 4). **The plan does not yet discuss methods of protecting the town's source water.**

Comments on the water demand analysis include:

- Clarify that the 279,957 gpd figure is actual withdrawal and 480,000 gpd is the current potential for withdrawal (p. 1).
- Correct the actual water consumption figures. According to the data provided (p. 1), the actual water consumption should be 155 gpd per connection ($279,957/1,372$) and 204 gpd including water loss ($.76*(279,957/1,372)$).
- The WRE uses a water planning figure of 252 gpd per EDU to estimate remaining capacity to serve 21 EDUs (p. 4). The MDE Water Capacity Management Plan guidance recommends using a planning figure of 250 gpd to estimate future water demand per household (or Equivalent Dwelling Unit).
- The Water Storage Analysis (p. 6) uses 182 gpd per EDU to calculate average daily demand. Check whether this figure should be the same as current water usage per household (i.e., 155 gpd per EDU).
- The first paragraph under Table WRE-6 states that “prior to the end of the planning period... additional storage capacity of approximately 30,000 gallons will be needed.” (p.6). The approximate year in which this storage could be needed should be identified and a plan to provide the additional storage before there is a shortfall should be explained.
- Plans to reduce the amount of water loss should be provided.
- Table 5 (p. 5) includes the remaining capacity available for growth in terms of drinking water. Below this table it states that the capacity will be exceeded by year 2017. It would be helpful if the plan provided the water demand data in five year increments in a table in order to determine when capacity will be reached.
- The plan does not state whether there are any private wells in the town. Please add this information to the WRE. If wells exist, please note whether there are any plans to connect any failing wells to the public water system and the capacity needed to serve them. The plan could then discuss whether they are susceptible to pollution and whether these might be included in future source water protection plans.
- The plan states that the water appropriation permit expires on September 1, 2007. Since this date has passed, has a new permit been approved? If so, please update the WRE to reflect this.

Comments on the proposed methods for protecting the town's source water:

- **There is no discussion of source water protection in the WRE. Please add this information to the plan.**

- The plan states that the Patapsco Aquifer, from which Indian Head obtains its water, has adequate water quality (p. 4). Please add a reference to a study or Source Water Assessment that confirms this.
- The Indian Head Comprehensive Plan identifies the streams affected by land use impacts (p. 8) and identifies the WWTP discharge point location, although some clarification may be necessary (p. 6). The plan includes a nonpoint source pollution forecast (p. 8, 10) **but does not include a point source pollution forecast or a discussion whether the streams are suitable receiving waters for expected land use impacts.**

Comments on the sewer demand analysis include:

- The figure 24,750 gpd average daily flows is identified as the demand of approved development yet no planning figure for gpd/EDU is given. The figure is also not tied to a specific number of approved EDUs (p. 4). Please provide this information.
- Indicate whether there are plans to connect the two remaining septic systems within the town (p. 6), and if so, the amount of capacity needed to serve those homes.
- The WRE uses 200 GPD/EDU as the planning figure to determine remaining sewer capacity (p. 8). The MDE Wastewater Capacity Management Plan guidance recommends using a planning figure of 250 gpd to estimate future wastewater demand per household (or Equivalent Dwelling Unit).
- The WRE discusses the available sewer capacity and states, “Based on growth projections, these taps will be exhausted by year 2016” (p. 8). It would be helpful if the plan provided the sewer demand data in five year increments in a table in order to determine when capacity will be reached.
- Please cite a source or study for the following statement, “Once the inflow and infiltration is effectively reduced, additional capacity for 300 to 400 new taps should be available depending on the effectiveness of the reduction program” (p. 8).
- It would be helpful to make a reference to the Community Facilities Map that shows the location of WWTP and the wells since the map is not included in the WRE section.

Comments on identifying suitable receiving waters:

- **Provide a point source pollution forecast.**
- **Combine, in one table, point source loads, nonpoint source loads, and total (PS + NPS) loads, both current and future. Future pollution loads should be based on remaining**

capacities for existing/current development, future development (current + approved development), and buildout through the planning period. This table should provide a comprehensive understanding of loads associated with expected growth and will identify the potential need for additional planning caused by loads that exceed limitations.

- Ginny Creek is listed as the discharge point in the WRE, yet MDE lists the body of water receiving the discharge as Harrison Cut.
- The plan does not yet discuss whether the town's receiving waters (e.g., Ginny Creek or Harrison Cut, Mattawoman Creek) are suitable receiving waters for expected land use impacts. This discussion needs to be added to the plan. The plan can discuss suitability by referencing TMDLs and nutrient loading data and forecasts. If there is insufficient information (e.g., no TMDLs established yet) to make this determination, the WRE should state that this is the case.
- On page 11 of the WRE, 1st paragraph, 3rd and 4th sentences: the discussion should acknowledge that the capture of skeptics' will reduce the nutrient impacts by "x" amount and that the land conversion from development and infill to future land uses will change the nutrient loads by "y" amount. If the case is a no "net" increase, it will be validated by the data. This same paragraph is on page MG-14. Adjust both accordingly.

Other water resource planning comments:

- In all cases where a table is used to compare demand and capacity it would be helpful to do so in increments

Public Schools

- On page 2 under the Public Schools Section it states that " the planning process for public schools is a function of the Board of Education, which has its own School Facilities Master Plan. As a result, this Comprehensive Plan does not address specific facilities needs.
- Town officials are encouraged to collaborate closely with the County Local Educational Agency (LEA) to ensure that up-to-date information is being disseminated to address shared opportunities to evaluate the impact of growth on public school facilities. Prevalent data such as 2008 actual enrollments, school enrollment projections and capacity data should be included as part of the amended plan. This information is used by the Public School Construction staff as another tool to measure consistency between the local planning process and the county's Educational Facilities Master Planning efforts.

The following data can be found in the 2009 EFMP:

School	SRC	2008 Actual Enrollment	Utilization
Indian Head E	404	371	92%
General Smallwood M	659	513	78%
Henry E Lackey H	1612	1399	95%

- According to the 2009 EFMP, Indian Head Elementary school received planning approval in FY'08 for a full-day Kindergarten addition/renovation. The Local Educational Agency will be seeking State funding approval in FY 2011.

Population Growth

- First, the population projections that are credited to "Arro Consulting" are identical to those produced by MDP. However, household projections differ, with MDP projections being higher than those used by the Town (MDP projections shown below).

Indian Head Projections	Census 2000	Proj 2005	Proj 2010	Proj 2015	Proj 2020	Proj 2025	Proj 2030
Population	3,423	3,879	4,120	4,582	5,057	5,526	5,860
Households	1,222	1,391	1,495	1,691	1,895	2,094	2,251

- The Municipal Growth Element also contains projections of fire, police, and parkland needs that are based on population projections. The data in these sections matches the data in the projections.
- All that is missing is information on past population trends that may be useful for planning purposes. For example, the population of the Town was 1,381 persons in 1980, but was 3,531 in 1990. There is little discussion of the way in which past growth occurred and was accommodated. Population projection data is also used in other elements (Community Facilities, Housing, and Water Resources) and this data matches the data in the Municipal Growth Element.

Housing Unit and Household Projections

- The Housing Element contains data in Table H-1 on the expected number of households that matches the data in the Municipal Growth Element but does not match MDP's data shown above. However, the source of the projections in that table is the "Department of State Planning." It is unclear if this projection data in the Plan is from an older MDP forecast or it was actually created by Arro Consulting. Either the data should be corrected to match the current MDP forecast or the source should be changed.

Workforce and employment

- The Economic Development Element contains MDP forecast data on future employment for the County. Data for Indian Head has been projected from the County data using the proportional share method. Due to the lack of local data, this is probably the best method to use for a small area such as Indian Head.