2017

QUEEN ANNE'S COUNTY

LAND PRESERVATION, PARKS & RECREATION PLAN

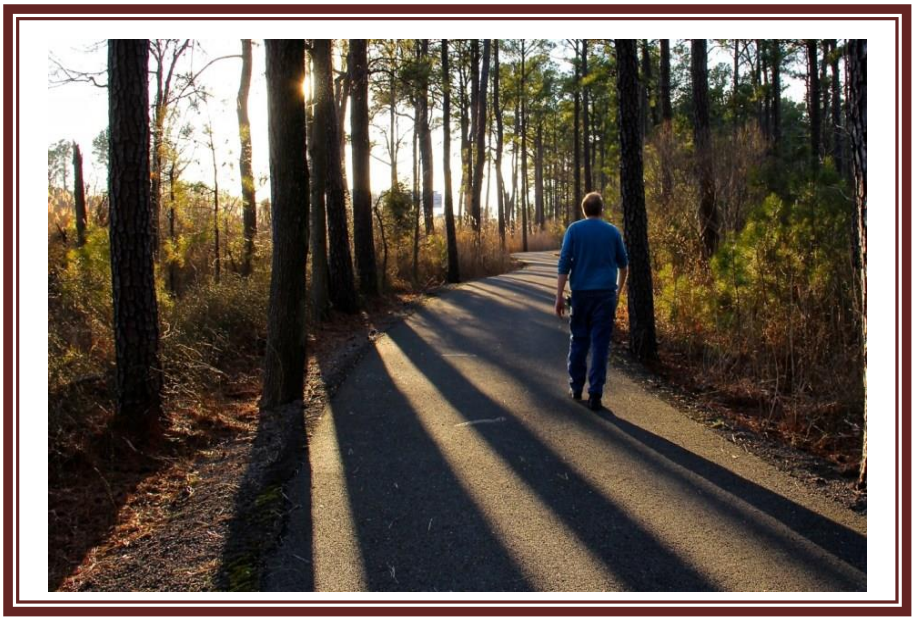
2017

Land Preservation, Parks & Recreation Plan

Queen Anne's County
Department of Parks

1945 4-H Park Road
Centreville, MD 21617
410-758-0835

“Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul.” - John Muir



2017

Land Preservation, Parks & Recreation Plan

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Table of Contents

Executive Summary

Section I . . . . . pgs. 1-12

Plan Introduction pg. 1

Purpose of the Plan pg.1

Local Agency Preparation of the Plan pg.2

LPPRP's Relationship to Local Comprehensive Plan pg.2

LPPRP's Relationship to State Planning pg.4

Geographic Information – Physical Characteristics pg.5

Demographic Characteristics pg.7

Unique Heritage and Setting pg.9

Parks and Recreation Overview pg.10

Natural Resource Conservation Overview pg.11

Agricultural Land Preservation Overview pg.12

Section II . . . . . pgs. 13-50

Parks & Recreation pg.13

Executive Summary – Parks Overview pg.14

Queen Anne's County Recreation pg.18

Benefits of Public Parklands pg. 19

Goals & Objectives for Parks & Recreation pg.20

Park Types of Queen Anne's County pg.20

QAC Goals for Parks and Recreation pg.26

Implementing Programs pg.34

Park Funding pg.34

Inventory of Existing Public Parks and Recreation Facilities pg.36

Measuring User Demand pg.37

Public Engagement & Outreach pg.38

Survey Feedback pg.39

Data on Usage and Participation Rates pg.40

Level of Service Analysis pg.44

Proximity Analysis pg.46

Park Equity Analysis pg.49

Comparing Proximity &Equity Results to Identify Gaps pg.49

Capital Improvement Plan pg.50

Section III pgs.51-64

Natural Resource Land Conservation pg.51

Executive Summary – Overview pg.51

Public Benefits of Natural Resource Conservation pg.52

Goals for Natural Resource Land Conservation pg.54

State Goals for Natural Resource Conservation pg.55

County Goals for Natural Resource Conservation pg.56

Implementing Ordinances and Programs pg.58

Mechanisms Used for Natural Resource land Protection pg.59

Local Natural Resource Conservation pg.60

Planning for Coastal Resiliency pg.63

Inventory of Protected Natural Resource Lands pg.64

Mapping Protected Natural Resources pg.64

Section IV pgs.65-80

Agricultural Land Preservation

Executive Summary pg.65

Goals for Agricultural Land Preservation pg.69

State Goals for Agricultural Land Preservation pg.69

County Goals for Agricultural Land Preservation pg.70

Benefits of Agricultural Land Preservation pg.76

Accomplishments of Local Agricultural Preservation pg.77

Inventory of Agricultural Land Preservation pg.78

MALPF Certified Strategies & Actions pg.78

Mapping Agricultural land Preservation pg.79

Appendices:

Appendix A - Parks Needs Assessment Survey Questions

Appendix B - Parks Needs Assessment Survey Results

Appendix C - Relevant Maps/GIS Data Sharing

Appendix D - NRPA Study *" Americans' Broad-Based Support for Local Recreation and Park Services"*

Appendix E – Queen Anne's County Sea Level Rise and Coastal Vulnerability Assessmentand Implementation Plan

Appendix F - 2017 Land Preservation, Parks & Recreation Plan Guidelines

Executive Summary

Plan Update:

This 2017 update of the Queen Anne's County Land Preservation, Parks and Recreation Plan (LPPRP) provides key information to guide the Department of Parks in moving forward to achieve local and state goals and recommendations related to parks, recreation and open space. The County park system, comprised of public parks, public landings and marinas, a public golf course, airport, recreational facilities and open space all contribute to the quality of life of citizens and attract many visitors to the County.

This Plan update serves to provide goals and recommendations as well as key information obtained through a public process to assist in achieving these recommendations. This Plan update also maintains Queen Anne's County's eligibility to receive annual grant funding from Maryland's Program Open Space*, a long time important source of funding for Queen Anne's County in developing its park system through land acquisition and project development.

Key Issues

As identified in the 2010 Queen Anne's County Comprehensive Plan update, and through information collected through the 2016 Parks Needs Assessment Survey, the following key issues have been identified and provide a road map for moving forward with goals and recommendations of the Queen Anne's County Department of Parks:

- Provide clean, safe and well-maintained park and recreational facilities;
- Provide a vast array of recreational opportunities;
- Preserve open space for natural resource conservation and outdoor recreation; *and*
- Adhere to the Vision of Queen Anne's County of being a great place to live, work and play.

Goals and Recommendations

As Queen Anne's County Department of Parks moves forward attention should continue to balance maintenance of existing parks and recreational facilities, renovation of existing facilities and structures, new amenity development and land acquisition as may be necessary in order to continue to provide an outstanding park and recreation system, conserve natural resources and agricultural lands and to provide even greater opportunities for County citizens and visitors.

* Maryland's Program Open Space Localside Program (per *Section 5-905(b)(2) of the Natural Resources Article – Annotated Code of Maryland*).

Section I

PLAN INTRODUCTION

This Chapter outlines the purpose and objective for preparing the 2017 Queen Anne's County Land Preservation, Parks & Recreation Plan (LPPRP).

Purpose of the Plan

The State of Maryland requires that counties update their local Land Preservation, Parks and Recreation Plans (LPPRP) every five years one year prior to the revision of the statewide Maryland Land Preservation and Recreation Plan. The LPPRPs help guide local government's use of State Program Opens Space (POS) grant funding and other programs related to three land resource elements:

- Parks and Recreation
- Agricultural Land Preservation
- Natural Resource Conservation.

This 2017 LPPRP has been developed in accordance with guidelines issued in 2016 by the Maryland Department of Planning and Maryland Department of Natural Resources and outlined in the *Guidelines for State and Local Land Preservation, Parks, and Recreation Planning 2017* include in Appedix F of this report. For all three Land Use Elements, the goal is to examine the set of State and Local efforts, determine if they are complimentary or conflicting, identify shortcomings, and recommend objectives and improvements in planning, policy making and implementation for State and local administration and lawmakers.

Figure SI -1

Overall Community Vision of Queen Anne's County

The VISION is to continue the ethic that the County remains a quintessential rural community with the overall character of the County preserved as:

- *A predominantly rural county with small towns connected by creeks and county roads through fields and forest- a great place to live;*
- *A county that encourages agriculture, seafood and maritime industries, tourism and outdoor sports, small business and high tech enterprise –- a good place to work;*
- *A county that is a faithful steward of its natural and cultural heritage – a good neighbor for the Bay and other Eastern Shore counties;*
- *A county in which development does not impair the quality of life enjoyed by all – a community that protects the expectation and opportunities of all its citizens;*
- *A county that supports the highest quality of education that seeks to fully prepare its citizen for the future.*

Local Agency Preparation of Plan

The Queen Anne's County Department of Parks is responsible for the preparation of the LPPRP. This effort is in total cooperation and collaboration with other county government departments, advisory groups and with public participation.

Planning and GIS assistance was provided by the County Department of Planning & Zoning. In addition, the following groups and entities contributed to preparation of the Plan:

- Queen Anne's County Parks and Recreation Advisory Board (PRAB)
- Queen Anne's County Department of Community Services and Recreation
- Queen Anne's County Soil Conservation & Agricultural Land Preservation
- Queen Anne's County Department of GIS
- Business Economic And Community Outreach Network of Salisbury (BEACON)
- Parks Survey Focus Group

Queen Anne's County Department of Parks contracted with the BEACON - Business, Economic And Community Outreach Network @ Salisbury University for assistance with conducting an initial Needs Analysis Survey, collection of survey data and compilation of Survey results. Two special meetings were held with members of the Parks & Recreation Advisory Board (PRAB), where the public was welcome to review the survey to be conducted and later to review survey data collected. In addition, staff presented the survey to be conducted and purpose of the survey and the LPPRP itself during several public meetings, including the Bike & Pedestrian Advisory Committee, the Kent Narrows Development Foundation, and Queen Anne's County Planning Commission.

The public survey was heavily advertised online via the Queen Anne's County Government website and associated departmental websites, social media including Facebook, and Twitter, local press release(s), and roadside banner signage. Computers were set up at local libraries, the Planning & Zoning office, Chesapeake Heritage & Visitors Center and the Parks headquarters offices for accessibility to the public. Additionally, the survey was sent to guidance counselors within the two County high schools, for distribution/administering the survey to high school students. The Survey was announced during County Commissioner regular meetings and public encouraged to participate.

The LPPRPs Relationship to the County Comprehensive Plan

The Land Preservation, Parks, and Recreation Plan functions as part of the adopted *2010 Queen Anne's County Comprehensive Plan* and is one of a series of plans, regulations, and guidance documents that together form the County's Planning program. As such, this LPPRP will serve as a guide with respect to parks, recreational programs, agricultural preservation, open space, and

natural resource protection. The LPPRP includes forecasting what may occur in the future based upon existing patterns and anticipated trends. The LPPRP has been prepared to be consistent with pertinent County Comprehensive Plan policies, goals, objectives and the overall community vision for Queen Anne's County.

Along with the Comprehensive Plan, this LPPRP serves to strengthen the County's long - standing principles guiding growth management policies and recommendations outlined since 1987. Support for creating sustainable communities consistent with the 2030 vision for the County and Maryland's Smart Growth goals and objectives continue to drive the appropriate use of the land in Queen Anne's County.

Following the approval of the LPPRP and adoption by the Queen Anne's County Commissioners which is anticipated to occur in early 2018, this LPPRP will replace the 2012 LPPRP, and as such, any references made in the 2010 Comprehensive Plan.

Resident @ Blue Heron Golf Course

Local LPPRP's Relationship to State Planning

The LPPRP responds to State plans, programs and policies and supports the 12 Visions for Planning in Maryland providing guiding principles for the development of local planning.

Figure SI-2

Maryland's Twelve Planning Visions

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

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

3. ***Growth Areas*** *- growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers;*

4. ***Community Design*** *- compact, mixed–use, walkable design consistent with existing community character and located near available or planned transit options is encouraged to ensure efficient use of land and transportation resources and preservation and enhancement of natural systems, open spaces, recreational areas, and historical, cultural, and archeological resources;*

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

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

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

8. ***Economic Development -*** *economic development and natural resource–based businesses that promote employment opportunities for all income levels within the capacity of the State's natural resources, public services, and public facilities are encouraged;*

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

10. ***Resource Conservation -*** *waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved*;

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

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

Geographic Information

Queen Anne's County is located on Maryland's Eastern Shore bound by the Chesapeake Bay to the west. It is the first county entered when crossing the Chesapeake Bay Bridge from the Western Shore. Queen Anne's County is comprised of approximately 238,337 acres or 373 square miles. Its topography is largely level to gently rolling farmland, all close to sea level, and is bound in large part by water. The County is bound to the north by the Chester River and Kent County, Maryland; to the east by the Tuckahoe River and Caroline County, Maryland and Kent County, Delaware; to the south by the Wye River, Eastern Bay and Talbot County, Maryland and to the west, by the Chesapeake Bay. It is fair to say that the Chesapeake Bay and its tributaries have a strong influence on land use, conservation and recreation in Queen Anne's County.

Queen Anne's County is located 34 vehicular miles from the City of Baltimore, 48 miles from the Nation's Capital of Washington D.C., and approximately 100 miles from the City of Philadelphia. Major interstate highways traverse the County in a north/south direction as well as an east/west direction. With its proximity to major cities Queen Anne's County provides easy overnight access to major economic centers, tourism destinations and the Nation's largest estuary, the Chesapeake Bay.

The Town of Centreville has served as the County seat since 1782 and still functions as the home of County government, law enforcement, and is recognized as one of only two National Register Historic Districts in Queen Anne's County. There are eight municipalities within the County: Queenstown, Centreville, Church Hill, Sudlersville, Barclay, Templeville, Queen Anne and Millington.

Queen Anne's County is governed by a Code Home Rule system consisting of five elected County Commissioners. The County is established under four Commissioner Districts. Four Commissioners each represent a district, with one Commissioner being elected At- Large, representing all four districts of the County. The current Commission was elected in 2014 and serves through 2018.

Figure SI-3

Queen Anne's County Location in State of Maryland

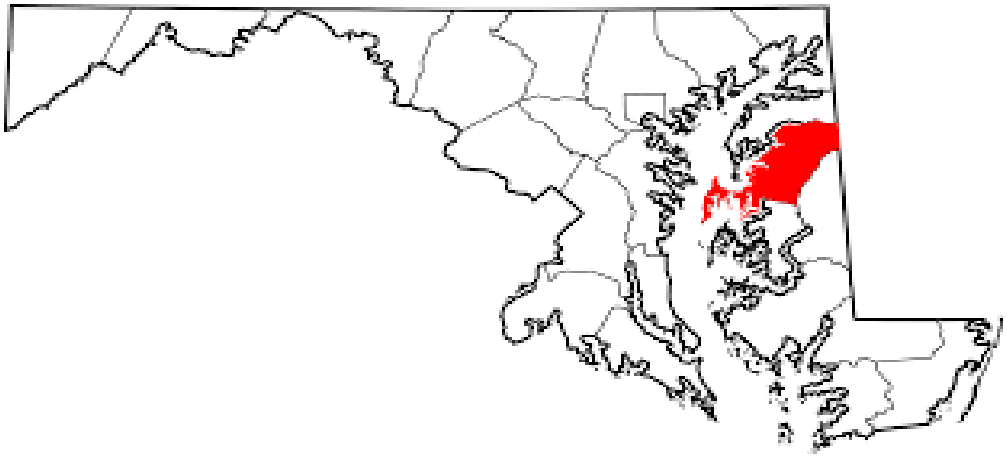

Figure SI-4

Queen Anne's County Location & County Seat

Demographic Characteristics

Based on information from the 2010 U.S. Census, the population of Queen Anne's County was 47,798 people, an increase of a little more than 15% since the year 2000. This number accounts for 17,785 households* and 13,314 families** residing in the county. The population density equals 128.5 inhabitants per square mile.

Of the 17,85 households*, 34.4% had children under the age of 18 living at home, 60.3% were married couples living together, 9.2% had a female head of household with no husband present, 26.1% were non-families, and 20.6% of all households were made up of individuals. The average household size was 2.63 persons and the average family size was 3.04. The median age was 42.6 years of age.

The Maryland Department of Planning has projected a population of 53,600 by the year 2020 and 57,350 by 2025. Most areas of the County are expected to experience continued growth.

The median income for a household in Queen Anne's County at the time of the 2010 Census was $81,096, and the median income for a family was $89,188. Males had a median income of $57,218 versus females with a median income of $43,371. The per capita income for the county was $35,964. About 3.8% of families and 5.5% of the population were below the national poverty level, including 7.0% of those under age 18 and 6.1% of those of age 65 or over.

Queen Anne's County utilizes United States Census data for demographic information. Included in the following pages are demographics per the US April 1, 2010 Census, as well as demographics per the US Population Estimates, July 1, 2017.

***** A **household** is defined by the United States Census Bureau as all the persons who occupy a housing unit as their usual place of residence.

****** A **family** is defined by the United States Census Bureau as "a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together; all such people (including related subfamily members) are considered as members of one family."

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UNITED STATES CENSUS BEREAU - POPULATION ESTIMATES, JULY 1, 2017

QUEEN ANNE'S COUNTY, MARYLAND

	QUEEN ANNE'S COUNTY	UNITED STATES
PEOPLE		
Population estimates, July 1, 2017, (V2017)	NA	325,719,178
Population estimates, July 1, 2016, (V2016)	48,929	323,127,513
Population estimates base, April 1, 2010, (V2017)	NA	308,758,105
Population estimates base, April 1, 2010, (V2016)	47,788	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2017, (V2017)	NA	5.5%
Population, percent change - April 1, 2010 (estimates base) to July 1, 2016, (V2016)	2.4%	4.7%
Population, Census, April 1, 2010	47,798	308,745,538
AGE & SEX		
Persons under 5 years, percent, July 1, 2016, (V2016)	4.9%	6.2%
Persons under 5 years, percent, April 1, 2010	5.7%	6.5%
Persons under 18 years, percent, July 1, 2016, (V2016)	21.7%	22.8%
Persons under 18 years, percent, April 1, 2010	23.8%	24.0%
Persons 65 years and over, percent, July 1, 2016, (V2016)	18.2%	15.2%
Persons 65 years and over, percent, April 1, 2010	14.9%	13.0%
Female persons, percent, July 1, 2016, (V2016)	50.4%	50.8%
Female persons, percent, April 1, 2010	50.3%	50.8%
RACE & HISPANIC ORIGIN		
White alone, percent, July 1, 2016, (V2016)(a)	89.7%	76.9%
Black or African American alone, percent, July 1, 2016, (V2016)(a)	6.6%	13.3%
American Indian and Alaska Native alone, percent, July 1, 2016, (V2016)(a)	0.5%	1.3%
Asian alone, percent, July 1, 2016, (V2016)(a)	1.2%	5.7%
Native Hawaiian and Other Pacific Islander alone, percent, July 1, 2016, (V2016)(a)	0.1%	0.2%
Two or More Races, percent, July 1, 2016, (V2016)	1.9%	2.6%
Hispanic or Latino, percent, July 1, 2016, (V2016)(b)	3.6%	17.8%
White alone, not Hispanic or Latino, percent, July 1, 2016, (V2016)	86.7%	61.3%
POPULATION CHARACTERISTICS		
Veterans, 2012-2016	3,669	19,535,341
Foreign born persons, percent, 2012-2016	3.90%	13.20%
HOUSING		
Housing units, July 1, 2016, (V2016)	21,032	135,697,926
Housing units, April 1, 2010	20,140	131,704,730
Owner-occupied housing unit rate, 2012-2016	80.9%	63.6%
Median value of owner-occupied housing units, 2012-2016	$343,900	$184,700
Median selected monthly owner costs -with a mortgage, 2012-2016	$2,080	$1,491
Median selected monthly owner costs -without a mortgage, 2012-2016	$638	$462
Median gross rent, 2012-2016	$1,295	$949
Building permits, 2016	145	1,206,642
FAMILIES & LIVING ARRANGEMENTS		
Households, 2012-2016	17,785	117,716,237
Persons per household, 2012-2016	2.71	2.64

Living in same house 1 year ago, percent of persons age 1 year+, 2012-2016	87.6%	85.2%
Language other than English spoken at home, percent of persons age 5 years+, 2012-2016	5.2%	21.1%
EDUCATION		
High school graduate or higher, percent of persons age 25 years+, 2012-2016	91.6%	87.0%
Bachelor's degree or higher, percent of persons age 25 years+, 2012-2016	35.0%	30.3%
HEALTH		
With a disability, under age 65 years, percent, 2012-2016	7.5%	8.6%
Persons without health insurance, under age 65 years, percent 5.8%	ψ5.8%	ψ10.1%
ECONOMY		
In civilian labor force, total, percent of population age 16 years+, 2012-2016	68.2%	63.1%
In civilian labor force, female, percent of population age 16 years+, 2012-2016	64.2%	58.3%
Total accommodation and food services sales, 2012 ($1,000)(c)	112,975	708,138,598
Total health care and social assistance receipts/revenue, 2012 ($1,000)(c)	74,091	2,040,441,203
Total manufacturers shipments, 2012 ($1,000)(c)	208,329	5,696,729,632
Total merchant wholesaler sales, 2012 ($1,000)(c)	353,033	5,208,023,478
Total retail sales, 2012 ($1,000)(c)	547,492	4,219,821,871
Total retail sales per capita, 2012(c)	$11,266	$13,443
TRANSPORTATION		
Mean travel time to work (minutes), workers age 16 years+, 2012-2016	35.3	26.1
INCOME & POVERTY		
Median household income (in 2016 dollars), 2012-2016	$85,891	$55,322
Per capita income in past 12 months (in 2016 dollars), 2012-2016	$39,593	$29,829
Persons in poverty, percent	7.3%	12.7%
BUSINESSES		
Total employer establishments, 2015	1,371	7,663,938
Total employment, 2015	11,503	124,085,947
Total annual payroll, 2015 ($1,000)	414,495	6,253,488,252
Total employment, percent change, 2014-2015	-1.1%	2.5%
Total non-employer establishments, 2015	4,704	24,331,403
All firms, 2012	4,907	27,626,360
Men-owned firms, 2012	2,873	14,844,597
Women-owned firms, 2012	1,463	9,878,397
Minority-owned firms, 2012	216	7,952,386
Nonminority-owned firms, 2012	4,470	18,987,918
Veteran-owned firms, 2012	685	2,521,682
Nonveteran-owned firms, 2012	3,951	24,070,685
GEOGRAPHY		
Population per square mile, 2010	128.5	87.4
Land area in square miles, 2010	371.91	3,531,905.43
FIPS Code	24035	0

Value Notes

Ψ This geographic level of poverty and health estimates is not comparable to other geographic levels of these estimates.

Some estimates presented here come from sample data, and thus have sampling errors that may render some apparent differences between geographies statistically indistinguishable.

For more information visit: https://www.census.gov/quickfacts/fact/table/queenannescountymaryland,US#viewtop

2010 Census Profile of General Population and Housing Characteristics

Area Name : Queen Anne's County, Maryland

Subject	Number	Percent
GENDER AND AGE		
Total Population	47,798	100.0%
Under 5 Years	2,711	5.7%
5 to 9 Years	3,227	6.8%
10 to 14 Years	3,334	7.0%
15 to 19 Years	3,211	6.7%
20 to 24 Years	2,256	4.7%
25 to 29 Years	2,161	4.5%
30 to 34 Years	2,180	4.6%
35 to 39 Years	2,876	6.0%
40 to 44 Years	3,833	8.0%
45 to 49 Years	4,399	9.2%
50 to 54 Years	4,045	8.5%
55 to 59 Years	3,367	7.0%
60 to 64 Years	3,057	6.4%
65 to 69 Years	2,572	5.4%
70 to 74 Years	1,693	3.5%
75 to 79 Years	1,300	2.7%
80 to 84 Years	835	1.7%
85 Years and Over	741	1.6%
Male Population	23,743	49.7%
Under 5 Years	1,358	2.8%
5 to 9 Years	1,633	3.4%
10 to 14 Years	1,704	3.6%
15 to 19 Years	1,690	3.5%
20 to 24 Years	1,194	2.5%
25 to 29 Years	1,116	2.3%
30 to 34 Years	1,084	2.3%
35 to 39 Years	1,369	2.9%
40 to 44 Years	1,856	3.9%
45 to 49 Years	2,224	4.7%
50 to 54 Years	1,964	4.1%
55 to 59 Years	1,702	3.6%
60 to 64 Years	1,487	3.1%
65 to 69 Years	1,255	2.6%
70 to 74 Years	846	1.8%
75 to 79 Years	623	1.3%
80 to 84 Years	358	0.7%
85 Years and Over	280	0.6%
Female Population	24,055	50.3%
Under 5 Years	1,353	2.8%
5 to 9 Years	1,594	3.3%
10 to 14 Years	1,630	3.4%
15 to 19 Years	1,521	3.2%
20 to 24 Years	1,062	2.2%
25 to 29 Years	1,045	2.2%
30 to 34 Years	1,096	2.3%
35 to 39 Years	1,507	3.2%
40 to 44 Years	1,977	4.1%
45 to 49 Years	2,175	4.6%
50 to 54 Years	2,081	4.4%
55 to 59 Years	1,665	3.5%
60 to 64 Years	1,570	3.3%
65 to 69 Years	1,317	2.8%
70 to 74 Years	847	1.8%
75 to 79 Years	677	1.4%
80 to 84 Years	477	1.0%
85 Years and Over	461	1.0%

Subject	Number	Percent
Median Age (Years)	42.60	(X)
Male	42.00	(X)
Female	43.20	(X)
Population 16 Years and Over	37,812	79.1%
Male	18,663	39.0%
Female	19,149	40.1%
Population 18 Years and Over	36,424	76.2%
Male	17,942	37.5%
Female	18,482	38.7%
Population 21 Years and Over	34,831	72.9%
Male	17,101	35.8%
Female	17,730	37.1%
Population 62 Years and Over	8,993	18.8%
Male	4,250	8.9%
Female	4,743	9.9%
Population 65 Years and Over	7,141	14.9%
Male	3,362	7.0%
Female	3,779	7.9%
RACE		
Total Population	47,798	100.0%
One Race	46,976	98.3%
White	42,397	88.7%
Black or African American	3,298	6.9%
American Indian and Alaska Native	149	0.3%
Asian :	469	1.0%
Asian Indian	96	0.2%
Chinese	87	0.2%
Filipino	70	0.1%
Japanese	13	0.0%
Korean	80	0.2%
Vietnamese	39	0.1%
Other Asian /1	84	0.2%
Native Hawaiian and Other Pacific Islander	12	0.0%
Native Hawaiian	4	0.0%
Guamanian or Chamorro	1	0.0%
Samoan	0	0.0%
Other Pacific Islander /2	7	0.0%
Some Other Race	651	1.4%
Two or More Races	822	1.7%
White: American Indian and Alaska Native /3	149	0.3%
White: Asian /3	188	0.4%
White: Black or African American /3	301	0.6%
White: Some Other Race /3	87	0.2%
Race Alone or in Combination with One or More Other Races /4		
White	43,180	90.3%
Black or African American	3,651	7.6%
American Indian and Alaska Native	350	0.7%
Asian	686	1.4%
Native Hawaiian and Alaska Native	39	0.1%
Some Other Race	764	1.6%

(X) Not applicable

1. Other Asian alone or two or more Asian categories.
2. Other Pacific Islander alone or two or more Native Hawaiian and Other Pacific Islander categories.
3. One of the four most commonly reported multiple-race combinations nationwide in Census 2000.
4. In combination with one or more of the other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than on race.

Source: U.S. Census Bureau, Census 2010.

Prepared by the Maryland Department of Planning, Projections and Data Analysis / State Data Center.

2010 Census Profile of General Population and Housing Characteristics

Area Name : Queen Anne's County, Maryland

Subject	Number	Percent
HISPANIC OR LATINO		
Total Population	47,798	100.0%
Hispanic or Latino (of any race) /5	1,452	3.0%
Mexican	450	0.9%
Puerto Rican	185	0.4%
Cuban	56	0.1%
Some Other Race	761	1.6%
Not Hispanic or Latino	46,346	97.0%
HISPANIC OR LATINO AND RACE		
Total Population	47,798	100.0%
Hispanic or Latino (of any race)	1,452	3.0%
White Alone	664	1.4%
Black or African American Alone	40	0.1%
American Indian and Alaska Native Alone	22	0.0%
Asian Alone	9	0.0%
Native Hawaiian and Other Pacific Islander Alone	0	0.0%
Some Other Race Alone	610	1.3%
Two or More Races	107	0.2%
Not Hispanic or Latino	46,346	97.0%
White Alone	41,733	87.3%
Black or African American Alone	3,258	6.8%
American Indian and Alaska Native Alone	127	0.3%
Asian Alone	460	1.0%
Native Hawaiian and Other Pacific Islander Alone	12	0.0%
Some Other Race Alone	41	0.1%
Two or More Races	715	1.5%
RELATIONSHIP		
Total Population	47,798	100.0%
In Households	47,372	99.1%
Householders	18,016	37.7%
Spouse /6	10,862	22.7%
Child	13,814	28.9%
Own Child Under 18 Years	10,220	21.4%
Other Relatives	2,432	5.1%
Under 18 Years	947	2.0%
65 Years and Over	486	1.0%
Nonrelatives	2,248	4.7%
Under 18 Years	198	0.4%
65 Years and Over	164	0.3%
Unmarried partner	1,117	2.3%
In Group Quarters	426	0.9%
Institutionalized Population	371	0.8%
Male	278	0.6%
Female	93	0.2%
Noninstitutionalized Population	55	0.1%
Male	32	0.1%
Female	23	0.0%

Subject	Number	Percent
HOUSEHOLDS BY TYPE		
Total Households	18,016	100.0%
Family Households (Families) /7	13,314	73.9%
With Own Children Under 18 Years	5,573	30.9%
Husband-Wife Family	10,862	60.3%
With Own Children Under 18 Years	4,344	24.1%
Male Householder, No Wife Present	796	4.4%
With Own Children Under 18 Years	399	2.2%
Female Householder, No Husband Present	1,656	9.2%
With Own Children Under 18 Years	830	4.6%
Nonfamily Households /7	4,702	26.1%
Householder Living Alone	3,708	20.6%
Male	1,681	9.3%
65 Years and Over	507	2.8%
Female	2,027	11.3%
65 Years and Over	1,064	5.9%
Households with Individuals Under 18 Years	6,192	34.4%
Households with Individuals 65 Years and Over	5,057	28.1%
Average Household Size	2.63	(X)
Average Family Size /7	3.04	(X)
HOUSING OCCUPANCY		
Total Housing Units	20,140	100.0%
Occupied Housing Units	18,016	89.5%
Vacant Housing Units	2,124	10.5%
For Rent	202	1.0%
Rented, Not Occupied	19	0.1%
For Sale Only	416	2.1%
Sold, Not Occupied	48	0.2%
For Seasonal, Recreational or Occasional Use	823	4.1%
All Other Vacants	616	3.1%
Homeowner Vacancy Rate (Percent) /8	2.7	(X)
Rental Vacancy Rate (Percent) /9	6.1	(X)
HOUSING TENURE		
Occupied Housing Units	18,016	100.0%
Owner-Occupied Housing Units	14,928	82.9%
Renter-Occupied Housing Units	3,088	17.1%
Population in Owner-Occupied Housing Units	39,574	(X)
Population in Renter-Occupied Housing Units	7,798	(X)
Average Household Size of Owner-Occupied Units	2.65	(X)
Average Household Size of Renter-Occupied Units	2.53	(X)

5. This category is composed of people whose origins are from the Dominican Republic, Spain and Spanish-speaking Central or South American counties. It also includes general origin responses such as "Latino" or "Hispanic".
6. "Spouse" represents spouse of the householder. It does not reflect all spouses in a household responses of "same-sex spouse" were edited during processing to "unmarried partner".
7. "Family households" consist of a householder and one or more other people related to the householder by birth, marriage or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couples households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily household" consist of people living alone and households which do not have any members related to the householder.
8. The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale". It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only", and vacant units that have been sold but not yet occupied; and then multiplying by 100.
9. The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent". It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent", and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, Census 2010.
Prepared by the Maryland Department of Planning, Projections and Data Analysis / State Data Center.

A Unique Heritage & Setting

Queen Anne's County is one of the oldest sites of colonial settlement in the nation. Established in 1631, Kent Island boasts of being the oldest English settlement after Jamestown and Plymouth Colony, in what became the United States.

> *"In the spring of 1980, both houses of the Maryland General Assembly passed resolutions recognizing the colony William Claiborne established on the Island of Kent in 1631 as the first permanent English settlement in what is now the State of Maryland*." .
> . . from an article by Gilbert Byron (1903-1991), Eastern Shore poet and teacher .

Today, traces of history can be found throughout the landscape as noted by hundreds of documented historic structures and sites countywide, and two Nationally Designated Historic Districts: Centreville and Stevensville. The history of both an agrarian and maritime community well established by the 18th century, is reflected in the County's architecture, road network and remaining villages and hamlets.

The Captains Houses @ Centreville Wharf

From the time when vacationers arrived to Kent Island by steamboat and ferry service to make rail connections to the bayside and oceanfront resorts, continuing to the construction of the Chesapeake Bay Bridge, allowing vacationers to travel by automobile, Queen Anne's County has been recognized as the "*Gateway to the Eastern Shore".*

Due to its location on the Chesapeake Bay, Queen Anne's County offers more than 495 miles of scenic shoreline, accompanied by acres of pastoral rural landscape and working waterfront. Queen Anne's County offers residents and visitors a pleasant environment for working, living and recreation. The County's natural resources play a great part in attracting visitors who often become residents, enjoying the quality of life provided by public support for outdoor recreation activities such as boating, fishing, golfing, bird watching, biking, hiking and sport shooting to name a few.

Strategically located business parks such as the Matapeake Business Park, the Thompson Creek Business Park, the Chesapeake Bay Business Park and the Centreville Business Park all offer a mix of manufacturing, flex, warehouse and office space. Retail and commercial business is found mostly along the heavily travelled U.S. Route 50/301 Corridor. The Department of Economic Development reports that there are 1,390 businesses located in the County, employing more than 11,800 workers.

The Chesapeake Bay Business Park, Stevensville

Parks and Recreation

Queen Anne's County's Parks system is comprised of more than 3125 acres of recreation land as of 2016. More than 4600 acres of State and Local recreation land and approximately 300 acres of recreation lands owned by the Queen Anne's County Board of Education with a longstanding Memorandum of Understanding with respect to use and maintenance of sports and open areas, add to the lands for recreational opportunities available to users. These lands and park facilities are depicted on the following map titled ***– Queen Anne' s County Park and Recreational Facilities*** with an inventory of facilities provided within each park shown in the spreadsheet titled, ***Inventory of Queen Anne's County Parks and Recreation Facilities, 2017.***

The 2016 Parks Needs Survey results concluded the following major needs of County Parks and Recreation: Swimming/Aquatic Centers and Community Centers, Sports fields, Bathroom facilities and Trails. The Department of Parks has incorporated the results of the Survey, and together with the goals identified in the Local Goals for Parks and Recreation, is moving forward to achieve them. The plan recommends use of multiple funding sources to meet program needs, including County funds, various grants including State and Federal sources, Parks impact fees, fee-in-lieu of funds and dedicated program participation fees.

Maryland's Department of Natural Resources Goals for Recreation, Parks and Open Space are:

Figure SI-5

Maryland Department of Natural Resources Goals for Parks & Recreation

1. *Make a variety of quality recreational environments and opportunities readily accessible to all of its citizens, and thereby contribute to their physical and mental well-being.*

2. *Recognize and strategically use parks and recreation facilities as amenities to make communities, counties and the State a more desirable place to live, work and visit.*

3. *Use State investment in parks, recreation, and open space to complement and mutually support the broader goals and objectives of smart growth within Maryland.*

4. *To the greatest degree feasible, ensure that recreation land and facilities for local populations are conveniently located relative to population centers, are accessible without reliance on the automobile, and help to protect natural open spaces and resources.*

5. *Complement infrastructure and other public investments and priorities in existing communities and areas planned for growth through investment in neighborhood and community parks and facilities.*

6. *Continue to protect recreational open space and resource lands at a rate that equals or exceed the rate that land is developed at a statewide level.*

". . . Maryland's Department of Planning sees Maryland cities, towns and communities as attractive, vibrant places to live, work, play and learn. They grow in ways that add value to the landscape and provide opportunity to new enterprises. Our natural, cultural and historic resources are catalysts that strengthen and renew economic and community development. Planning's actions will change Maryland for the better.

Local government - with its residents - invests time and resources in creating a vision for how they want their communities to look in the future. They are in the best position to achieve these local aspirations through comprehensive plans, ordinances and local planning". from MDP website.

Natural Resource Conservation

Queen Anne's County recognizes that sustaining environmentally sensitive areas and the quality of water resources are factors in the overall quality of life of County residents. Of the 238,337 acres that comprise Queen Anne's County more than 81,631 acres have been conserved through various mechanisms. County Parks, MALPF, Greenprint, Maryland Environmental Trust easements, Transfer of Development Rights (TDR) Sending Areas, Rural Legacy Areas , CREP easements, Non-Contiguous Opens Space, Deed Restricted Opens Space and private conservation easements all contribute to the total acreage of conservation lands.

An inventory of conservation lands may be found on the map titled ***Conservation Lands of Queen Anne's County, Maryland – 2018.***

<u>Agricultural Land Preservation</u>

Queen Anne's County is dedicated to preserving its agricultural history and economic sustainability through a variety of conservation/preservation techniques. In addition to techniques such as Rural Legacy Areas, CREP easements and MALPF, the following recommendations for Agricultural Preservation were noted in the adopted 2010 Queen Anne's County Comprehensive Plan:

- *Expand the 2008 Priority Preservation Area (PPA) to an area greater than the Rural Legacy Areas;*
- *Enhance the Purchase of Development Rights (PDRs) program through consideration of County bonding authority to purchase PDRs;*
- *Explore opportunity for creation of voluntary county agricultural districts as a mechanism to provide an inventory of potential applicants for easement acquisition;*
- *Continue to aggressively apply for preservation funding;*
- *Consider modifications of the TDR Program to include more tools for increased agricultural land preservation; and*
- *Consider appropriate locations for new Planning Areas with development incentives.*

Of the 81,631 acres of Conservation Lands throughout Queen Anne's County, more than 36,327acres have been conserved/preserved utilizing the various agricultural preservation techniques of MALPF, Greenprint easement, Rural Legacy and CREP easements alone. An inventory of conservation lands may be found on the map titled***, Conservation Lands of Queen Anne's County, Maryland – 2018.***

Conservation land protective signage

Queen Anne's County
Comprehensive Plan Update

Maryland

Queen Anne's County Park and Recreational Facilities

Neighborhood Parks
- 1 Crumpton Park
- 2 Mowbray Park
- 3 Pinkney Park
- 4 Long Point Park
- 5 Ewing Pond Park
- 6 Stevensville Park

Community Parks
- 7 Round Top Park
- 8 Grasonville Park
- 9 Church Hill Park
- 10 Batts Neck Park
- 11 Old Love Point Park
- 12 Route 18 Park
- 13 Whitemarsh Park
- 14 Sudlersville Park

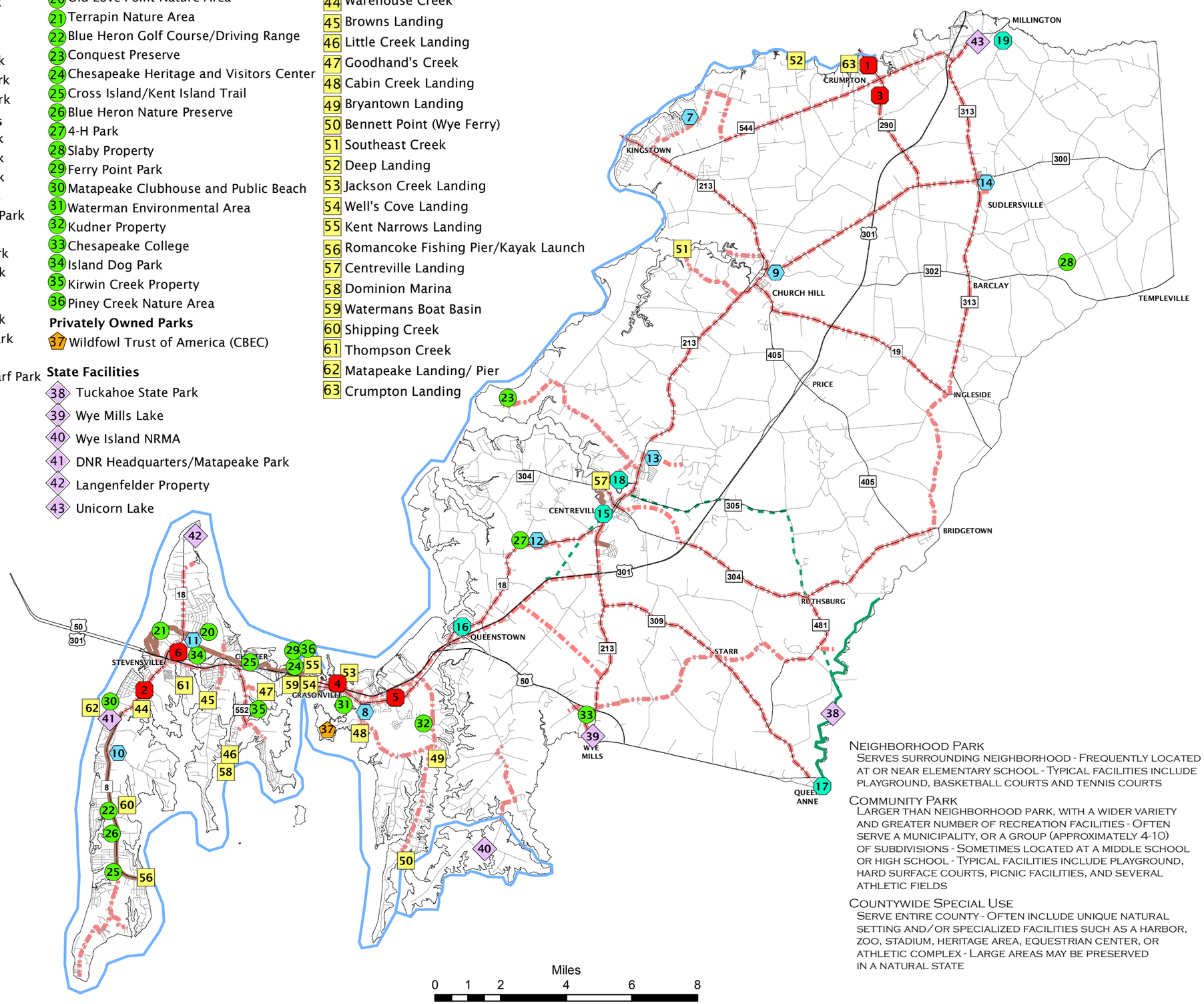
Town Parks
- 15 Mill Stream Park
- 16 Queenstown Park
- 17 Roosevelt Park
- 18 Centreville Wharf Park
- 19 Millington Park

Countywide Special Use
- 20 Old Love Point Nature Area
- 21 Terrapin Nature Area
- 22 Blue Heron Golf Course/Driving Range
- 23 Conquest Preserve
- 24 Chesapeake Heritage and Visitors Center
- 25 Cross Island/Kent Island Trail
- 26 Blue Heron Nature Preserve
- 27 4-H Park
- 28 Slaby Property
- 29 Ferry Point Park
- 30 Matapeake Clubhouse and Public Beach
- 31 Waterman Environmental Area
- 32 Kudner Property
- 33 Chesapeake College
- 34 Island Dog Park
- 35 Kirwin Creek Property
- 36 Piney Creek Nature Area

Privately Owned Parks
- 37 Wildfowl Trust of America (CBEC)

State Facilities
- 38 Tuckahoe State Park
- 39 Wye Mills Lake
- 40 Wye Island NRMA
- 41 DNR Headquarters/Matapeake Park
- 42 Langenfelder Property
- 43 Unicorn Lake

Public Landings
- 44 Warehouse Creek
- 45 Browns Landing
- 46 Little Creek Landing
- 47 Goodhand's Creek
- 48 Cabin Creek Landing
- 49 Bryantown Landing
- 50 Bennett Point (Wye Ferry)
- 51 Southeast Creek
- 52 Deep Landing
- 53 Jackson Creek Landing
- 54 Well's Cove Landing
- 55 Kent Narrows Landing
- 56 Romancoke Fishing Pier/Kayak Launch
- 57 Centreville Landing
- 58 Dominion Marina
- 59 Watermans Boat Basin
- 60 Shipping Creek
- 61 Thompson Creek
- 62 Matapeake Landing/ Pier
- 63 Crumpton Landing



Legend
- Community Parks
- Coutywide Special Use
- Neighborhood Parks
- Private Parks
- State Facilities
- Town Parks
- Public Landings
- WaterTrails
- Other Roadways
- Highways
- Proposed Trails
- Existing Trails
- Existing Greenway *
- Potential Greenway *
- * County Boundary

Greenway trail data was provided by the Maryland Department of Natural Resources. Greenway trails were added where there was no overlap with Queen Anne's County trails (Existing and Proposed Trails).

Neighborhood Park
Serves surrounding neighborhood - Frequently located at or near elementary school - Typical facilities include playground, basketball courts and tennis courts

Community Park
Larger than neighborhood park, with a wider variety and greater number of recreation facilities - Often serve a municipality, or a group (approximately 4-10) of subdivisions - Sometimes located at a middle school or high school - Typical facilities include playground, hard surface courts, picnic facilities, and several athletic fields

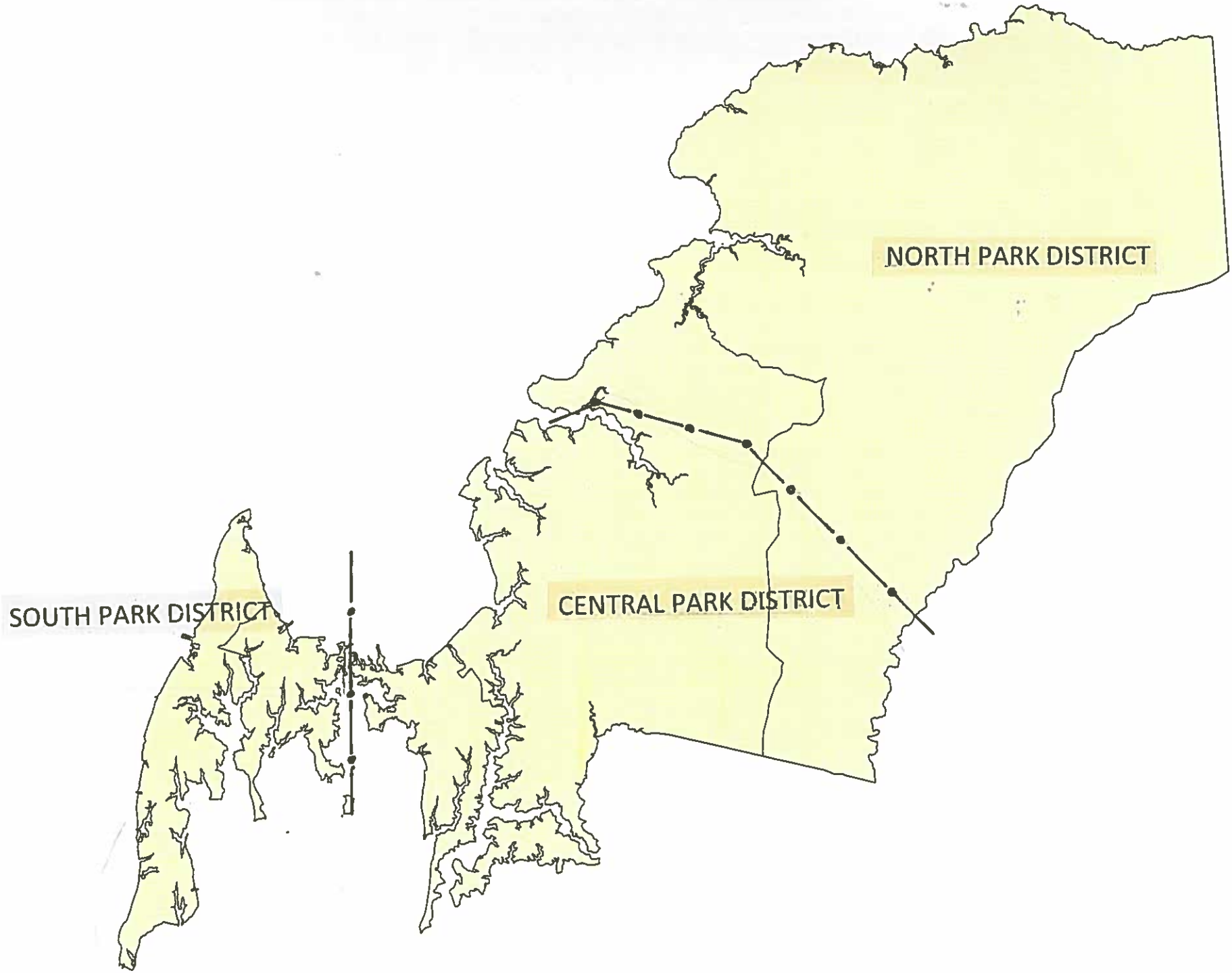
Countywide Special Use
Serve entire county - Often include unique natural setting and/or specialized facilities such as a harbor, zoo, stadium, heritage area, equestrian center, or athletic complex - Large areas may be preserved in a natural state

Source: Queen Anne's County Department of Land Use, Growth Management and Environment, Parks and Recreation and Maryland Department of Natural Resources

December 2016

MAP CF-2

Queen Annes County Park Districts



Parks Facilities Inventory

	NO.	Service Area[1]	Size (Acres)	Park Type[2]	Parking Spaces	Rest-rooms	Picnic Tables	Tennis Courts	Outdoor Basketball Courts	Indoor (Gym) Courts	Play-grounds	Multi-Purpose Fields	Baseball Diamonds	Volley Ball Courts	Inline Hockey	Conces-sions	Bleachers (sets)	Fees	Trails (Miles) E=Eques	Pavilions	Access Control	Fishing (Shoreline & Piers) (Feet)	Golf (holes)	Boat Ramps	Boat Slips	Dog Park	Horseshoe pits	Beaches (miles)
Neighborhood Parks																												
Crumpton Park	1	N	50	N/Co	40	2	5				1		1				2	N			1							
Mowbray Park	2	S	20.7	N	80	2	12	3			2	1	2					N		1	2							
Pinkney Park	3	N	12.5	N	60	2	13		2		1	1	2	1				N		1	1						2	
Long Point Park	4	C	7.3	N	6						1							N	0.33		1							
Ewing Pond Park	5	C	18	C	10													N	1.75		1	2190						
Stevensville Park	6	S	0.3	N	22		2											N			1							
Subtotals - Neighborhood Parks			***108.8***		***218***	***6***	***32***	***3***	***2***		***5***	***2***	***5***	***1***			***2***		***2.08***	***2***	***7***	***2190***					***2***	
Community Parks																												
Round Top Park	7	N	110	C	100		13	2	1		1	4	2				4	N		1	3							
Grasonville Park	8	C	38.6	C	75		0	1	1		1	1	2					N	2		1							
Church Hill Park	9	N	41	C	150	4	10		1		1	5	2			1	4	N	1	1	3							
Batts Neck Park	10	S	60	C	300	8					1	4	1		1		1	N			1							
Old Love Point Park	11	C	30.5	C	325	4	3	3	2		1	12	4	2		1	3	N		1	2							
Rt 18 Park	12	C	51.6	C	200	8	6				1	8	4			1	10	N	1.5	1	3							
White Marsh Park	13	C	318	Co	220							9	4				8	N			1							
Sudlersville Park	14	N	36.5	C	75	2	14	2	2		1	4	2	1			4	N	1	1	1						3	
Subtotals - Community Parks			***686.2***		***1445***	***26***	***46***	***8***	***7***		***7***	***47***	***21***	***3***	***1***	***3***	***34***		***5.5***	***5***	***15***						***3***	
Town Parks																												
Mill Stream Park	15	C	2.2	C																	1							
Queenstown Park	16	C	2	C																	1							
Roosevelt Park	17	S	7.8	C	20		8				1	1	1					N	0.5	1	1						2	
Centreville Wharf Park	18	C	2.4	C																	1							
Millington Park	19	N	1.5	N																	1							
Subtotals - Town Parks			***15.9***		***20***		***8***				***1***	***1***	***1***						***0.5***	***1***	***5***						***2***	
Countywide Special Use																												
Old Love Point Nature Area	20	S	94.52	Co														N			1							
Terrapin Nature Park	21	S	275	Co	53		9											N	3		1	2112						0.53
Blue Heron Golf Course/Driving Range	22	S	94.1	Co	50	2												Y			1		18					
Conquest Preserve	23	C	758	Co	120	8	25						1					Y	2.5 (E)	1	2						2	0.12
Chesapeake Heritage/Visitors Center[4]	24	S	2.1	Co	43	6	3											N			1							
Cross Island/Kent Island Trail	25	S	37	Co	250		10											N	13.5		9							
Blue Heron Nature Preserve	26	S	300	Co	10													N	2.5 (E)		1							
4-H Park	27	C	26.96	Co		3					1							Y		6	2							
Slaby Property	28	S	26.6	C														N			1							
Ferry Point Park[4]	29	S	41	Co														N	2		1	685						0.13
Matapeake Clubhouse & Public Beach[5]	30	S	5	Co	110	4												N	1		1							0.13
Waterman Environmental Area	31	S	137	Co														N			1							
Kudner Property	32	C	271.5	Co														N			1							
Chesapeake College	33	S	163.3	Co														Y			2							
Kent Island Dog Park	34	S	5	C	20		1											N		1	1					1		
Kirwin Creek Property	35	S	12.7	Co														N			1							
Piney Creek Nature Area	36	S	40.1	Co	5													N			1							
Subtotals - Countywide Special Use			***2289.9***		***661***	***23***	***48***				***1***		***1***						***19.5***	***8***	***28***	***2797***	***18***			***1***	***2***	***0.91***
Privately Owned Facilities																												
Wildfowl Trust of America (CBEC)	37	S	255.4	Co																								
State Facilities																												
Tuckahoe State Park	38	C	1836.7																									
Wye Mills Lake	39	S	66.8																									
Wye Island Natural Resource Area	40	S	2512																									
DNR Headquarters/Matapeake Park	41	S	17																									
Langenfelder Property	42	S	65.27																									
Unicorn Lake	43	N	189.2																									
Totals - State Facilities			***4415.5***																									
County Landings and Piers																												
Matapeake Pier & Landing	44	S	2	Co	61	4	10											Y			1	650		2				
Crumpton Landing	45	N	0.3	N	2													Y			1			1				
Warehouse Creek Landing	46	S	0.1	N	2													Y			1							
Browns Landing	47	S	----	N	—													N			1							
Little Creek Landing	48	S	1	N	15													Y			1			1				
Goodhand Creek Landing	49	S	1.5	N	12													Y			1			1				
Cabin Creek Landing	50	C	2.6	N	6													Y			1							
Bryantown Landing	51	C	0.5	N	10													Y			1							
Bennett Point Landing	52	C	1.5	N	8													Y			1							
Southeast Creek Landing	53	N	0.3	N	6													Y			1			1				
Deep Landing	54	N	0.7	N	12													Y			1			1				
Jackson Creek Landing	55	C	1.5	N	4													Y			1							
Wells Cove Landing	56	S	2	N	74													Y			1	50						
Kent Narrows Landing	57	S	1	N	33													Y			2			1				
Romancoke Pier	58	S	2.5	N	43	4	2											Y			1	600						
Centreville Landing	59	C	1	N	12	2												Y			1			1	21			
Dominion Marina	60	S	0.5	N	6													Y			1				6			
Watermans Boat Basin	61	S	1.7	N	145	4												Y			1				145			
Shipping Creek Landing	62	S	2.5	N	24													Y			1			1				
Thompson Creek Landing	63	S	1	N	21													Y			1			1				
Subtotals - Landings and Piers			***24.2***		***496***	***14***	***12***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***		***0***	***0***	***21***	***1300***	***0***	***11***	***172***	***0***	***0***	***0***
Totals - Queen Anne's County Park System (Excl.State/Private)			***3125***		***2840***	***69***	***146***	***11***	***9***		***14***	***50***	***28***	***4***	***1***	***3***	***36***		***27.58***	***16***	***76***	***6287***	***18***	***11***	***172***	***1***	***9***	***0.91***

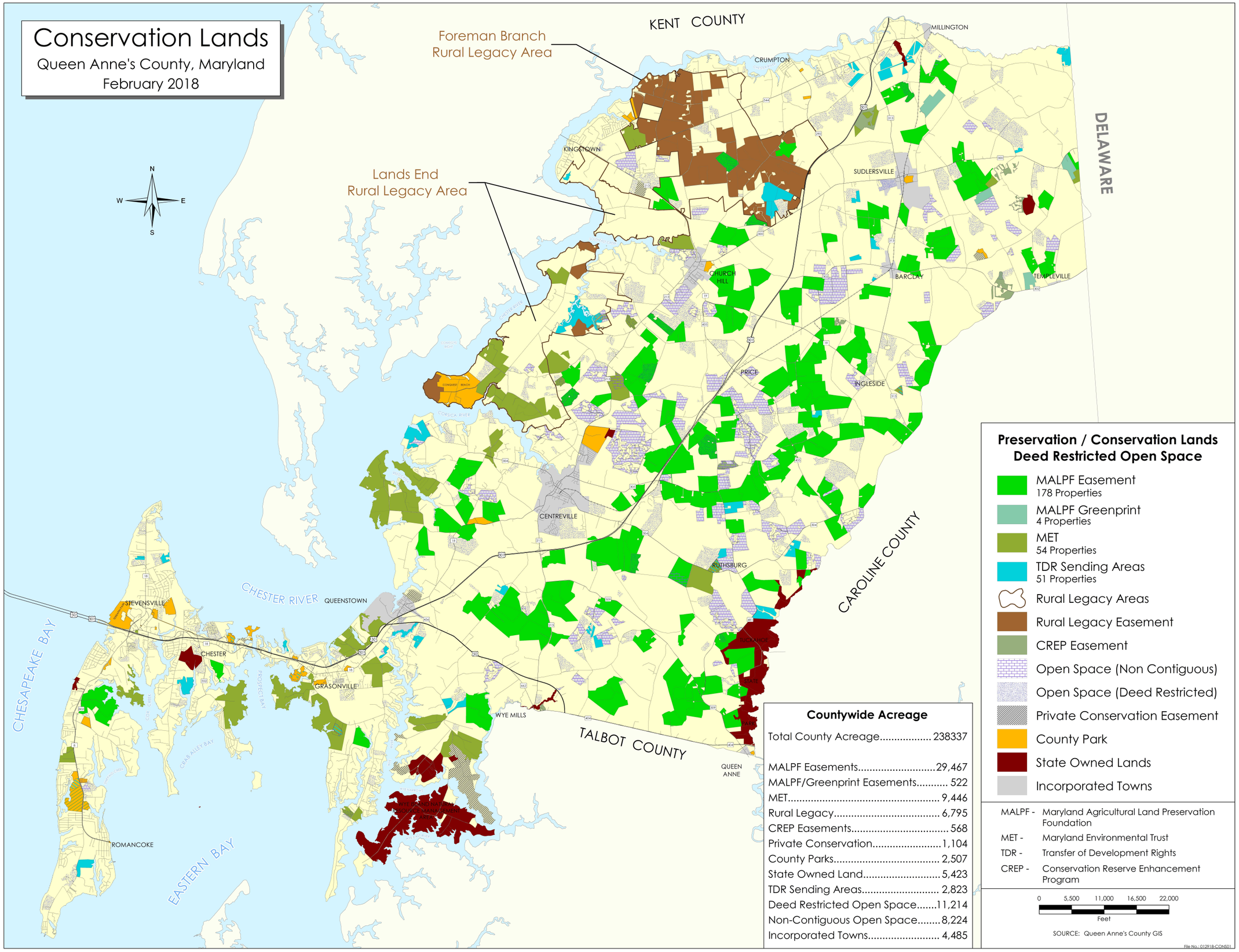
[1] Service Area: N - North, C - Central, S - South
[2] Park Type: N - Neighborhood, C - Community, Co- Countywide/ Special Use
[3] Acreage of school sites is calculated by dividing recreational acreage by 60%, per MDP/DNR guidelines
[4] Parking & Restrooms for Ferry Point Park is located at the Chesapeake Exploration Center.
[5] Matapeake is The County's only public beach, includes separate area where dogs are allowed
[6] Board of Education properties utilized by Parks through a joint agreement

	NO.	Service Area[1]	Size (Acres)	Park Type[2]	Parking Spaces	Rest-rooms	Picnic Tables	Tennis Courts	Outdoor Basketball Courts	Indoor (Gym) Courts	Play-grounds	Foot/Soc/LaX/Field Hockey Fields	Baseball Diamonds	Volley Ball Courts	Inline Hockey	Conces-sions	Bleachers (sets)	Fees	Trails (Miles) E=Eques	Pavilions	Access Control	Fishing (Shoreline & Piers) (Feet)	Golf (holes)	Boat Ramps	Boat Slips	Dog Park	Horseshoe pits	Beaches (miles)
Board of Education [3,8]																												
Bayside Elementary School	64	S	16	N					2	1	2	1	1															
Centreville Elementary School	65	C	14.2	N						1	2	1	1															
Centreville Middle School	66	C	54	C					2	1		3	3															
Church Hill Elementary School	67	N	8	N						1	2	2								1								
Grasonville Elementary School	68	C	35.5	N					1	1	2	1	1															
Kennard Elementary School	69	C	26.2	N						1	2	2																
Kent Island Elementary School	70	S	13.7	N						1	2	1																
Kent Island High School	71	S	57.7	C				4		1		6	2				2											
Matapeake Elementary/Middle Schools	72	S	40	N						2	2	4	3															
Queen Anne's High School	73	C	13.3	C				6	2	1		7	2				2											
Sudlersville Elementary School	74	N	10.3	N					4	1	2	2	1							1								
Sudlersville Middle School	75	N	19.8	C				2		1		3	2															
Stevensville Middle School	76	S	11.7	C					2	1		1	0															
Subtotals - Board of Education			*320.4*		*0*	*0*	*0*	*12*	*13*	*14*	*16*	*34*	*16*	*0*	*0*	*0*	*4*		*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Conservation Lands

Queen Anne's County, Maryland

February 2018



Countywide Acreage

Total County Acreage	238337
MALPF Easements	29,467
MALPF/Greenprint Easements	522
MET	9,446
Rural Legacy	6,795
CREP Easements	568
Private Conservation	1,104
County Parks	2,507
State Owned Land	5,423
TDR Sending Areas	2,823
Deed Restricted Open Space	11,214
Non-Contiguous Open Space	8,224
Incorporated Towns	4,485

Section II

PARKS & RECREATION

This chapter serves to establish priorities for land acquisition, facility development and rehabilitation within Queen Anne's County's Park system. These priorities are input derived from the Parks Needs Analysis Survey (Sept. 2016) performed as part of this LPPRP update. The Parks Needs Analysis Survey garnered input via public participation and review of the information collected. Collectively, along with the Queen Anne's County Comprehensive Plan and State goals and policies for recreation and parks, these priorities were established.

> Maryland Department of Natural Resources (MDNR) Vision Statement:
>
> *In a sustainable Maryland, we recognize that the health of our society and our economy are dependent on the health of our environment. Therefore, we choose to act both collectively, and individually to preserve, protect, restore, and enhance our environment for this and future generations.*

Maryland DNR has been, and continues to be a champion of preservation and conservation of public lands for natural resource protection and outdoor recreation use by citizens and visitors. The Strategies developed by DNR through a technical team and very public process remain the overarching strategies and objectives of Queen Anne's County as well.

The State Strategies from the 2014-2018 State LPRP are:

Figure SII-1

MDNR Strategies– 2014-2018 Land Preservation & Recreation Plan

- ***Coordinate*** *- Local, County and State collaborative planning efforts for land preservation and recreation.*
- ***Promote*** *– Economic, health, and environmental benefits of outdoor recreation and natural resource protection.*
- ***Access*** *– To water and land based recreation opportunities for all populations;*
- ***Connect*** *– DNR trails and public lands to the places people live, work, and play;*

Executive Summary – Parks Overview

The Queen Anne's County Board of Commissioners delegate responsibility in an advisory capacity on planning, developing and implementing the recreation and parks programs to an appointed nine-member Parks and Recreation Advisory Board (PRAB). The PRAB considers all goals and objectives of the Land Preservation, Parks & Recreation Plan as the master plan for the Department of Parks to implement. The County Commissioners retain approval authority for any projects, initiatives, plans and funding recommendations made by the Board.

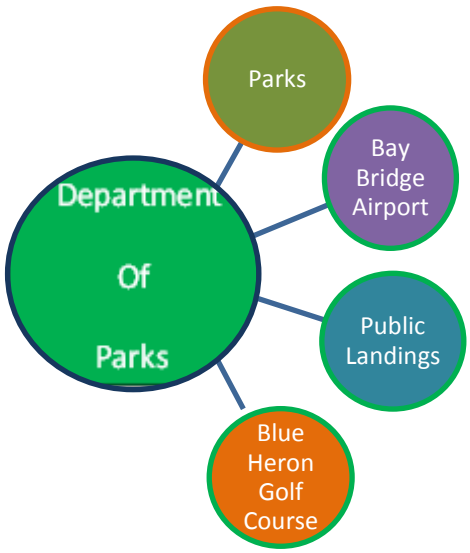
The purpose of the Board is to preside over a comprehensive program of public recreation, including establishment, operation and maintenance of a system of public parks throughout Queen Anne's County. The planning, land acquisition and facility development responsibilities are addressed by the Department of Parks with input provided by the PRAB and final approval/decision rendered by the Queen Anne's County Board of Commissioners.

As a result of this careful vetting of projects, plans and expenditures, Queen Anne's County is recognized as having a strong and venerable park system. The park system provides residents and visitors with positive life -enriching leisure, recreational, and educational activities.

Queen Anne's County Department of Parks is comprised of four Divisions: Parks, Public Landings and Marinas, the Bay Bridge Airport and the Blue Heron Golf Course. The Department of Parks employs 45 full-time staff and approximately 23 part time and seasonal employees. The Director of Parks provides oversight and management of these divisions in addition to capital planning for parks and facilities. The four divisions provide boundless public recreation opportunities by air, land and water.

Figure SII -2

Queen Anne's County Department of Parks – 2017



Of the four Divisions of the Department of Parks, the Public Landings and Marinas, the Blue Heron Golf Course and the Bay Bridge Airport are also known as Enterprise Divisions. These Divisions are considered as an enterprise as they have the ability to incur revenue in order to sustain their operations.

- *Parks* - The Parks Division works with both public and private sectors to plan, develop, maintain, preserve, conserve and enhance the County's natural resources, open spaces and waterfront properties. In addition to providing public recreation areas and natural resource conservation, these amenities serve to stimulate economic development by spurring development of hotels, restaurants, fishing charters, water activities, adventure tours and other ancillary uses of the County's natural resources.

In keeping with its mission to conserve, enhance and protect County open spaces and natural resources to enrich the quality of life for present and future generations, the Division remains focused on its objective to promote the positive image of Queen Anne's County as a desirable place to live and visit.

The Division oversees the planning, acquisition, design, development, maintenance and operations of an extensive park system in proportion with the growing population and development within the County. The Division of Parks continues to coordinate field scheduling and usage for all leagues utilizing county athletic fields. While the Board of Education is responsible for scheduling use of athletic fields on BOE properties, the Division is responsible for care and maintenance of all Board of Education property including sports fields and stadiums. Additionally, some private landowners have begun to coordinate and schedule their own lands for use by private leagues and tournaments.

Aerial View of Sudlersville Park

- *Public Landings and Marinas* – is committed to providing residents and visitors safe and convenient boating access to the waters of and surrounding the County, and to maintain, manage the public landings, marinas and piers for the benefit of all residents and users. This Division manages 18 public landings, 2 public fishing piers, and 3 public marinas with a total of 174 boat slips. Public Landings are accessed through a user permit available through the Division and at several local vendor locations. Public Landing facilities comprise more than 27.3 acres of land throughout the County. Operations are financed mainly through user fees and grants.

Waterman's Heritage Marina @ Kent Narrows

- *Blue Heron Golf Course* (BHGC) – The BHGC is an 18-hole, par 3 course located along the scenic shoreline of Price Creek , west of MD Route 8 in the Romancoke area of Kent Island. The BHGC is committed to providing a quality affordable golf experience which services the entire community by offering leagues, camps and general play for all ages and ability. The BHGC encourages whole family participation to enjoy the game and supports community wellness, exercise and socialization. The facility recently expanded its services with a newly constructed golf driving range immediately adjacent to the south of the golf course. Operations of the golf course and driving range are financed mainly through user fees and County operating funds.

Blue Heron Golf Course at Sunset

- *Bay Bridge Airport -* is committed to providing a safe public use airport environment for local and transient aviation enthusiasts. The facility, located on 107 acres situated directly on the Chesapeake Bay, is compliant with all FAA and MAA FBO operational standards. In recent years, the Bay Bridge Airport has increasingly aided the County on the economic development and tourism fronts by receiving more and more traffic of this nature. Operations are financed by user fees, hangar rental fees, grants and County operating funds.

Bay Bridge Airport, Stevensville, Maryland

Together the Department and its Enterprise Divisions manage and maintain more than 3,125 acres of Park property in addition to maintaining the grounds and recreational facilities at 16 Board of Education (school) sites totaling an additional 320 acres.

As last reported in the 2012 LPPRP, the Department of Parks had undergone a re-organization as a result of economic recession and subsequent reduction in workforce countywide. During that time period – from 2010 thru 2015, the department became a division of the Department

of Public Works, with the Recreation component becoming part of the Department of Aging (now known as Dept. of Community Services). In 2014, after evidence of economic recovery and the desire to have Parks as a stand- alone department – the Department of Parks was once again made separate with its own operating and capital budget, however the Recreation Division remains separate from Parks under the now renamed Department of Community Services.

Queen Anne's County Recreation

The Recreation Division, under the Department of Community Services, is dedicated to enhancing the quality of life and promoting a sense of community within Queen Anne's County. In partnership with its citizens, the Recreation Division provides quality recreation programs and services which respond to the changing needs within the communities of Queen Anne's County.

Queen Anne's County Recreation offers several recreational sports leagues; Youth Basketball, Sunday Indoor Soccer, Youth Field Hockey and Flag Football utilizing a large number of volunteers to administer and operate these leagues on a daily basis. However, most organized youth sports leagues within Queen Anne's County are organized and financed through independent organizations. Queen Anne's County's involvement with these independent leagues is limited to scheduling and maintenance of the athletic fields used for practices, games and events.

Additionally, the Recreation Division provides pre- school sports and enrichment programs, school age youth sports, and events such as Easter egg hunts, fishing derbies, outdoor family movie nights and concerts. Teen and Adult programming thru Recreation includes team sports, leagues and clinics; programs from personal wellness to sewing classes, as well as trips to New York City during the Christmas Holiday, Broadway shows, circus, flower and home shows, and events such as fishing derbies, storytelling under the stars, etc. Summer and vacation camps are offered with anything from specialty sports camps, to art and adventure camps to home economic camps. Additionally, despite the absence of a public swimming venue, County Recreation runs a large swim lesson camp session during the summer months

The Recreation Division utilizes social media, local press and the County government website predominantly to advertise activities offered and provides an inventory of activities and facilities. Increasing use of Facebook and the Queen Anne's County Recreation website: http://qac.org/362/Recreation provides citizens with up to date information regarding programs and special events.

Benefits of Public Parklands

Benefits are afforded residents and visitors alike as they may benefit from the vast recreational opportunities and outstanding park system offered in Queen Anne's County. Many of our parks are located very close to major transportation routes, allowing easy access by car, while others are located along trail routes and afford the user a bike ride or walk to access them. However, the parks of Queen Anne's County are reached, users benefit in many ways:

- *Access to public waterways through parks and at public landings,*
- *Access to recreation facilities such as playgrounds, athletic fields, picnic pavilions and walking trails,*
- *Derived eco- benefit from large tracts of land protecting forests, wetland and wildlife habitat, providing vital greenspace that offer positive benefits in urban heat reduction, air and water filtration provided by trees, and stormwater management,*
- *Health benefits gained through physical activity,*
- *Improved sense of well- being and focus experienced through walks in the forest, observation of flora and fauna, interaction with nature,*
- *Benefits of interacting formal learning with environmental education for the greater good globally and for the local community;*
- *Added sense of community through interaction of people, especially those of different age groups and cultural and ethnic heritage that reside in the area; and*
- *Economic benefits as a result of increased property values for properties within close proximity to parks and the opportunity to host area sports tournaments, historical and cultural events and attract businesses with a green vibe.*

Both the Department of Parks and the Recreation Division are attentive to the needs of citizens including requests for new facilities, facility renovations and new or revitalized recreational programs. With the re-organization, the Department of Parks with its Divisions, strives to provide endless public recreation opportunities by land, air and water. Whether resident or tourist, the Parks Department provides a convenient and expansive park system, water access, golf course and airport facilities as attractive aspects of Queen Anne's County that help to brand the county as the "*Gateway to the Eastern Shore".*

Ice Skating in Central Park, NY

Pumpkin Art @ Artisan's Festival

Youth Basketball Clinic

Concert/Dancing in the Park @ Matapeake Clubhouse

Queen Anne's County Department of Parks remains true to the mission of providing a comprehensive park system with recreational programs, facilities and services that respond to the changing needs of its communities. The Department's objectives of conserving, protecting and enhancing the County's open spaces for the purposes of recreation, health and overall well- being of its citizens, serve to enrich the quality of life for future and present generation.

Goals and Objectives for Parks & Recreation

<u>Park Types of Queen Anne's County</u>

The Queen Anne's County park system includes three major types of parks; Neighborhood Parks serving the surrounding neighborhood, Community Parks, serving a much larger area that may include several residential subdivisions or mixed use developments, and Countywide Parks

which serve the entire county and often include unique natural settings or specialized facilities. Additionally, the Department of Parks maintains an extensive hiker/biker and water trail network (with assistance from MD DNR), County Public Landings, boat launch and fishing pier facilities, Board of Education (BOE) grounds (which often house athletic fields and facilities), open space and several historical and cultural resource sites.

The Department of Parks has a long standing Memorandum of Understanding with the Board of Education for use of athletic fields and other recreational facilities such as court space for indoor sports leagues and after school/evening programs. Newer schools in the public system such as Matapeake Elementary and Matapeake Middle School, have been designed as part of a school/park complex with active recreational areas and open space an integral part of the school grounds.

Several of the municipalities within the County maintain their own town parks, however they often partner with the County Department of Parks to assist with park amenities such as playgrounds, future trail connections and conservation enhancement projects. Parks are generally designed to serve geographic areas and are often located within growth areas aiming to meet the needs of more populated centers. The size of the park and facilities are often in direct correlation with the area population and needs assessed for that location. The three park types of the County work together to provide residents a variety of recreation opportunities within a reasonable distance from their homes.

The County parks are divided into three distinct districts, mainly for staffing and maintenance purposes and they are: the North District, overseeing parks to the northern portion of the County such as Conquest and Roundtop Park; the Central District, overseeing parks in the central location of the County such as Whitemarsh and Route 18 Parks; and the South District, overseeing a greater number of parks, yet the smaller, more dense geographical area of Kent Island, Grasonville, etc. Some of the County's most heavily used parks such as Old Love Point Park, Island Dog Park, Mowbray Park, Terrapin and Grasonville Parks lie within the South District.

Along with designated lands for active and passive park usage, Queen Anne's County is fortunate to have miles of land trails that predominantly exist within the most populated of growth areas; Kent Island. These land trails are designed for non-motorized use and aimed at bicycle and pedestrian users, although it's not unusual to see inline skaters or equestrians utilizing the trails. The six mile Cross Island Trail which traverses Kent Island from the Chesapeake Bay to the Kent Narrows is a nationally acclaimed trail, is part of the American Discovery Trail. The trail attracts many visitors to the area, with the trail itself often the reason for their visit to Queen Anne's County. Additional spurs from this main trail such as the Kent Island South Trail, and the proposed Cross County Connector Trail, offer connectivity to various neighborhoods, commercial centers, entertainment, historic and cultural sites, parks and schools on Kent Island.

The following describes the various types of facilities that serve to create the Queen Anne's County Park system. Although categorized, the Parks are diverse in size and physiography, providing interest for many types of recreation activities and the exploration of various natural resource elements of the County:

Neighborhood Parks

Generally these parks are located and designed to serve surrounding neighborhood communities. They are frequently located at or near an elementary or middle school with typical facilities being such things as playgrounds, basketball and/or tennis courts and perimeter trails. County neighborhood parks are: Crumpton Park, Mowbray Park, Pinkney Park, Long Point Park and Ewing Pond Park.

Community Parks

Community Parks are typically larger than neighborhood parks with a wider variety and greater number of recreation opportunities and facilities. Community Parks are often located near the center of a population area and/or a municipality, or within close proximity of a middle school or high school.

Community Parks typically include facilities such as athletic fields, playgrounds, hard surface play courts, picnic and walking facilities. Some include plumbed public restrooms, while all have access to portable restrooms.

Many County Community Parks have a natural resource component connected with the original land acquisition. These open space/natural areas are often used for agricultural purposes, wildlife habitat, wetland preservation and maintenance of contiguous forest or important resource lands. Generally, it is the County's Community Parks that are the sites of the most intense active recreational activities, and are often host sites for regional sports tournaments and events. It is the Community Parks where much focus is presently being given to provide public water/sewer for restroom and concession purposes and to design a park whose overall use may be enjoyed by all age segments of the population, with emphasis equally placed on passive recreation as well as active recreation. Additionally, Community Parks, particularly those adjacent or within walking distance of schools, help support outdoor education and goals of the *Maryland Partnership for Children in Nature* by providing opportunity for nature play and exploration.

The Department of Parks has partnered for many years with local schools to increase environmental stewardship and awareness of the valuable natural resources available to the residents and visitors of the County. The Department partners with the public schools such as Kent Island High School, Queen Anne's County High School, and Stevensville Middle School to name a few – as well as private schools such as The Wye River Upper School and The Gunston

School to create learning opportunities such as : planting living shorelines along the Corsica and Chester Rivers, planting vegetative filters at Old Love Point Park and Whitemarsh

Park, planting native species in created wetlands aside staff from MD DNR, Wildlife Conservation and area Riverkeeper Associations.

The Community Parks of Queen Anne's County are: Whitemarsh Park, Round Top Park, Grasonville Park, Church Hill Park, the 4H Park, Sudlersville Park, Batts Neck Park, Old Love Point Park, and the Route 18 Park.

Countywide Special Use Parks

Countywide Special Use Parks serve the entire County and often include a unique natural setting such as important wetlands and sensitive areas, or historic and cultural resources such as a peninsula reaching from north into the Chester River providing wetland preservation and wildlife habitat while protecting the County's economic hub of the Kent Narrows Waterfront Village Center, a historic ferry terminal building located on the shores of the Chesapeake, or specialized facilities such as a dog park equipped with agility equipment and doggie pools. It is perhaps these special places that shine the brightest as stars of the Queen Anne's County Park system.

The Countywide Special Use Parklands attract hundreds of people to explore and discover the natural environment and special places located on Maryland's Eastern Shore. For the most part these parks and open spaces lie only a short distance from the major population centers of the Baltimore – Washington region and are located along or within close proximity to major area transportation thoroughfares. These parks shine as gems of the Queen Anne's County Park System. Much attention has been brought to these areas as they play significant roles in area tourism initiatives and are an added bonus to economic development initiatives and those of developing a sense of place within our communities.

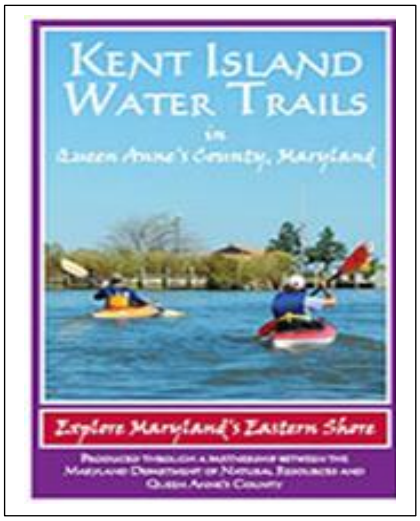
The Countywide Special Use Parks in Queen Anne's County are: Old Love Point Nature Area, Terrapin Nature Area, Blue Heron Nature Preserve, Conquest Preserve, the Chesapeake Heritage & Visitor Center, Cross Island/Kent Island South Trail, Blue Heron Golf Course & Driving Range, Stevensville Park, Slaby Property, Ferry Point Park, The Matapeake Clubhouse & Public Beach, Waterman Environmental Area, the Kudner Property,, the Island Dog Park and the Bay Bridge Airport and the newly proposed Blue Heron Nature Preserve.

Trails

From Terrapin Park or Romancoke Pier on Kent Island, to Tuckahoe Park into Caroline County, to the northern reaches of the County into Kent County, trail routes primarily utilize public roads to link to our parks, landings, historical and cultural points of interest villages and towns.

Through important partnerships with the Maryland State Highway Administration, the National Recreation Trails Program, Maryland's Scenic Byway Commission, and the Maryland Department of Natural Resources to name a few, along with the interest and advocacy of local government and citizen groups, a network of pedestrian, water and bicycle trails were created beginning nearly two decades ago. Since that time, interest in non-motorized, alternative transportation routes has grown in Queen Anne's County. Not only are residents and visitors seeking recreational, sporting and health related opportunities, but much of the public is finding that these routes truly offer alternatives when seasonal traffic or Bay Bridge backups may impair the ability to move about through their communities.

Kent Island has historically housed the major percentage of the County population. From this came the demonstrated need for connectivity to town centers and other points of interest, and the Cross Island Trail was developed. From this, the Kent Island South Trail was developed making connections to schools, historic and cultural resources, parks and public landings with access to/from many neighborhoods on Kent Island.



In addition to land trails, Queen Anne's County in partnership with the Maryland DNR, developed a fairly extensive system of water trails. These trails serve to connect users to places of historical and cultural heritage, areas of natural resource conservation and recreational facilities, all while enjoying the many miles of beautiful shoreline of Queen Anne's County.

Water trails serve as a major component of the overall trail network throughout the County. With grant funding and technical assistance from Maryland DNR, full- color water trail guide maps have been developed. The maps highlight points of interest and information about the natural and cultural features located along the trails. These trails provide a wide variety of paddling experiences so there are options for all levels of expertise. While the detailed trails vary in length and cover Kent Island and the Centreville Wharf area more specifically, the open waters of the Chesapeake Bay, Chester River, Eastern Bay and Prospect Bay offer endless opportunities for the adventurous paddler.

Historic & Cultural Resources

The County's heritage dates back to the 1600's with many historic sites and landmarks still evident today in small towns and villages across the County. Museums, churches, ferry terminals, courthouses and train stations stand as monuments to the rich and diverse history of Queen Anne's County.

While not directly considered part of the overall Park system of the County, many of Queen Anne's County's historical and cultural resources such as Bloomfield, Centreville Wharf Marina, and the Historic District of Stevensville can be found within close proximity of area parks, or along trail routes.

Currently, Queen Anne's County has more than 600 historic sites listed on the Maryland Inventory of Historic Properties (MIHP) including the County's two National Historic Districts of Stevensville and Centreville. In addition, the County has numerous National Register of Historic Places listings, with most privately owned or some owned/managed by one of the two historic societies within the County. Several are owned by the County and managed and maintained by the Department of Parks. Maryland Historical Trust Non- Capital Grants have been utilized to help maintain or restore several of the County's historic resource sites.

Kent Island Heritage Society and Queen Anne's County Historical Society are two private non-profits existing within the County for the purposes of recognizing, promoting, restoring and preserving historic and cultural resources. Along with the Historic Sites Consortium of Queen Anne's County – a 17 site membership that works to support preservation and stewardship, an effort is made toward preserving the rich heritage of Queen Anne's County. With an emphasis on heritage tourism by the State, local government is beginning to recognize the opportunities that exist and how they may promote sustainability and positive economic impact in our towns and communities.

Matapeake Clubhouse and Public Beach

Public Landings & Marinas

Queen Anne's County has long been committed to providing public access to area waterways. This commitment has resulted in having 18 public waterfront landing locations, two with public fishing piers within the County. The Public Landings Division of Parks also manages and maintains three county owned marinas; The Waterman's Heritage Marina, Little Creek Marina and the Centreville Wharf Marina. The public landings of Queen Anne's County are extremely popular and provide county residents and tourists with outlets to the Chesapeake Bay for recreational and commercial purposes. Queen Anne's County provides the public with more public landings/access to the water than its neighboring counties, resulting in very heavy use of these facilities. Public Landings requires that a permit be obtained for use of the facilities and makes permit purchase available through many local vendors throughout the County.

Romancoke Fishing Pier

County Goals for Parks and Recreation

Queen Anne's County provides more than 3000 acres of County owned/managed parks, along with Board of Education facilities (more than 300 ac.), State owned parks and open space to meet the recreational needs of its citizens. The parks and open space located within the County are categorized as: Neighborhood Parks, Community Parks, Town Parks, Countywide Special Use Parks, State Owned Facilities and County Landings and Piers. Queen Anne's County well surpasses the State benchmark of 30ac/1000 capita and shall continue to do so based on population projections per the 2010 Census. As population centers expand within the County, and become more densely populated, the need for open space, parks, and recreational facilities and programming increases. Queen Anne's County remains dedicated to providing adequate lands for parks and open space and developing facilities and programming to meet the needs of its future population.

Parklands within the County provide citizens and visitors with vast opportunities for passive and active recreational opportunities. While there are sufficient acres of parkland, the recent Parks Needs Survey reflects areas of insufficient facilities such as aquatic and community centers, and the programming that one might find in a community of a much greater population. The influence of the private sector providing recreational opportunities has grown tremendously in Queen Anne's County. Many private for-profit athletic teams, private venues for indoor sports and swimming, equestrian activities, performing arts and recreational classes have developed in recent years. These private offerings assist in filling the gap by providing recreational facilities and programming that might not be otherwise available currently thru the public park system.

The provision of public parks, recreational amenities and associated programming is a critical component to providing the desired quality of life for County residents. Queen Anne's County has become somewhat of a bedroom community to the Baltimore/Washington region, one comprised of a somewhat older demographic. The fact that a number of active adult communities have been built in recent years, school - aged child populations are on the decline, and people are generally more willing to travel for entertainment and recreational opportunities, plays a part in how the parks and open space of the County are being utilized.

In recent years many parks, particularly those in the Kent Island area and within close proximity of the Route 50 corridor are utilized by out of county residents. This abundance of out of county and out of state users is certainly welcomed use of our park system. With additional use comes added issues and concerns of security, maintenance and general up keep of parks not originally designed for such heavy use. For instance, Matapeake Clubhouse and Public Beach and Terrapin Nature Park, both on Kent Island – see a tremendous increase in out of county users, particularly during summer months when State owned Sandy Point Park has reached parking capacity in early morning, users decide to drive the short distance over to Kent Island. Social and cultural differences in the way people live, play and interact in general, leave Queen Anne's County with issues that may not have been anticipated in original park design, planning and programming. Issues such as securing facilities at night, multi-lingual needs and increase in enforcement resources must be included in long term goals of the park system.

As a result of evolving needs and the ways in which facilities are used, the Parks Department and its Divisions continue to identify issues and develop recommendations to address them. The following initiatives are at the forefront and serve as a basis for determining recommendations:

- *Providing clean, safe and well maintained parks and facilities* – The Department strives to keep trash from littering park facilities. Along with added Parks resources and staff, partnering with volunteers and non-profit organizations for regular clean-ups of public parks and landings has grown.

- *Providing recreational opportunities to address needs of all age groups in as many parks as possible* - Development of facilities that may be of a more passive nature alongside those of a more active nature. Development of perimeter walking trails surrounding athletic fields, restroom facilities, picnic areas and interpretive nature exhibits are emphasized in some of the County's larger parks. Recent focus has been to provide perimeter and interior walking trails within some of the larger parks that may already house active sports fields. These trails, along with seating areas and playgrounds are intended to provide recreation amenities for age groups outside that involved in organized athletic sporting events. Old Love Point Park, and Whitemarsh Park for example, have recent improvements including seating areas, perimeter trails and improved concession/restroom areas that address needs of older park users and the younger park user, as well as the athletes utilizing the fields. Requests from older park users on Kent Island led to recent striping of Pickle Ball courts at Mowbray Park in Stevensville. Such amenities, make the park more attractive to various user groups and help fulfill the need for recreational facilities for all ages. (See additional information in Appendix B – Parks Needs Assessment Survey Results).

- *Further Develop and Incorporate the Maryland Partnership for Children in Nature Initiative* – Explore opportunities to establish goals that support increased access for students and families to natural areas and parklands for both formal and informal educational and recreational opportunities. Work with the County Board of Education to strengthen and support this initiative through use of the public park system and recreational programming to further environmental literacy requirements and provide opportunities for hands-on environmental stewardship.

- *Development of a Park Ranger Program* – Trained through the Maryland Recreation and Parks Association, and partnering with local law enforcement and DNR police, the recent addition of Park Rangers to the Department of Parks has already proven to be an asset to the park system. Rangers assist park and public landings users, help monitor park hours and regulations and provide interpretive programs at natural park areas. Future plans to incorporate County Park Rangers into after school and environmental education programs remain a goal of the department together with the Recreation Division and Board of Education.

Based on the Needs Analysis conducted by BEACON, the top needs identified for County parks and recreation are:

- Swimming/Aquatic Center
- Community Center
- Sports Fields
- Bathroom Facilities
- Trails
- Outdoor Concerts/Movies
- Special Events/Seasonal Festivals
- Water Activites (paddle sports, sailing, etc)
- Performing/Visual Arts

Queen Anne's County assesses all opportunities to provide needs expressed by the public as they may arise. Opportunities for land acquisition and partnerships are evaluated to provide these resources. Over the past several years the County has moved to include resources that address those needs as outlined in the 2012 LPPRP, and that may also address those found within the most recent Needs Analysis (Survey). Along with ***Goals for Parks & Recreation*** that may carry over and include some goals from the 2012 LPPRP, the Department of Parks avails itself as opportunities may arise, to work towards addressing some of the overarching goals with actions such as those listed below:

- Queen Anne's County has partnered with the 'Y of the Chesapeake' to provide an 18.7 ac site within the Centreville Town limits to provide a 'Y' facility, complete with swimming pool, exercise facilities, recreation programming and additional facilities typically found at the 'Y'. In the interim, the 'Y' has partnered with the County for the use of the parklands of Conquest, specifically the site of the Corsica River Yacht Club to provide public water-oriented events/activities and conduct summer day camps for area youth. Queen Anne's County Parks provide primitive camp sites for scouting groups, and maintains an active program with eligible scouts earning their Eagle Scout status by developing various projects within the park system.

- Queen Anne's County has but one State Approved Bathing Beach, that of Matapeake Public Beach. Due to public demand, the beaches of Terrapin Park and Ferry Point have been added as beaches to be monitored by the Maryland Department of the Environment for public swimming safety. Efforts continue through park planning activities and as opportunities may arise to provide public access to the water. Design of waterfront boardwalks in areas such as the Kent Narrows Waterfront Village Center is a requirement of development proposals and affords a recreational element to spaces.

- Queen Anne's County has deeded land/buildings to private non-profit organizations such as the Kennard Alumni Association (Kennard School) and the Sudlersville Volunteer Fire Department (Sudlersville Middle School) for their use within their respective communities.

- Queen Anne's County continues to support various public and private organizations, ranging from volunteer fire departments, area heritage and cultural organizations, and sports and

community organizations so they may help fill the void of providing community oriented space for activity programming, community meetings and events.

- The County and the Department of Community Services thru the Recreation Division continues to add day camps for youth with extended day-care hours, cultural events, excursions, and seasonal entertainment events at area parks.

The Parks Department continues to address additional goals of both the State and the County since the 2012 LPPRP update was adopted. These goals and recommendations are included in the table titled ***State Park and Recreation Goals – Actions Taken by Queen Anne's County, 2012 – 2017.***

Historic Christ Church Arts & Cultural Center

The Goals for parks and recreation identified in the County's 2012 LPPRP have been updated to include recommendations of the 2017 Parks Needs Assessment Survey.

In addition to public feedback collected and evaluated through the 2017 Parks Needs Assessment Survey, local goals include objectives and recommendations of the Parks & Recreation Advisory Board (PRAB), the Queen Anne's County Commissioners, the Department of Parks and the Division of Recreation staff:

Queen Anne's County Goals for Parks and Recreation - 2017

1. **Provide Quality, Clean, Safe and Accessible Recreational Environments** – Make a variety of quality recreational environments and opportunities readily accessible to all of its citizens, and thereby support to their physical and mental well-being. Develop indoor community recreational facilities where physically and fiscally possible. Continue to develop multi-purpose athletic fields and passive use recreational areas where feasible. (new/expanded goal).

2. **Explore funding mechanisms to support a comprehensive maintenance plan for Parks** – The Needs Survey suggests that most respondents are not opposed to paying a fee for additional and better equipped and maintained recreational facilities. A permanent funding source should be identified to fund a comprehensive maintenance program to provide state of the art parks and facilities that are safe, clean and accessible. (on-going since 2012 LPPRP).

3. **Strategic Use of Facilities as Amenities to Communities** – Recognize and strategically use parks and recreation facilities as amenities to make communities, the County, and the State more desirable places to live, work and visit. Provide active and passive recreation opportunities for all ages and user groups. Locate future park environs so as to enhance their development and programming based on proximity to school properties, towns, and protection of natural resources. Provide and improve connectivity to population and town centers, recreational centers, historic and cultural sites and parks (new/expanded goal).

4. **Use State Investments to Compliment other Goals and Protect Sensitive Lands** – Use State investment in parks, recreation and open space to complement and mutually support the broader goals and objectives of community and comprehensive/master plans. Utilize State Investments to protect sensitive lands, develop water quality best management practices and protect wildlife habitat. (new goal)

5. **Utilize State/Local Proximity & Equity Analysis Tools to Locate Future Park and Recreational Facilities**– To the greatest degree feasible, ensure that recreational land, facilities and infrastructure are conveniently located relative to population centers, residential areas, business areas, accessible without reliance on the automobile, and are developed to be sustainable and help protect natural open space and resources. Utilize State/Local GIS information, demographics and Parks Needs Assessment Survey Results to map areas of possible future parkland development, and/or enhancement of existing parks to serve all user age groups. (new goal).

6. **Explore and Invest in Neighborhood and Community Parks & Facilities based on Needs Analysis** – Consider the public 2017 Parks Needs Analysis to propose future facilities and consider components to existing park facilities that may complement other public investments and priorities in existing communities. Provide public infrastructure where feasible to allow for availability of water and sewer in order to further develop park amenities such as comfort stations and irrigation. Continue to evaluate older park equipment to ensure compliance with guidelines for the Americans with Disabilities Act (ADA) (new goal).

7. **Protect Recreational Open Space at Appropriate Levels Compared to Developed Land** – Based on current County Comprehensive Plan goals and objectives for land preservation and natural resource conservation, continue to protect recreational open space and resource lands at a rate that equals or exceeds the rate that land is developed. Include open space and recreational lands in project development and community plans. (on-going from 2012LPPRP).

8. **Protect and Preserve Natural Resource Lands, Sensitive Areas and Wildlife Habitat wherever feasible** – Continue to protect and conserve natural resources, sensitive lands and wildlife habitat within County public lands. Develop preservation plans for area parks to include enhancement of wetlands, wildlife habitat areas and further address local watershed implementation goals. (on-going since 2012 LPPRP).

9. **Promote safe and convenient pedestrian and bicycle access Countywide** – Complement the existing transportation system with non-motorized transportation routes and connectivity throughout the county with focus on connectivity within growth centers. Consider trails as an alternative mode of transportation in areas where traffic volumes are problematic. (on-going since 2012 LPPRP).

10. **Explore and Develop opportunities for partnerships with local Healthcare professionals** – Encourage programs and partnerships for mental and physical well- being through cooperation with local healthcare professionals recommending the use of park facilities and programs to their patients. Further explore and develop goals of the *Maryland Partnership for Children in Nature* to provide health-related opportunities for families within the County's park system. (new goal).

11. **Explore and Develop opportunities to further the goals of the Maryland Children in Nature Partnership** – Queen Anne's County is well situated with its extensive parkland system and existing relationship with the QAC Board of Education, as well as with local private schools to further this State initiative. Partner with BOE to help develop school curriculum based on environmental stewardship, land and water conservation and implementing these lessons in the field (parks)to fulfill local objectives of this program. (new/expanded goal).

12. **Create public access to the waterfront and further develop the County water trail system where feasible –** Water and access to the waterfront are core elements to life in Queen Anne's County. The County should be vigilant in finding opportunities to increase public access to the water through any means possible, including easements, leases and possible acquisition**.** Wherever

feasible, water trails should be implemented and a comprehensive water trail network should be developed throughout the multi- county region. (expanded goal since 2012 LPPRP).

13. **Establish an endowment to support scholarships and programs for the county's at-risk populations -** Encourage private donations large enough to establish endowments to generate capital in order to provide scholarships to fund existing programs or establish new programs aimed towards at- risk populations within the County. (on-going since 2012 LPPRP).

14. **Further Develop a Park Ranger Program –** Work with the Sheriff's Department, MD Natural Resource Police and Maryland Recreation and Parks Association to expand and train the County Park Ranger Program to assist with monitoring, maintaining area parks, trails and waterways, assisting visitors, and enforcing park regulations. Have Rangers work with area naturalists and Board of Education to develop interpretive programs that may address goals/objectives of *Maryland's Partnership for Children in Nature* initiative. (new goal).

15. **Explore the potential benefits of re-organizing to have the Division of Recreation join again with the Department of Parks -** Evaluate the strengths, weaknesses and opportunities of having the Division of Recreation function cooperatively as the Department of Parks and Recreation. Explore ways to utilize resources within both organizations and combine efforts for greater efficiency and public benefit. (new goal).

16. **Develop and aggressively brand and publicize a positive, recognizable identity for County Parks -** Brand and promote the Department of Parks and Recreation and its Divisions. Develop a positive identity and encourage participation in local parks and recreation programs and activities that meet the needs of local citizens, and serve to promote sustainability, natural resource protection and conservation, area tourism and boost economic activity within the County. (on-going since 2012 LPPRP).

17. **Leverage the County's outstanding Park system to further Tourism and Economic Development goals and initiatives –** Continue to promote parks and recreational facilities as regional attractions and amenities to tourists and prospective businesses. (on-going since 2012)LPPRP.

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Maryland State Parks, Recreation and Opens Space Goals Met By Queen Anne's County, 2012 - 2017

State Goals for Parks, Recreation & Open Space	Parks, Recreation or Open Space Projects by QAC Parks	Funding Source
1. Make a variety of quality recreational environments and opportunities readily accessible to all of its citizens and thereby contribute to their physical and mental well-being.	• Retrofit of ADA trails/paths at Love Point, Rte 18 Park • Provide perimeter walking trails at Whitemarsh Park, Love Point, Batts Neck Parks	NRT grants POS/LWCF Community Parks & Playgrounds
2. Recognize and strategically use parks and recreation facilities as amenities to make communities, counties and the State more desirable places to live, work, play and visit.	• Elimination of Beach Permit requirement • Create/provide maps of parks/trails/landings available online and in print • Emphasis on park development or open space provision in high density areas.	NRT grants MHAA grants Private land conservation
3. Use state investment in parks, recreation and open space to complement and mutually support the broader goals and objectives of local comprehensive/master plans.	• Use of NRT grants to further connectivity to towns/points of interes via trails • Use of POS funds to provide infrastructure in local parks • Rural Legacy funds to preserve agricultural lands	NRT grants POS/LWCF Rural Legacy
4. To the greatest degree feasible, ensure that recreational land and facilities for local populations are conveniently located relative to population centers, are accessible without reliance on the automobile and help to protect natural open spaces and resources .	• Continued emphasis on need for sidewalk and connectivity ordinance • Adoption of official Bicycle/Pedestrian Circulation & Connectivity Plan • Trail development cross country eastward • Encourage on-site recreation/open space be provided in high density districts	NRT grants Safety Lu Private land development
5. Complement infrastructure and other public investments and priorities in existing communities and areas planned for growth through investment in neighborhood and community parks and facilities.	• Continued use of NRT, POS grants to develop neighborhood/community parks	NRT grants POS/LWCF
6. Continue to protect recreational open space and resource lands at a rate that equals or exceeds the rate that land is developed at a statewide level.	• Continue to develop natural parks to enhance/protect/preserve natural resources & wildlife.	Rural Legacy Chesapeake Bay Restoration Funds

Implementing Programs

Parks Funding

Through careful planning, the County continues to use its financial resources in a responsible manner to ensure that residents have access to benefits obtained from high quality open space, protected natural resources and active and passive recreation. Through the forging of strategic partnerships with Federal/ State Agencies and Departments, as well as Non-profit Organizations and Foundations, the County has successfully leveraged local funds to secure millions of dollars of grant funding for the acquisition and development of vital park land.

Queen Anne's County funds Park development, operation and maintenance through a variety of sources:

- Operating Budget: The overall Department of Parks FY 17 Operating Budget was *$ 5,266,235* of which $ 1,917,029 is the total Operating Budget of the three Enterprise Divisions: The Bay Bridge Airport, The Blue Heron Golf Course, and the Public Landings & Marina Division. Approximately 72% of the Capital Budget is derived from impact fees, real estate transfer tax, PayGo and Bonds.

- Capital Funds: The overall Department of Parks FY 2017 Capital Budget was *$ 1,889,000* of which $ 950,000, is the total Capital Budget of the three Enterprise Divisions: The Bay Bridge Airport, The Blue Heron Golf Course, and the Public landings & Marina Division.

Queen Anne's County has assessed a Parks Impact Fee on single family new construction since 2006. This fee is pro-rated for apartments and multi-family dwelling units based on amount of square footage per unit. In recent years the amount assessed was significantly lowered as the amount of new home development had declined. The funds collected as impact fees may be used for acquisition and/or development of park areas and facilities.

The Maryland Department of Natural Resources Waterway Improvement Fund grants provide funding for many major improvements to Queen Anne's County's Public Landing sites, marinas and piers. In addition, funds collected from the QAC Landings permit program are used to help maintain and manage the landings and marina sites.

Queen Anne's County relies on many Federal and State funding opportunities to acquire and develop park facilities. Along with various other Federal and State grant programs, Program Open Space (POS) funds are an important source of funds for capital projects within the Queen Anne's County Park system. Between FY2011 and FY2017, the County's annual POS appropriation averaged approximately $146,000. Program Open Space funds have been utilized by Queen Anne's County to maximize land acquisition in order to reach State and

County goals. Continued and increased POS funding is essential if Queen Anne's County is expected to reach its park, recreation and open space goals in future years.

Figure SII-4

Maryland Program Open Space Funding

Fiscal Year	POS Award to QAC
FY2011	$ 160,077.58
FY2012	$ 79,653.42
FY2013	$ 135,469.23
FY2014	$ 108,070.96
FY2015	$ 143,403.96
FY2016	$ 241,082.00
FY2017	$ 152,418.00
TOTAL FY11 - FY17	$ 1,020,175.10

In addition to grant programs such as Program Open Space and Rural Legacy, Queen Anne's County diligently pursues other sources of funding each year for parks, trails, conservation, enhancement of, wildlife habitat and open space. Since the 2012 LPPRP update, Queen Anne's County and the Department of Parks has been awarded grants and technical assistance by the following funding entities in order to meet the goals and objectives involving parks, recreation, natural resource conservation and agricultural land preservation:

- *Program Open Space;*
- *Rural Legacy Program;*
- *Safety Lu – Federal Transportation Funding for Trails;*
- *National Recreation Trails Program;*
- *National Wildlife Heritage/Wildlife Conservation Society;*
- *Chesapeake Bay Trust;*
- *Maryland DNR Chesapeake & Atlantic Trust Fund/Natural Filters Program;*

- *Maryland Heritage Areas Program;*
- *MD DNR Waterways Improvement Program; and*
- *Maryland DNR Public Access, Water Trails & Recreation Planning*

Inventory of Existing Public Parks and Recreation Facilities

The inventory of Queen Anne's County existing public parks and recreation facilities has been updated for inclusion in this 2017 LPPRP update.

Inventory of County Parks has been updated to categorize parks by County, Municipality, State and Privately owned lands.

No additional lands have been added to the inventory of existing public parks, however, recreation facilities, amenities and additional parking have been added throughout the park system and are reflected in the spreadsheet report. Additionally lands owned by the Board of Education and land trusts are included on the parks inventory spreadsheet and the park and recreational facilities map.

An inventory of County public parks and recreation properties may be found on the following map, ***Queen Anne's County Park & Recreation Facilities, 2017,*** and on the spreadsheet titled ***Inventory of Queen Anne's County Park and Recreation Facilities, 2017.***

Queen Anne's County
Comprehensive Plan Update

Maryland

Queen Anne's County Park and Recreational Facilities

Neighborhood Parks
- 1 Crumpton Park
- 2 Mowbray Park
- 3 Pinkney Park
- 4 Long Point Park
- 5 Ewing Pond Park
- 6 Stevensville Park

Community Parks
- 7 Round Top Park
- 8 Grasonville Park
- 9 Church Hill Park
- 10 Batts Neck Park
- 11 Old Love Point Park
- 12 Route 18 Park
- 13 Whitemarsh Park
- 14 Sudlersville Park

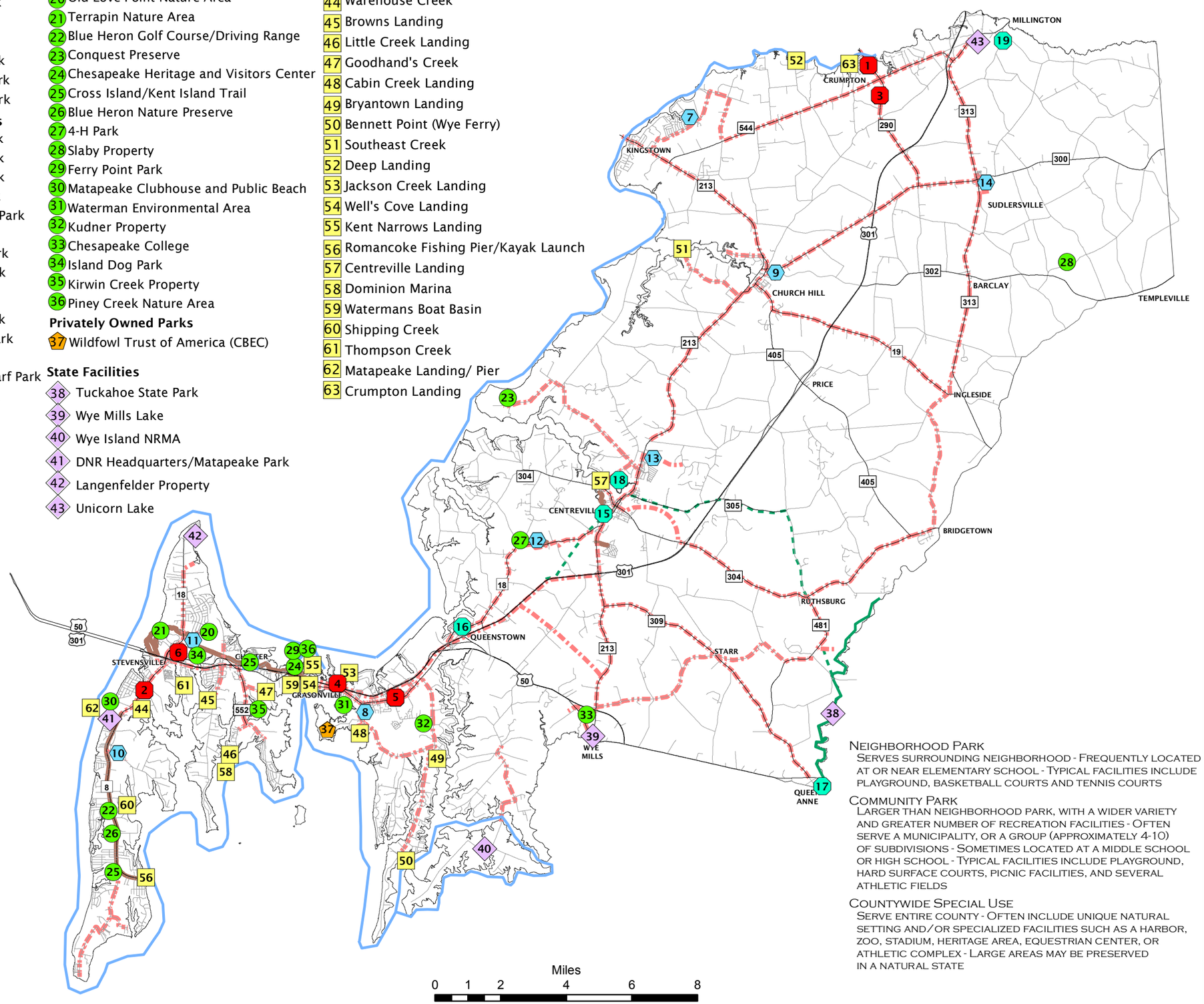
Town Parks
- 15 Mill Stream Park
- 16 Queenstown Park
- 17 Roosevelt Park
- 18 Centreville Wharf Park
- 19 Millington Park

Countywide Special Use
- 20 Old Love Point Nature Area
- 21 Terrapin Nature Area
- 22 Blue Heron Golf Course/Driving Range
- 23 Conquest Preserve
- 24 Chesapeake Heritage and Visitors Center
- 25 Cross Island/Kent Island Trail
- 26 Blue Heron Nature Preserve
- 27 4-H Park
- 28 Slaby Property
- 29 Ferry Point Park
- 30 Matapeake Clubhouse and Public Beach
- 31 Waterman Environmental Area
- 32 Kudner Property
- 33 Chesapeake College
- 34 Island Dog Park
- 35 Kirwin Creek Property
- 36 Piney Creek Nature Area

Privately Owned Parks
- 37 Wildfowl Trust of America (CBEC)

State Facilities
- 38 Tuckahoe State Park
- 39 Wye Mills Lake
- 40 Wye Island NRMA
- 41 DNR Headquarters/Matapeake Park
- 42 Langenfelder Property
- 43 Unicorn Lake

Public Landings
- 44 Warehouse Creek
- 45 Browns Landing
- 46 Little Creek Landing
- 47 Goodhand's Creek
- 48 Cabin Creek Landing
- 49 Bryantown Landing
- 50 Bennett Point (Wye Ferry)
- 51 Southeast Creek
- 52 Deep Landing
- 53 Jackson Creek Landing
- 54 Well's Cove Landing
- 55 Kent Narrows Landing
- 56 Romancoke Fishing Pier/Kayak Launch
- 57 Centreville Landing
- 58 Dominion Marina
- 59 Watermans Boat Basin
- 60 Shipping Creek
- 61 Thompson Creek
- 62 Matapeake Landing/ Pier
- 63 Crumpton Landing



Legend
- Community Parks
- Coutywide Special Use
- Neighborhood Parks
- Private Parks
- State Facilities
- Town Parks
- Public Landings
- WaterTrails
- Other Roadways
- Highways
- Proposed Trails
- Existing Trails
- Existing Greenway *
- Potential Greenway *
- * County Boundary

Greenway trail data was provided by the Maryland Department of Natural Resources. Greenway trails were added where there was no overlap with Queen Anne's County trails (Existing and Proposed Trails).

Neighborhood Park
Serves surrounding neighborhood - Frequently located at or near elementary school - Typical facilities include playground, basketball courts and tennis courts

Community Park
Larger than neighborhood park, with a wider variety and greater number of recreation facilities - Often serve a municipality, or a group (approximately 4-10) of subdivisions - Sometimes located at a middle school or high school - Typical facilities include playground, hard surface courts, picnic facilities, and several athletic fields

Countywide Special Use
Serve entire county - Often include unique natural setting and/or specialized facilities such as a harbor, zoo, stadium, heritage area, equestrian center, or athletic complex - Large areas may be preserved in a natural state

Source: Queen Anne's County Department of Land Use, Growth Management and Environment, Parks and Recreation and Maryland Department of Natural Resources

December 2016

MAP CF-2

Parks Facilities Inventory

	NO.	Service Area[1]	Size (Acres)	Park Type[2]	Parking Spaces	Rest-rooms	Picnic Tables	Tennis Courts	Outdoor Basketball Courts	Indoor (Gym) Courts	Play-grounds	Multi-Purpose Fields	Baseball Diamonds	Volley Ball Courts	Inline Hockey	Conces-sions	Bleachers (sets)	Fees	Trails (Miles) E=Eques	Pavilions	Access Control	Fishing (Shoreline & Piers) (Feet)	Golf (holes)	Boat Ramps	Boat Slips	Dog Park	Horseshoe pits	Beaches (miles)
Neighborhood Parks																												
Crumpton Park	1	N	50	N/Co	40	2	5				1		1				2	N			1							
Mowbray Park	2	S	20.7	N	80	2	12	3			2	1	2					N		1	2							
Pinkney Park	3	N	12.5	N	60	2	13		2		1	1	2	1				N		1	1						2	
Long Point Park	4	C	7.3	N	6						1							N	0.33		1							
Ewing Pond Park	5	C	18	C	10													N	1.75		1	2190						
Stevensville Park	6	S	0.3	N	22		2											N			1							
Subtotals - Neighborhood Parks			***108.8***		***218***	***6***	***32***	***3***	***2***		***5***	***2***	***5***	***1***			***2***		***2.08***	***2***	***7***	***2190***					***2***	
Community Parks																												
Round Top Park	7	N	110	C	100		13	2	1		1	4	2				4	N		1	3							
Grasonville Park	8	C	38.6	C	75		0	1	1		1	1	2					N	2		1							
Church Hill Park	9	N	41	C	150	4	10		1		1	5	2			1	4	N	1	1	3							
Batts Neck Park	10	S	60	C	300	8					1	4	1		1		1	N			1							
Old Love Point Park	11	C	30.5	C	325	4	3	3	2		1	12	4	2		1	3	N		1	2							
Rt 18 Park	12	C	51.6	C	200	8	6				1	8	4			1	10	N	1.5	1	3							
White Marsh Park	13	C	318	Co	220							9	4				8	N			1							
Sudlersville Park	14	N	36.5	C	75	2	14	2	2		1	4	2	1			4	N	1	1	1						3	
Subtotals - Community Parks			***686.2***		***1445***	***26***	***46***	***8***	***7***		***7***	***47***	***21***	***3***	***1***	***3***	***34***		***5.5***	***5***	***15***						***3***	
Town Parks																												
Mill Stream Park	15	C	2.2	C																	1							
Queenstown Park	16	C	2	C																	1							
Roosevelt Park	17	S	7.8	C	20		8				1	1	1					N	0.5	1	1						2	
Centreville Wharf Park	18	C	2.4	C																	1							
Millington Park	19	N	1.5	N																	1							
Subtotals - Town Parks			***15.9***		***20***		***8***				***1***	***1***	***1***						***0.5***	***1***	***5***						***2***	
Countywide Special Use																												
Old Love Point Nature Area	20	S	94.52	Co														N			1							
Terrapin Nature Park	21	S	275	Co	53		9											N	3		1	2112						0.53
Blue Heron Golf Course/Driving Range	22	S	94.1	Co	50	2												Y			1		18					
Conquest Preserve	23	C	758	Co	120	8	25						1					Y	2.5 (E)	1	2						2	0.12
Chesapeake Heritage/Visitors Center[4]	24	S	2.1	Co	43	6	3											N			1							
Cross Island/Kent Island Trail	25	S	37	Co	250		10											N	13.5		9							
Blue Heron Nature Preserve	26	S	300	Co	10													N	2.5 (E)		1							
4-H Park	27	C	26.96	Co		3					1							Y		6	2							
Slaby Property	28	S	26.6	C														N			1							
Ferry Point Park[4]	29	S	41	Co														N	2		1	685						0.13
Matapeake Clubhouse & Public Beach[5]	30	S	5	Co	110	4												N	1		1							0.13
Waterman Environmental Area	31	S	137	Co														N			1							
Kudner Property	32	C	271.5	Co														N			1							
Chesapeake College	33	S	163.3	Co														Y			2							
Kent Island Dog Park	34	S	5	C	20		1											N		1	1					1		
Kirwin Creek Property	35	S	12.7	Co														N			1							
Piney Creek Nature Area	36	S	40.1	Co	5													N			1							
Subtotals - Countywide Special Use			***2289.9***		***661***	***23***	***48***				***1***		***1***						***19.5***	***8***	***28***	***2797***	***18***			***1***	***2***	***0.91***
Privately Owned Facilities																												
Wildfowl Trust of America (CBEC)	37	S	255.4	Co																								
State Facilities																												
Tuckahoe State Park	38	C	1836.7																									
Wye Mills Lake	39	S	66.8																									
Wye Island Natural Resource Area	40	S	2512																									
DNR Headquarters/Matapeake Park	41	S	17																									
Langenfelder Property	42	S	65.27																									
Unicorn Lake	43	N	189.2																									
Totals - State Facilities			***4415.5***																									
County Landings and Piers																												
Matapeake Pier & Landing	44	S	2	Co	61	4	10											Y			1	650		2				
Crumpton Landing	45	N	0.3	N	2													Y			1			1				
Warehouse Creek Landing	46	S	0.1	N	2													Y			1							
Browns Landing	47	S	----	N	—													N			1							
Little Creek Landing	48	S	1	N	15													Y			1			1				
Goodhand Creek Landing	49	S	1.5	N	12													Y			1			1				
Cabin Creek Landing	50	C	2.6	N	6													Y			1							
Bryantown Landing	51	C	0.5	N	10													Y			1							
Bennett Point Landing	52	C	1.5	N	8													Y			1							
Southeast Creek Landing	53	N	0.3	N	6													Y			1			1				
Deep Landing	54	N	0.7	N	12													Y			1			1				
Jackson Creek Landing	55	C	1.5	N	4													Y			1							
Wells Cove Landing	56	S	2	N	74													Y			1	50						
Kent Narrows Landing	57	S	1	N	33													Y			2			1				
Romancoke Pier	58	S	2.5	N	43	4	2											Y			1	600						
Centreville Landing	59	C	1	N	12	2												Y			1			1	21			
Dominion Marina	60	S	0.5	N	6													Y			1				6			
Watermans Boat Basin	61	S	1.7	N	145	4												Y			1				145			
Shipping Creek Landing	62	S	2.5	N	24													Y			1			1				
Thompson Creek Landing	63	S	1	N	21													Y			1			1				
Subtotals - Landings and Piers			***24.2***		***496***	***14***	***12***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***		***0***	***0***	***21***	***1300***	***0***	***11***	***172***	***0***	***0***	***0***
Totals - Queen Anne's County Park System (Excl.State/Private)			***3125***		***2840***	***69***	***146***	***11***	***9***		***14***	***50***	***28***	***4***	***1***	***3***	***36***		***27.58***	***16***	***76***	***6287***	***18***	***11***	***172***	***1***	***9***	***0.91***

[1] Service Area: N - North, C - Central, S - South
[2] Park Type: N - Neighborhood, C - Community, Co- Countywide/ Special Use
[3] Acreage of school sites is calculated by dividing recreational acreage by 60%, per MDP/DNR guidelines
[4] Parking & Restrooms for Ferry Point Park is located at the Chesapeake Exploration Center.
[5] Matapeake is The County's only public beach, includes separate area where dogs are allowed
[6] Board of Education properties utilized by Parks through a joint agreement

	NO.	Service Area[1]	Size (Acres)	Park Type[2]	Parking Spaces	Rest-rooms	Picnic Tables	Tennis Courts	Outdoor Basketball Courts	Indoor (Gym) Courts	Play-grounds	Foot/Soc/LaX/Field Hockey Fields	Baseball Diamonds	Volley Ball Courts	Inline Hockey	Conces-sions	Bleachers (sets)	Fees	Trails (Miles) E=Eques	Pavilions	Access Control	Fishing (Shoreline & Piers) (Feet)	Golf (holes)	Boat Ramps	Boat Slips	Dog Park	Horseshoe pits	Beaches (miles)
Board of Education [3,8]																												
Bayside Elementary School	64	S	16	N					2	1	2	1	1															
Centreville Elementary School	65	C	14.2	N						1	2	1	1															
Centreville Middle School	66	C	54	C					2	1		3	3															
Church Hill Elementary School	67	N	8	N						1	2	2								1								
Grasonville Elementary School	68	C	35.5	N					1	1	2	1	1															
Kennard Elementary School	69	C	26.2	N						1	2	2																
Kent Island Elementary School	70	S	13.7	N						1	2	1																
Kent Island High School	71	S	57.7	C				4		1		6	2				2											
Matapeake Elementary/Middle Schools	72	S	40	N						2	2	4	3															
Queen Anne's High School	73	C	13.3	C				6	2	1		7	2				2											
Sudlersville Elementary School	74	N	10.3	N					4	1	2	2	1							1								
Sudlersville Middle School	75	N	19.8	C				2		1		3	2															
Stevensville Middle School	76	S	11.7	C					2	1		1	0															
Subtotals - Board of Education			*320.4*		*0*	*0*	*0*	*12*	*13*	*14*	*16*	*34*	*16*	*0*	*0*	*0*	*4*		*0*	*2*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

Measuring User Demand

Collecting and analyzing data regarding the public use of existing county public parks and recreational facilities is important in estimating the level of service provided by the existing County parks system. It is equally important to gain an understanding of the user's quality of experience when utilizing park facilities and/or engaging in recreational programs. By garnering public input, the Department of Parks is able to assess strengths, weaknesses, opportunities and trends to help determine how best to calculate goals and objectives moving forward and where to concentrate resources.

When measuring user demand, Queen Anne's County is somewhat unique. Being within close driving distance to population centers such as Annapolis and Easton, as well as many Delaware and Kent County residents, Queen Anne's County has seen a significant rise in non- county resident use of the County Park system.

In measuring user demand the BEACON Needs Analysis Survey served as the primary source of data collection for user demand, however other information and data are collected to further inform the Department of Parks of use of parks, trails and public landings:

- The Parks & Recreation Advisory Board updates the Department regularly on their thoughts and concerns for existing park facilities, maintenance and enforcement of existing facilities and planning for future facilities.

- The Public Landing division sells and tracks sale of annual/daily permits for use of the public landings , rents boat slips at the Watermen's Heritage Marina in the Kent Narrows, and collects fees for permitted parking at all public fishing piers.

- The Department of Economic Development & Tourism assists the Department of Parks by tracking user information with respect to Cross Island Trail use, visitors to the Chesapeake Heritage Center (visitors center), etc.

- The Recreation division has seen an increase in attendance of programs and camps.

The physical location of Queen Anne's County has proven to be ideal for hosting sporting tournaments, boat shows, seasonal and holiday celebrations. Such activities attract tourism dollars and increase the benefit of the use of public parks and open space. With this attention and use also come impacts associated with overuse of park facilities. The continued intensive use has placed a heavy toll upon the limited resources of the Parks Department. General maintenance, wear and tear, after hours trespassing, etc., are but some of the issues that must now be addressed on a regular basis.

The Department, together with the Parks & Recreation Advisory Board and the County Commissioners, must contend annually with decisions to elevate user fees for field reservations, limit usage of facilities, and the possibility of creating admission fees to various park facilities. The increased pressures of private sports leagues and increase in tourism - related events, have sometimes rendered County parks undesirable for use by local residents. In order to maintain park facilities in the safe, clean and desirable condition county residents wish to see, and balance use by local residents with that of out of County or State visitors, a thorough analysis of the impacts and cost benefits associated with use of the park system and facilities should be conducted.

Public Engagement & Outreach

The Queen Anne's County Department of Parks consulted with *The Business Economic And Community Outreach Network @ Salisbury University* (BEACON) in formulating a Parks Survey which analyzed the needs/wants of the general public of Queen Anne's County. Working together with BEACON, the Department solicited input from a newly created 60 person focus Group for the purpose of development of the survey itself. BEACON conducted Focus Group meetings as well as individual meetings with the Department of Parks, and the Parks and Recreation Advisory Board (PRAB) for discussion of issues and development of questions to be asked by way of the public survey. The PRAB meetings were used from November 2016 as a public engagement tool in preparation of developing the BEACON Survey and conducting public outreach. It is the goal of the County that each PRAB member represents a different geographic region of the County and/or represents a group that has direct impact on the park system. Members represent the Board of Education, the Sheriff's Office, environmental stewards and private sports leagues.

It was determined through the Focus Group sessions that the Survey should focus on what citizens wish to see in the future. The types of parks, recreation and open space *they plan to utilize* within the County parks system - as opposed to *how they use existing* lands and facilities currently. This was an important distinction to be made, as Queen Anne's County prepares for the future of parks and recreation within the County.

Once the survey was crafted, it was advertised and/or administered via QACTV, social media, email, public press release, email blasts, public news advertisement, handouts and signage so as to attract responses from as many citizens as possible. Computer assistance was offered in County Senior Centers and Public Libraries, to those citizens wishing to take the Survey. The actual Survey questions may be found in ***Appendix A – Parks Needs Assessment Survey Questions- August, 2017.***

BEACON collected input from the Parks Needs Assessment Survey via public participation in the survey and reviewed and analyzed the results. The Survey was conducted from September 6th thru Nov 6th, 2016 and solicited more than 800 responses countywide.

Survey Feedback

BEACON processed information from the Parks Needs Assessment Survey and summarized important findings for public information and use by the Department and the PRAB. Results of the Parks Needs Survey may be found in ***Appendix B - Parks Needs Assessment Survey Results – January 2017*** as prepared by BEACON of Salisbury.

The Survey was conducted for two full months, with results greatly surpassing that of any prior survey conducted by the County government. The information gathered from the Survey provides the Department with insight needed to forecast future needs and formulate goals and recommendations moving forward. Staff recommendations are in agreement with Survey results for the most part, with the main issue expressed being that of distribution of facilities to other population centers of the County, particularly on issues regarding bicycle and pedestrian connectivity. Staff took part in the Needs Analysis Survey and made their recommendations know in this manner as well as through special meeting with the Focus Group and to the Parks & Recreation Advisory Board during regular meetings.

In open-ended summary remarks, the Survey provided information on those Facility and Program needs that users felt *were being* met and those where they felt their needs *were not being* met.

Facilities: the open ended response summary from the Survey concludes that FACILITIES MOST FREQUENTLY ***MEETING NEEDS*** are:

- Walking Trails
- Historic Sites
- Bike Trails
- Playgrounds
- Boating Ramps

Facilities*:** the open ended response summary from the Survey concludes that FACILITIES MOST FREQUENTLY ***NOT MEETING NEEDS are:

- Swimming/Aquatic Center
- Community Center
- Swimming Beaches
- Bathroom Facilities /plumbed/year round
- Outdoor Fitness Equipment

Additional information collected identifies needs for the following: greater bike/pedestrian trail connectivity throughout the County, specialty parks such as skate and bike parks, volleyball courts, dog parks and a public golf course in the northern region of the County, as well as overall concern for facility maintenance.

Programs: the open ended response summary from the Survey concludes that the FIVE MOST FREQUENT PROGRAMMING ***NEEDS BEING MET*** are:

- Individual Sports
- Organized Team Sports – youth
- Health/Fitness
- Special Events/Seasonal Festivals
- Youth Activities (ages 6-11)

Programs: the open ended response summary from the Survey concludes that the FIVE MOST FREQUENT PROGRAMMING ***NEEDS NOT BEING MET*** are:

- Swimming/Aquatic Centers
- Outdoor concerts/Movies
- Special events/Seasonal festivals
- Water Activities (paddle-boarding, surfing, kayaking, sailing, etc.)
- Performing/Visual Arts

Additional information collected identifies needs for the following: the need for water safety training and swim lessons, opportunities for the performing and visual arts and craft programs from youth to adult (pottery, needlework, etc.), outdoor family-oriented community events and festivals, need for additional sports fields, increase in toddler and young child programming and youth events, more public water access points as well as the need for skate parks. For more insight on identification of park needs via the survey conducted, see ***Appendix A – Parks Needs Assessment Survey Questions***. Refer to ***Appendix B - Parks Needs Assessment Survey Results – Jan 2017*** for a more in-depth summary of the Parks Needs Assessment results.

Data on Usage and Participation Rates

Upon a major departmental reorganization in 2011, the Recreation Division was removed from Parks and placed under the Department of Community Services. Data on usage, demand and participation rates of park facilities and programming have been often difficult to track or report in recent years due to this separation. The impact of the reduction in work force was felt by both the Park and Recreation Divisions, as they worked to address everyday operational

tasks. Here the Recreation Division remains to this date, operating a limited listing of recreational programs compared to those offered in the past. However, development of private recreational venues such as local sod farm use for athletic field play and tournaments, private farms for equestrian activities, private indoor space for sports use, camps and adult recreation, as well as a local 'Y of the Chesapeake' assist in addressing recreation facility and programming demands.

The Recreation Division, as it exists currently, still offers many programs, cultural, sight-seeing trips and events, as well as some recreational sports leagues. Demand for more events, trips, county sponsored sports leagues and programming in the parks is evident from the Survey results. Information on recreational programming may be shown on the spreadsheet, ***Queen Anne's County Recreational Programs Offered FY-2015 - FY 2017*** and in **Figure SII-5**, ***Recreation Programs and Trip Participation, 2012 – 2016.***

The Parks Department oversees the reservation and maintenance of athletic fields for the uses of privately sponsored sporting leagues such as baseball/softball, football, lacrosse, basketball and field hockey. Vying for field space is a competitive process with much time and support given to area leagues and coaches to reserve fields for practices and games. Information on field usage and scheduling by way of permit through the Department of Parks may be found on **Figure SII-6*, Queen Anne's County Field Usage – Number of Permits Issued 2012- 2016.***

Figure SII - 5

Recreation Programs and Trips Participation 2012 – 2016

	2012	2013	2014	2015	2016
Programs (programs provided)	510	515	520	535	541
Total Program Participants	12,750	12,825	12,901	13,605	13,850
Participants per Program	25	25	24	26	26
Trips (trips provided)	5	6	5	7	8
Total Trip Participants	171	170	175	265	350
Participants per Trip	34	33	35	38	39
Overall Total Programs & Trips	**515**	**521**	**525**	**542**	**550**
Overall Total Participants	**12,921**	**12,995**	**13,076**	**13,870**	**14,200**

* 2012 – 2016 increase in number of programs due to adding specialty camps, pre-school sports and Flag football.

Figure SII-6

Queen Anne's County Field Usage
Number of Permits Issued 2012- 2016

	Football*	Soccer	Lacrosse	Youth Baseball
2012	17	358	63	501
2013	19	362	59	498
2014	8	369	64	502
2015	9	374	98	531
2016	19	372	105	548

* Football field permit counts down during 2014 – 2015 due to teams forming/playing in Anne Arundel County Leagues.

Music and Dancing @Concert in the Park @ Matapeake Clubhouse & Beach

Queen Anne's County Recreational Programs Offered - FY 2015 – FY 2017

SPORTS	CAMPS	TRIPS	SCHOOL AGE	EVENTS	ADULTS
Youth Basketball	Traditional Camps	Shopping New York	Bowling	Sunset Beach	Men's Lacrosse
Flag Football	Kid4Art	Cherry Blossom	Swimming	Movie Night	Men's Basketball
Indoor Soccer	Wee-Chef	Atlantic City	Girls' Softball Clinic	Parents Nite Out	Co-Rec Volleyball
Kiddie Basketball	MADD Scientist	Charlestown WV	Swimming		Indoor Soccer
Kiddie Tee-Ball	Nature Camp	Philadelphia Flower Show	Holiday Creation's		
Challenger Soccer	Kool Cupcake	Baltimore Hippodrome - WICKED			
Field Hockey	Quilting Camp	Tyson's Corner Shopping	QAC BB Skills		
Tennis Lessons	Pamper Princess Camp	STATUE OF LIBERTY, LIBERTY PARK, NJ	Fall Ball		
Outdoor Kiddie Soccer	Pirate Camp	SMITHSONIAN INSTITUTE, WASHINGTON, D.C.	BRICKs 4KIdz		
Indoor Kiddie Soccer	Theater Camp	MARYLAND STATE FAIR, TIMONIUM, MD	Open Gym Youth Disabilities		
	Sports Jam	CATOCTIN COLORFEST CRAFT SHOW, THURMONT, MD	Up For the Challenge		
	Flag Football Camp	SUNFEAST, OCEAN CITY, MD			
	Summers Days	CHERRY BLOSSOM CRUISE AND BRUNCH, WASHINGTON, DC			
	(Beginners) VOLLEYBALL CAMP,	HERSHEY PARK, PA			
	(Advance) VOLLEYBALL CAMP,	KINGS DOMINION, VA			
	Cake Boss Camp	COLONIAL WILLIAMSBURG, VA			
	Kiddie Sports Camp	A DAY IN WASHINGTON, D.C			
	Shooter/Scorers BB Camp	RADIO CITY CHRISTMAS SPECTACULAR			
	Eastern Shore BB Academy	Junior Engineering Camp			
		Collision Camp			
		Bring It On Cheer Camp			
		County Hero Camp			
		Ballerina Camp			
		Tinker Bell's Fairies Camp			
		Peter Pan Camp			
		Bowling Camp			

Level of Service

Level of Service is typically defined in parks and recreation plans as the capacity of the various components and facilities within the parks system to meet the needs of the public. This is often expressed in terms of the size or quantity of a given facility per population. In September of 2016, the Queen Anne's County Department of Parks, led by the BEACON group embarked on a community needs assessment by way of a public survey. This project included a deliverable of identifying and making recommendations for future needs into the next 30 years

Maps titled ***Queen Anne's County Parks and Recreational Facilities, Queen Anne's County/Town Planning Areas, Queen Anne's County Priority Funding Areas with Populations*** help to depict the designated planning or growth areas within Queen Anne's County and demonstrate the proximity of public infrastructure, resources and community amenities.

Queen Anne's County Department of Parks divides parkland into three regional districts: North, Central and South District. Each district is home to a maintenance and equipment yard and for the most part, designated staff to manage and maintain parkland within that district.

It is the goal of the Department of Parks to focus on developing park facilities in the most concentrated population areas, while still serving the outlying areas with facilities. As Queen Anne's County is a large, mostly rural county, there are gaps in providing facilities in much Of the more rural areas to the north. At the time of the 2012 LPPRP update, Queen Anne's County provided more than 35 acres/1000 persons based on the Calculation of the State Default Recreational Goal and the 2010 Census population numbers. The population increase since that time has fallen behind that which was anticipated, however Queen Anne's County still remains a leader within the State of Maryland in providing an abundance of parks, recreation and open space for its citizens.

Historically in Maryland a County's land acquisition goal in the LPPRP was based on this single State Default metric of 30 ac of open space per 1,000 residents. This metric was used to determine whether a County had met the land acquisition goal, which enables them to use a greater percentage of their annual funding on recreational development projects. For many years Queen Anne's County has successfully demonstrated the use of annual funding for both acquisition and in more recent years funding of recreational development projects.

Based on input from local jurisdictions, DNR and MDP determined that a more analytical approach that would consider multiple factors such as user demand, population density, and land and facility distribution, was a better method in determining level of service moving forward. Mapping and analyzing a County's inventory of parks and recreation lands and facilities in relation to population density and known needs of users would make for a more accurate determination of level of service being provided and help to formulate better plans to address the gaps in service.

Bicyclists Enjoying the Cross Island Trail

Queen Anne's County recognizes that while it may appear by way of user survey to fall short of needs/demands for park amenities such as more athletic fields, tennis courts, swim centers, bathrooms, trails, etc. in some areas, the County overall provides a high level of service for most park and recreational needs and far exceeds the amount of open space, natural resource lands, and parkland based on the formerly used Calculation of State Default Recreation Goal of 30ac/1000 persons.

Based on information provided by the National Parks & Recreation Association (NRPA), the typical park and recreation agency nationwide, offers 9.6 acres of parkland per 1000 residents.

The State of Maryland Default Recreation Goal is a ratio of 30 acres of recreational land/1000 persons. Therefore the State recommended goal for Queen Anne's County is 1,434 acres of recreational parkland county-wide. The use of the State Default Recreational Goal has come under scrutiny over the years, making the new tools of a Proximity and Equity Analysis perhaps a better indicator of true needs within the County and its environs. Within the 2012 LPPRP, Queen Anne's County identified the State Default Recreational Goal ratio within the County as providing more than 46 acres/1000 persons residing within the County. While there has been no parkland acquisition since 2012, continuation of preserving environmentally sensitive lands, agricultural lands and deed restricted open space continue to be at the forefront of County preservation efforts, as Queen Anne's County continues to be a leader in the State for land preservation, parks, recreation and open space.

Proximity Analysis

The Proximity Analysis is a valuable new tool used in determining where parks and recreational facilities are most needed and where gaps may lie in their location in relation to population centers.

Based on Maryland Department of Natural Resources analysis, in order to conduct the Proximity Analysis a local jurisdiction must: identify where public parks and recreation sites and/or amenities are located within the County in relation to the population; identify areas where the population has greater or lesser access to public parks and recreational sites; define a catchment area (a set distance from a designated point); and examine the extent of parks and recreation facilities within the catchment area. Areas found to be outside of the catchment areas for a facility should be considered a gap – the area where the population may not easily access a facility or facilities identified.

The following criteria are used in defining proximity analysis catchment areas:

- *Large-scale/rural area/countywide area analysis catchment: 5 miles*
  This distance is suggested because it approximates a 15 minute drive and reflects how far a casual park or recreational facility user may travel by car, public transportation or via bicycle or foot in order to access a particular park or recreational amenity.

- *Smaller-scale/urban/highly developed area catchment: ½ mile*
  Within urban or more densely developed areas, it is anticipated that a higher number of park or recreational facility users live and/or work within fairly close proximity to public parks and recreation facilities and likely will not rely on an automobile to travel to and from these places.

For the most part, the major community parks of Queen Anne's County are located in or adjacent to the County's population centers, which align for the most part with designated county planning areas. This can be seen by comparing the ***Parks and Recreational Facilities Map*** with that of the County Planning Areas and the ***Queen Anne's County Parks & Recreation System Proximity Analysis Maps*** and the ***Queen Anne's County Parks & Recreation – Equity Analysis Maps.*** With limited public infrastructure of water and sewer outside of the most populated area of Kent Island, it is difficult to provide the desired level of facilities without significant funding resources needed to develop and maintain them. Much like sprawl development, the further into the rural lands that park facilities are desired, the more expensive they are, or would be to develop and maintain. Many of the parks in Queen Anne's County that lie outside of the growth areas therefore, are limited in having on- site amenities such as plumbed, year- round restroom facilities, multiple sports fields that may need irrigation for proper care, concession facilities, etc. Upon review of new development proposals in these

less populated areas, developers are encouraged to provide neighborhood recreational opportunities such as trails, playgrounds and picnic pavilions within the proposed development community and if possible make connections to County owned parkland or open space.

In the most heavily concentrated planning area of Stevensville/Chester located on the central area of Kent Island, the Kent Narrows, Grasonville and Queenstown, the proximity to park facilities and various types of parks and public landings is close. Residents of this area and visitors, do not have to travel far to access an array of passive/active recreation areas and facilities. ***The Queen Anne's County Parks & Recreation System - Proximity Analysis Map*** provided, indicates that much of the county's population centers lie within the 0.5 – 5.0 miles to parklands and/or public landings and other recreational facilities such as state or federally owned lands.

Municipalities within the County, those of Queenstown, Centreville, Church Hill, Sudlersville, Queen Anne, Barclay, Millington and Templeville have small populations leaving them mostly reliant on County Park and Recreation facilities although some such as Queenstown, Sudlerville and Queen Anne have town parks. A few of these incorporated towns have availed themselves to funding through *Maryland's Community Parks & Playgrounds Program* to develop recreational facilities within their town limits.

It is undeniable that Parks located in close proximity to Route 50 particularly, and also the Route 213 corridor, are the most impacted by out-of- county users including private non-profit organizations, leagues and civic groups. For-profit leagues and tournaments are especially attracted to the convenient proximity along the Route 50/301 corridor that parks within Queen Anne's County may afford their users.

Heading north and east, the Kent Narrows, Grasonville, and the Town of Queenstown are still some of the most populated areas in the County. The location of park facilities are, while not within desirable walking distance, within fair proximity to communities and area neighborhoods and/or lie within a short drive time. U.S. Route 50/301 bisects much of the County and without any type of pedestrian and bicycle overpass system – makes the proximity of parkland and facilities difficult to reach without the use of motorized vehicular transportation.

Once past Kent Island, Grasonville, and the Town of Queenstown, still heading north and east, the Town of Centreville is the next largest planning area, followed by the Towns of Church Hill and Sudlersville. While the populations do not come close to the concentrated density of Kent Island, the area is served by larger Community Parks and in some instances, Town parks. Facilities here experience heavy use at times, particularly due to use of athletic fields. As these areas continue to experience growth, the foresight to provide for Community Parks to serve the surrounding area is justified. The County's commitment to acquiring and developing Community parkland such as Whitemarsh Park in Centreville, demonstrates the planning of community infrastructure to serve not only the residents in the central County area, but the

population within the Town of Centreville as it continues to develop. Likewise, County officials have been pro-active for many years with the foresight to protect lands for parks, recreation and natural resource conservation in those areas that are designated for future development. Such acquisitions include but are not limited to: the Davidson Farm Property in Stevensville, the Greenberg Property in Stevensville (southern Kent Island), the Old Love Point Parks in Stevensville, Ferry Point Park in Chester, and the Kudner Farm Property in Grasonville.

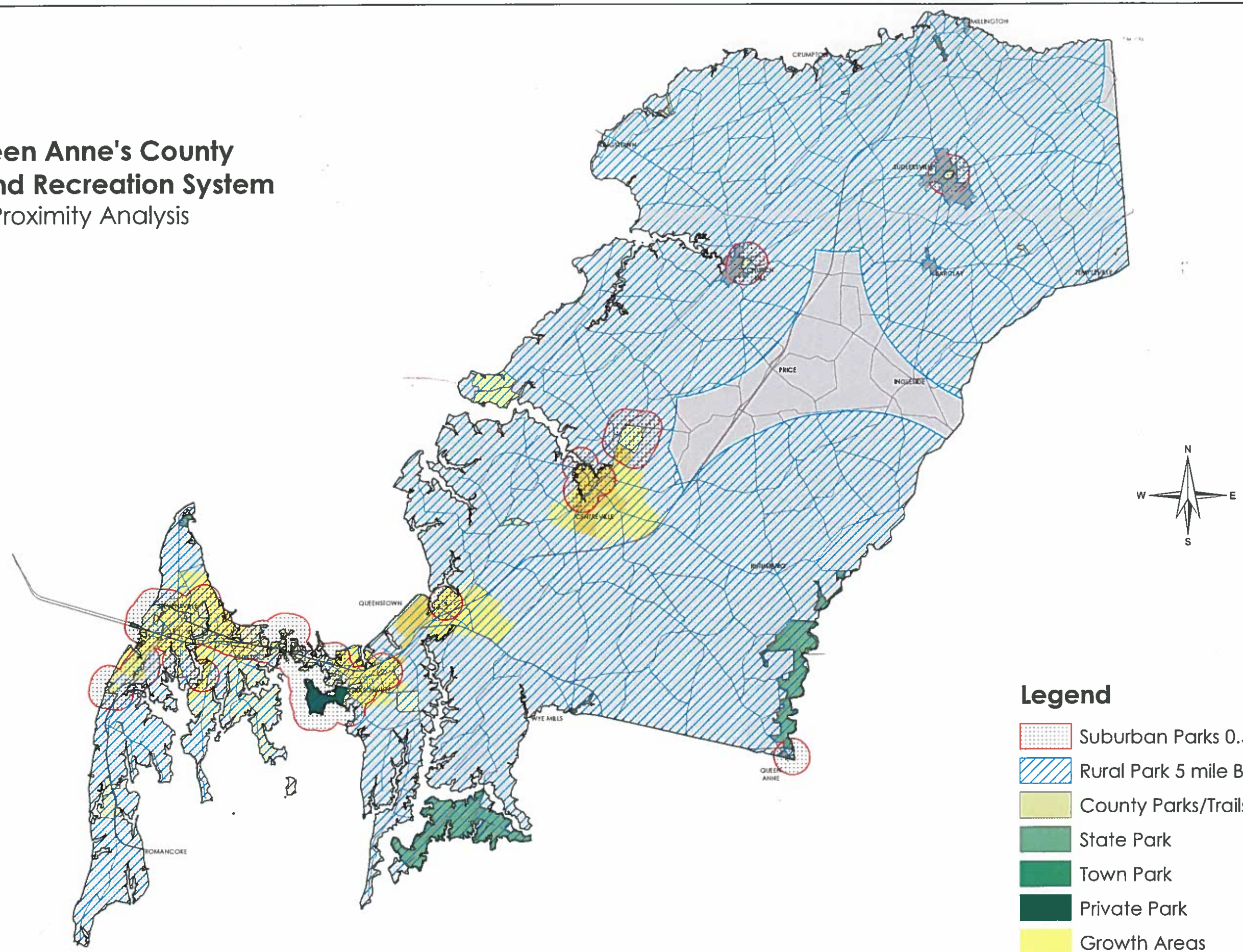
Based on proximity to park facilities, the areas surrounding and including the incorporated Towns of Barclay, Millington, Queen Anne, and Templeville are perhaps the most underserved communities in the County in the way of public parkland and recreational facilities. These planning areas are beginning to experience a greater need for community infrastructure and public facilities as they experience further growth. For the most part, these needs are currently addressed by the Municipalities themselves and not the County.

As the smaller population centers of the northern portion of the County see some level of growth this analysis might suggest the Department of Parks address the following: greater amount of public infrastructure in order to make park facilities in these outer regions of the County more desirable with restrooms, concessions, irrigation, lighting , sport fields, indoor, year round facilities, multi-cultural signage, and programming.

Goals for the southern, more populated portion of the County might address: availability of public infrastructure to provide restrooms, concessions, irrigation and lighting in a greater number of parks; provision of a greater variety of recreational opportunities - particularly those related to physiographic features of the area, i.e. sailing, swimming, etc.; providing a wider range of activities based on age groups and physical ability, and focus on keeping all park facilities safe, clean and accessible.

Evidence of the proximity of park and recreational facilities in the more developed areas, or planning areas of the County, is provided by examination of the following maps***: Queen Anne's County Park and Recreational Facilities*** and ***County/Town Planning Areas and Priority Funding Areas with Population Data and the Queen Anne's County Parks & Recreation System – Proximity Analysis Map,*** all serving to demonstrate the location of park facilities in relation to population centers.

Queen Anne's County
Parks and Recreation System
Proximity Analysis



0 2.5 5 Miles

Suburban parks were determined to be parks that intersect the county Growth Areas and/or Incorporated Town Limits
All other parks were determined to be rural parks.

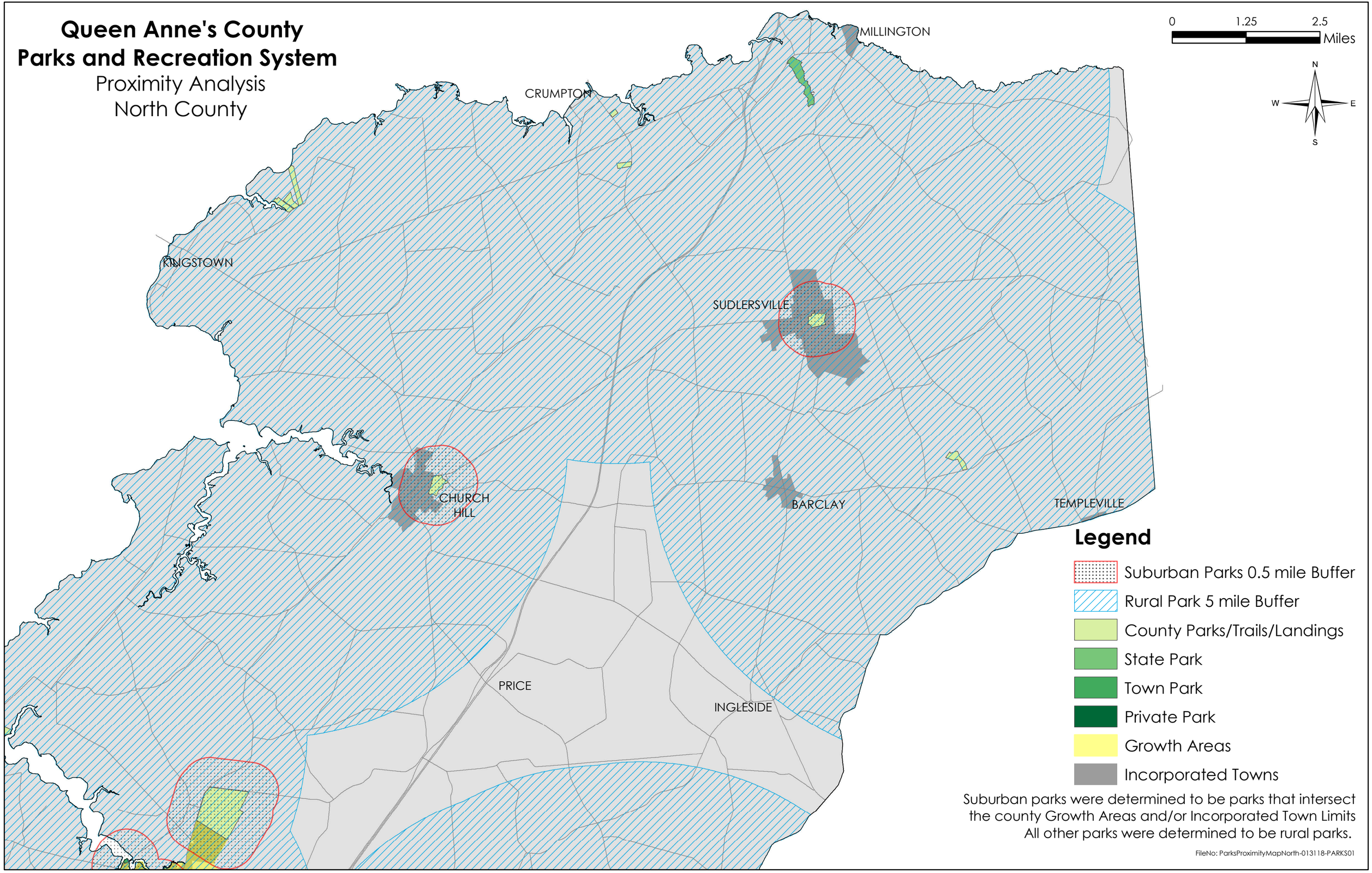
Legend

- Suburban Parks 0.5 mile Buffer
- Rural Park 5 mile Buffer
- County Parks/Trails/Landings
- State Park
- Town Park
- Private Park
- Growth Areas
- Incorporated Towns

FileNo: ParksProximityMap-011818-PARKS01

Queen Anne's County
Parks and Recreation System

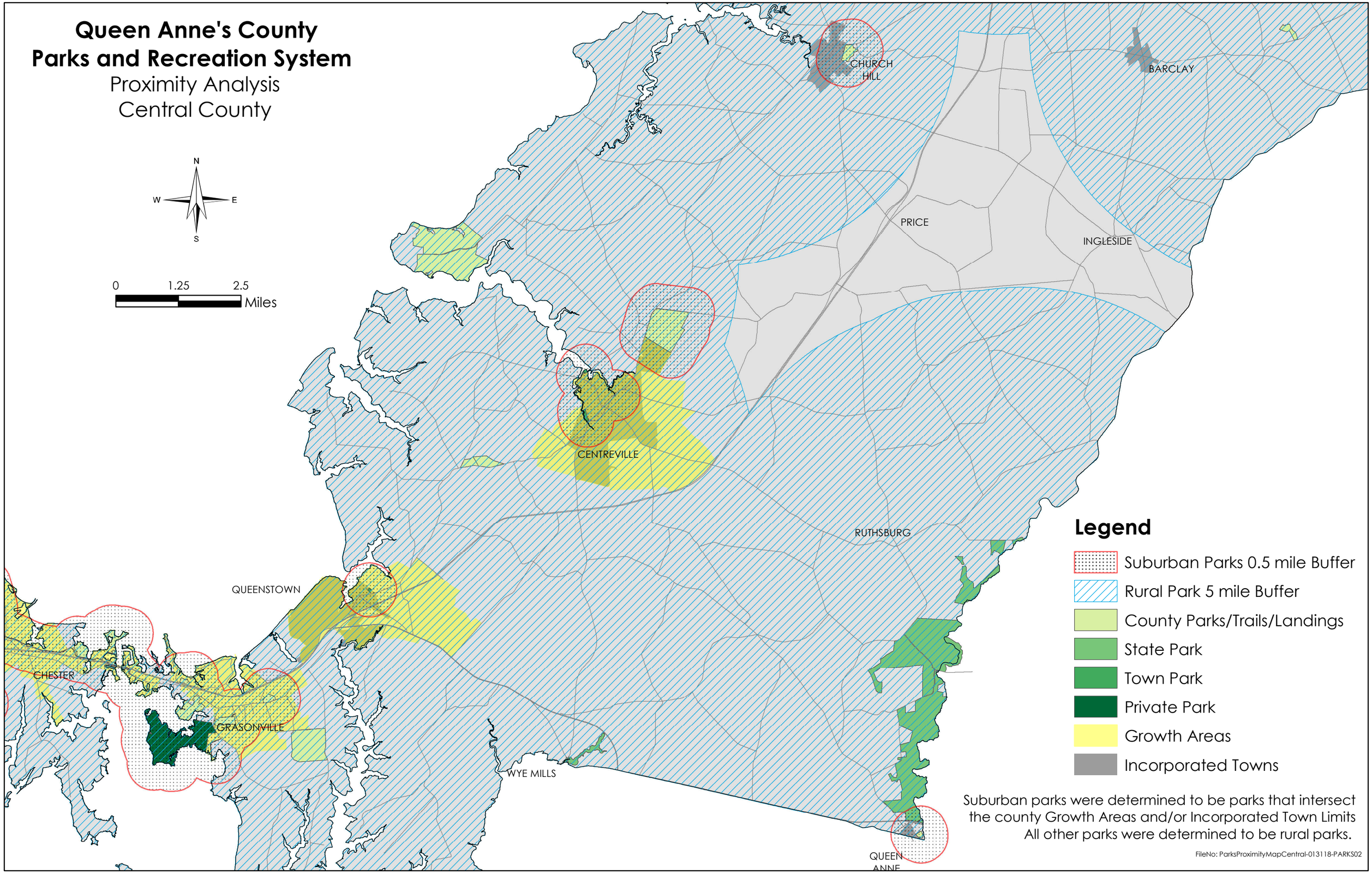
Proximity Analysis
North County



Suburban parks were determined to be parks that intersect the county Growth Areas and/or Incorporated Town Limits
All other parks were determined to be rural parks.

FileNo: ParksProximityMapNorth-013118-PARKS01

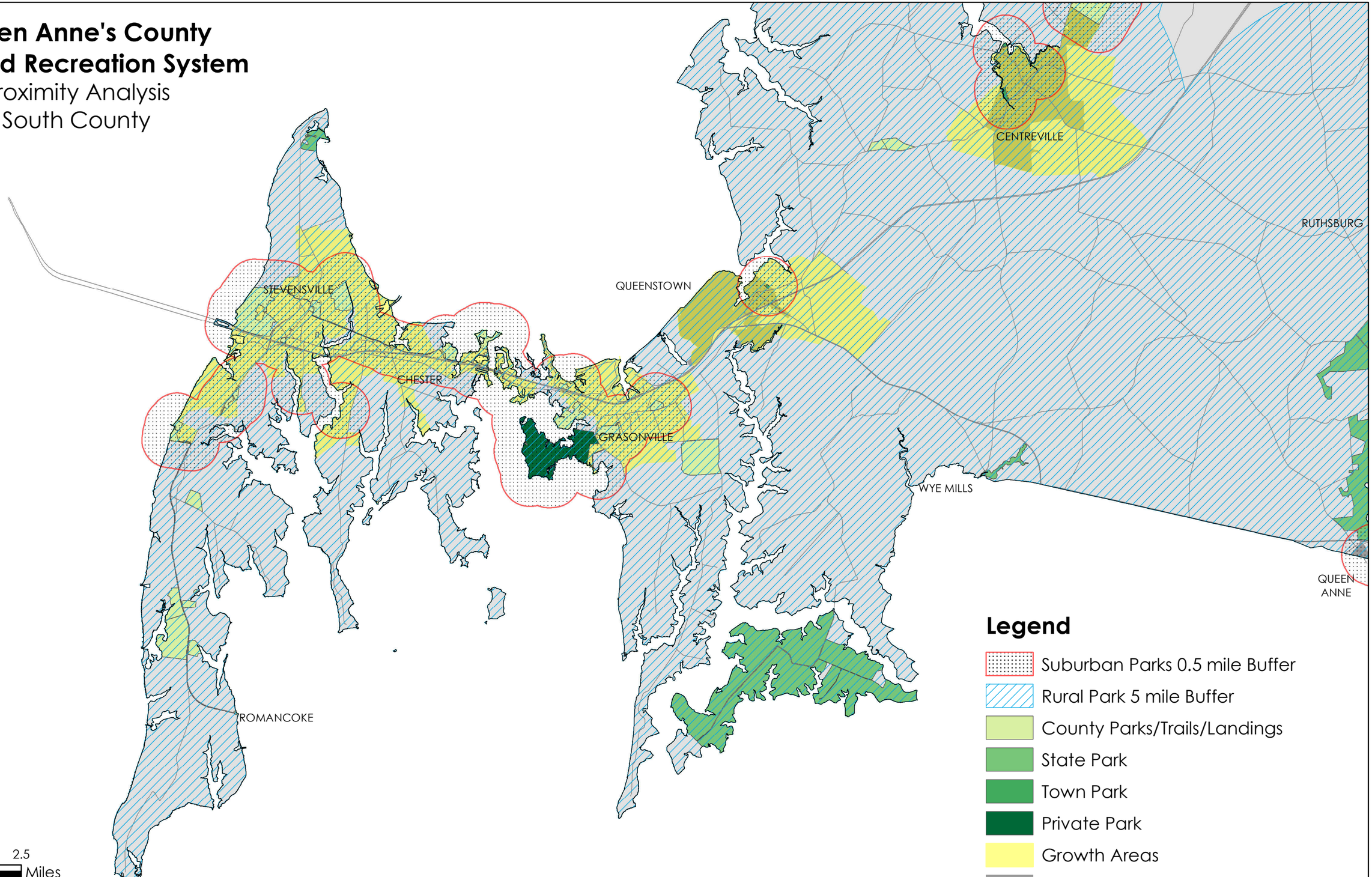
Queen Anne's County
Parks and Recreation System
Proximity Analysis
Central County



Suburban parks were determined to be parks that intersect the county Growth Areas and/or Incorporated Town Limits
All other parks were determined to be rural parks.

FileNo: ParksProximityMapCentral-013118-PARKS02

Queen Anne's County
Parks and Recreation System
Proximity Analysis
South County

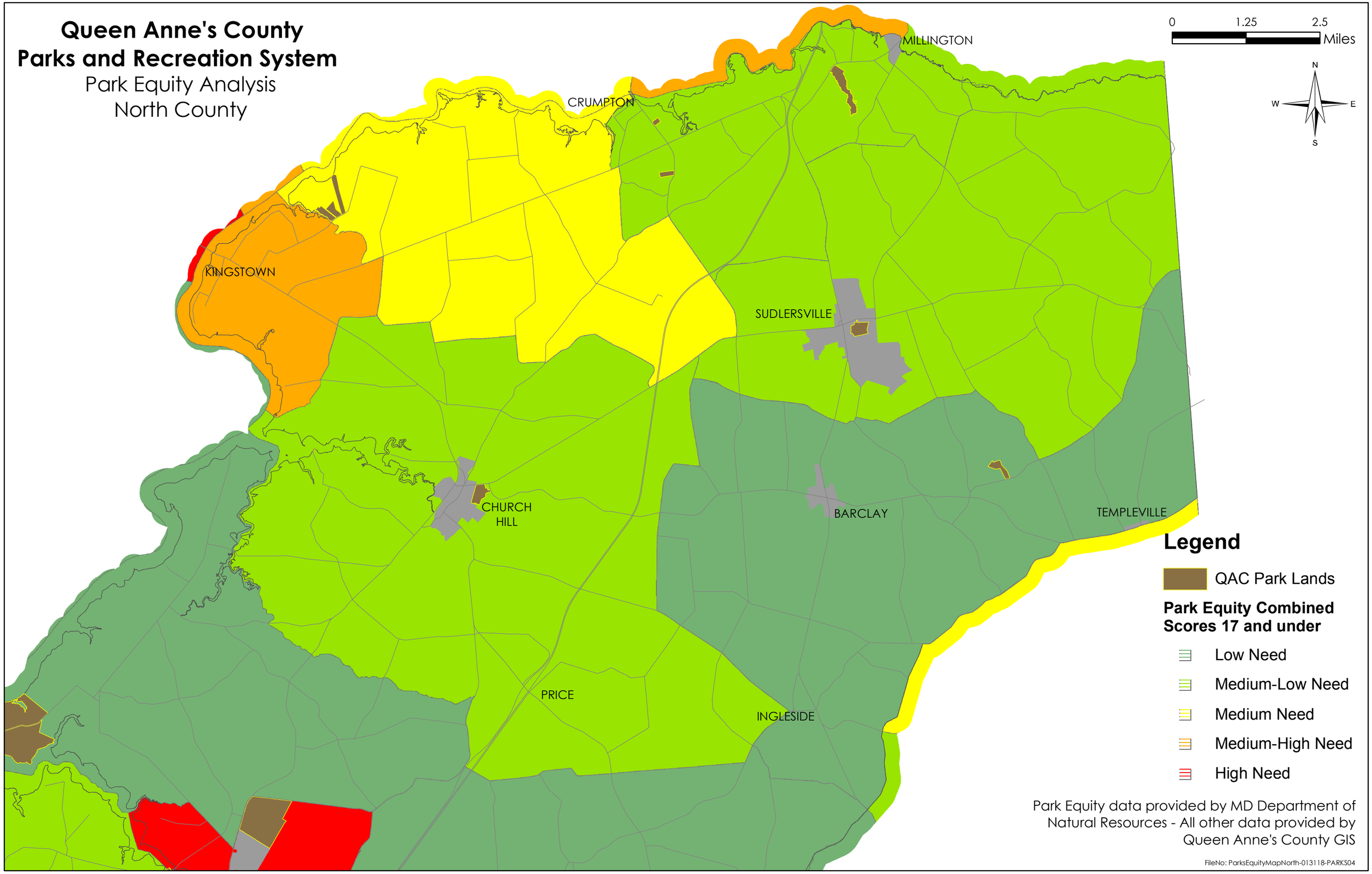


Suburban parks were determined to be parks that intersect the county Growth Areas and/or Incorporated Town Limits
All other parks were determined to be rural parks.

FileNo: ParksProximityMapSouth-013118-PARKS03

Queen Anne's County
Parks and Recreation System

Park Equity Analysis
North County



Park Equity data provided by MD Department of Natural Resources - All other data provided by Queen Anne's County GIS

FileNo: ParksEquityMapNorth-013118-PARKS04

Queen Anne's County
Parks and Recreation System

Park Equity Analysis
Central County

CHURCH HILL
BARCLAY
TEMPLEVILLE
PRICE
INGLESIDE
CENTREVILLE
RUTHSBURG
QUEENSTOWN
HESTER
GRASONVILLE
WYE MILLS
QUEEN ANNE

N
W
E
S

0 1.25 2.5 Miles

Legend

QAC Park Lands

Park Equity Combined Scores 17 and under

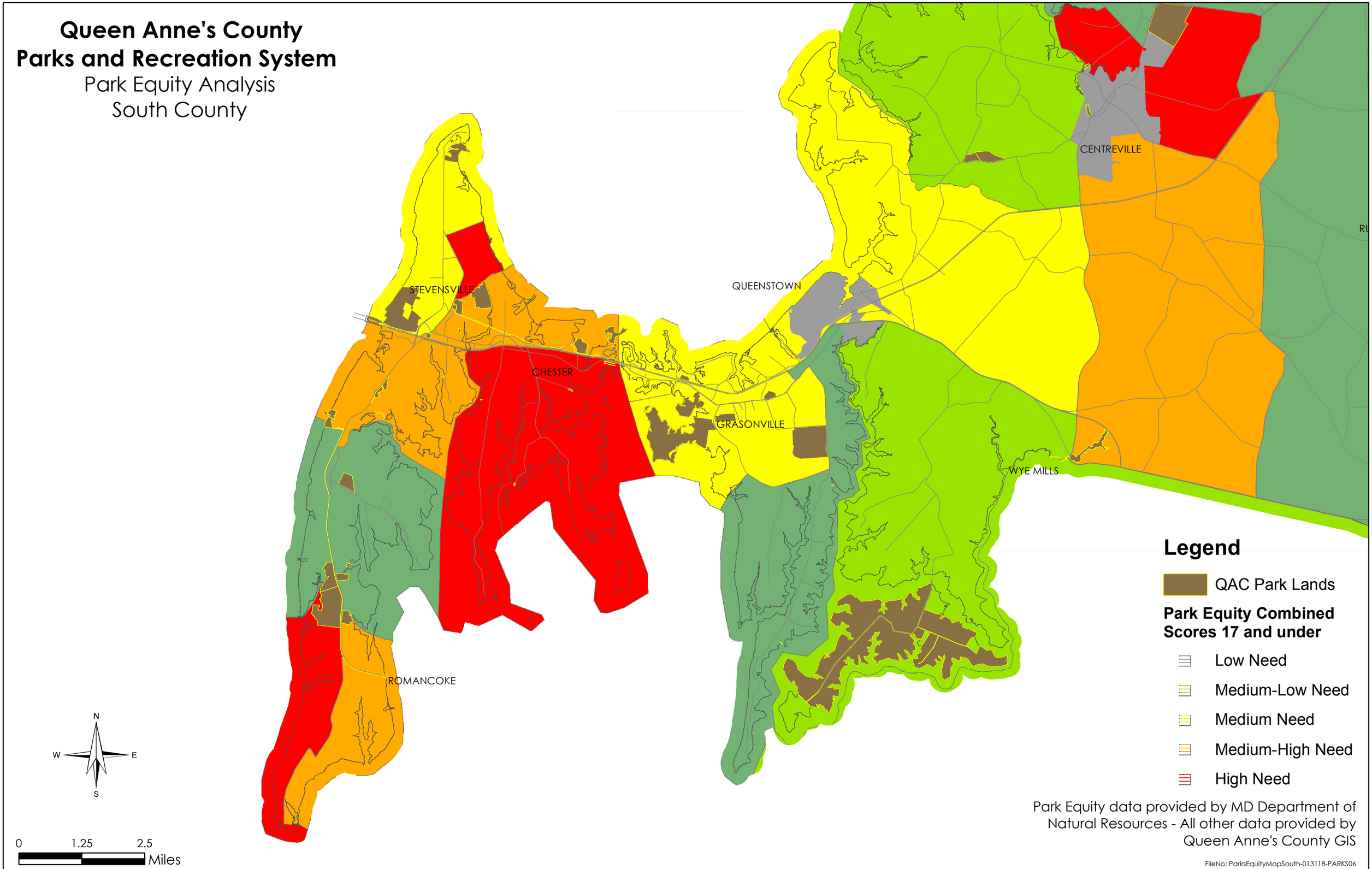
- Low Need
- Medium-Low Need
- Medium Need
- Medium-High Need
- High Need

Park Equity data provided by MD Department of Natural Resources - All other data provided by Queen Anne's County GIS

FileNo: ParksEquityMapCentral-013118-PARKS05

Queen Anne's County
Parks and Recreation System

Park Equity Analysis
South County



Park Equity data provided by MD Department of Natural Resources - All other data provided by Queen Anne's County GIS

FileNo: ParksEquityMapSouth-013118-PARKS06

Queen Anne's County
Comprehensive Plan Update

Maryland

Queen Anne's County Park and Recreational Facilities

Neighborhood Parks
- 1 Crumpton Park
- 2 Mowbray Park
- 3 Pinkney Park
- 4 Long Point Park
- 5 Ewing Pond Park
- 6 Stevensville Park

Community Parks
- 7 Round Top Park
- 8 Grasonville Park
- 9 Church Hill Park
- 10 Batts Neck Park
- 11 Old Love Point Park
- 12 Route 18 Park
- 13 Whitemarsh Park
- 14 Sudlersville Park

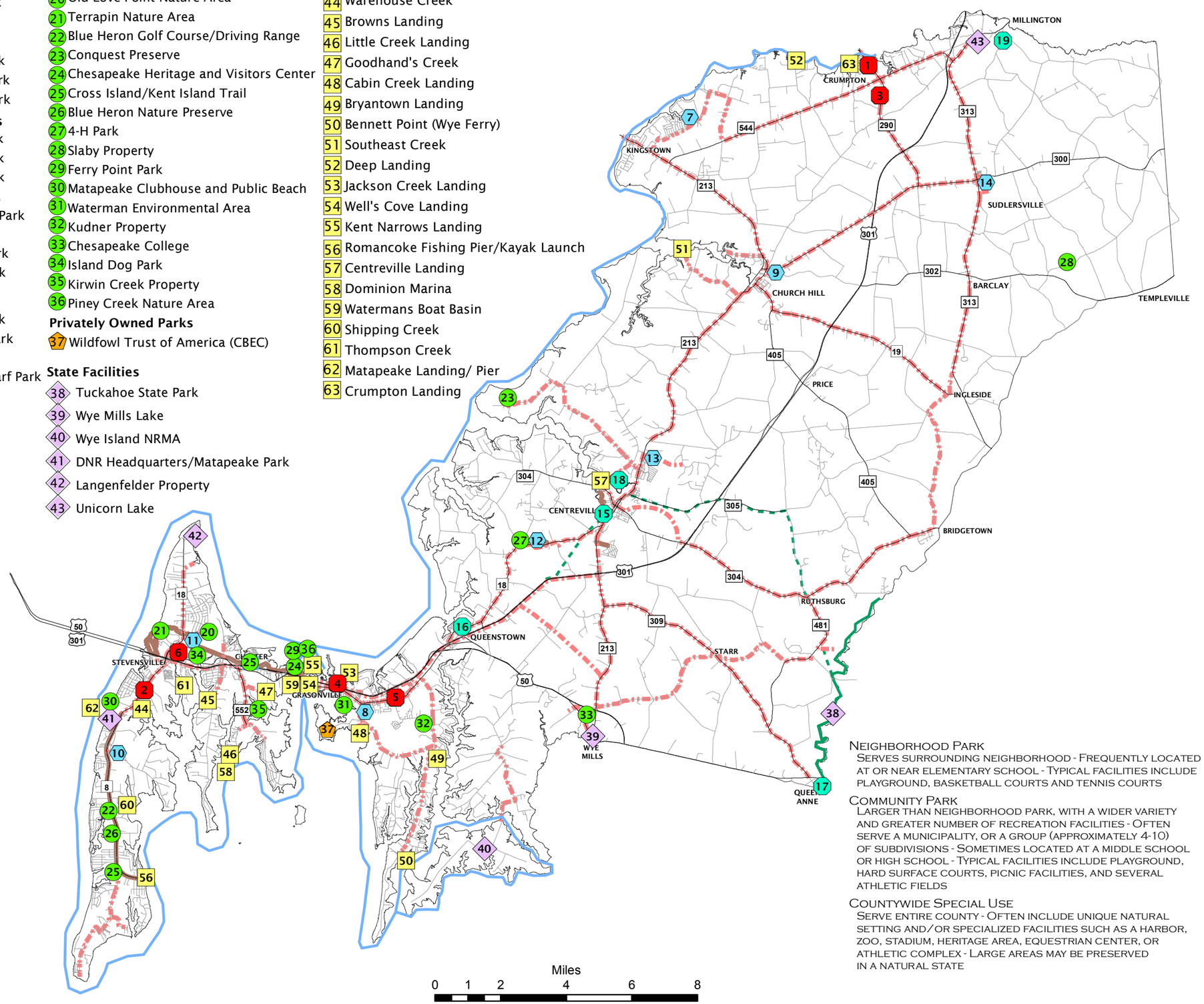
Town Parks
- 15 Mill Stream Park
- 16 Queenstown Park
- 17 Roosevelt Park
- 18 Centreville Wharf Park
- 19 Millington Park

Countywide Special Use
- 20 Old Love Point Nature Area
- 21 Terrapin Nature Area
- 22 Blue Heron Golf Course/Driving Range
- 23 Conquest Preserve
- 24 Chesapeake Heritage and Visitors Center
- 25 Cross Island/Kent Island Trail
- 26 Blue Heron Nature Preserve
- 27 4-H Park
- 28 Slaby Property
- 29 Ferry Point Park
- 30 Matapeake Clubhouse and Public Beach
- 31 Waterman Environmental Area
- 32 Kudner Property
- 33 Chesapeake College
- 34 Island Dog Park
- 35 Kirwin Creek Property
- 36 Piney Creek Nature Area

Privately Owned Parks
- 37 Wildfowl Trust of America (CBEC)

State Facilities
- 38 Tuckahoe State Park
- 39 Wye Mills Lake
- 40 Wye Island NRMA
- 41 DNR Headquarters/Matapeake Park
- 42 Langenfelder Property
- 43 Unicorn Lake

Public Landings
- 44 Warehouse Creek
- 45 Browns Landing
- 46 Little Creek Landing
- 47 Goodhand's Creek
- 48 Cabin Creek Landing
- 49 Bryantown Landing
- 50 Bennett Point (Wye Ferry)
- 51 Southeast Creek
- 52 Deep Landing
- 53 Jackson Creek Landing
- 54 Well's Cove Landing
- 55 Kent Narrows Landing
- 56 Romancoke Fishing Pier/Kayak Launch
- 57 Centreville Landing
- 58 Dominion Marina
- 59 Watermans Boat Basin
- 60 Shipping Creek
- 61 Thompson Creek
- 62 Matapeake Landing/ Pier
- 63 Crumpton Landing



Legend
- Community Parks
- Coutywide Special Use
- Neighborhood Parks
- Private Parks
- State Facilities
- Town Parks
- Public Landings
- WaterTrails
- Other Roadways
- Highways
- Proposed Trails
- Existing Trails
- Existing Greenway *
- Potential Greenway *
- * County Boundary

Greenway trail data was provided by the Maryland Department of Natural Resources. Greenway trails were added where there was no overlap with Queen Anne's County trails (Existing and Proposed Trails).

Neighborhood Park
Serves surrounding neighborhood - Frequently located at or near elementary school - Typical facilities include playground, basketball courts and tennis courts

Community Park
Larger than neighborhood park, with a wider variety and greater number of recreation facilities - Often serve a municipality, or a group (approximately 4-10) of subdivisions - Sometimes located at a middle school or high school - Typical facilities include playground, hard surface courts, picnic facilities, and several athletic fields

Countywide Special Use
Serve entire county - Often include unique natural setting and/or specialized facilities such as a harbor, zoo, stadium, heritage area, equestrian center, or athletic complex - Large areas may be preserved in a natural state

Source: Queen Anne's County Department of Land Use, Growth Management and Environment, Parks and Recreation and Maryland Department of Natural Resources

December 2016

MAP CF-2

Queen Anne's County
Comprehensive Plan Update

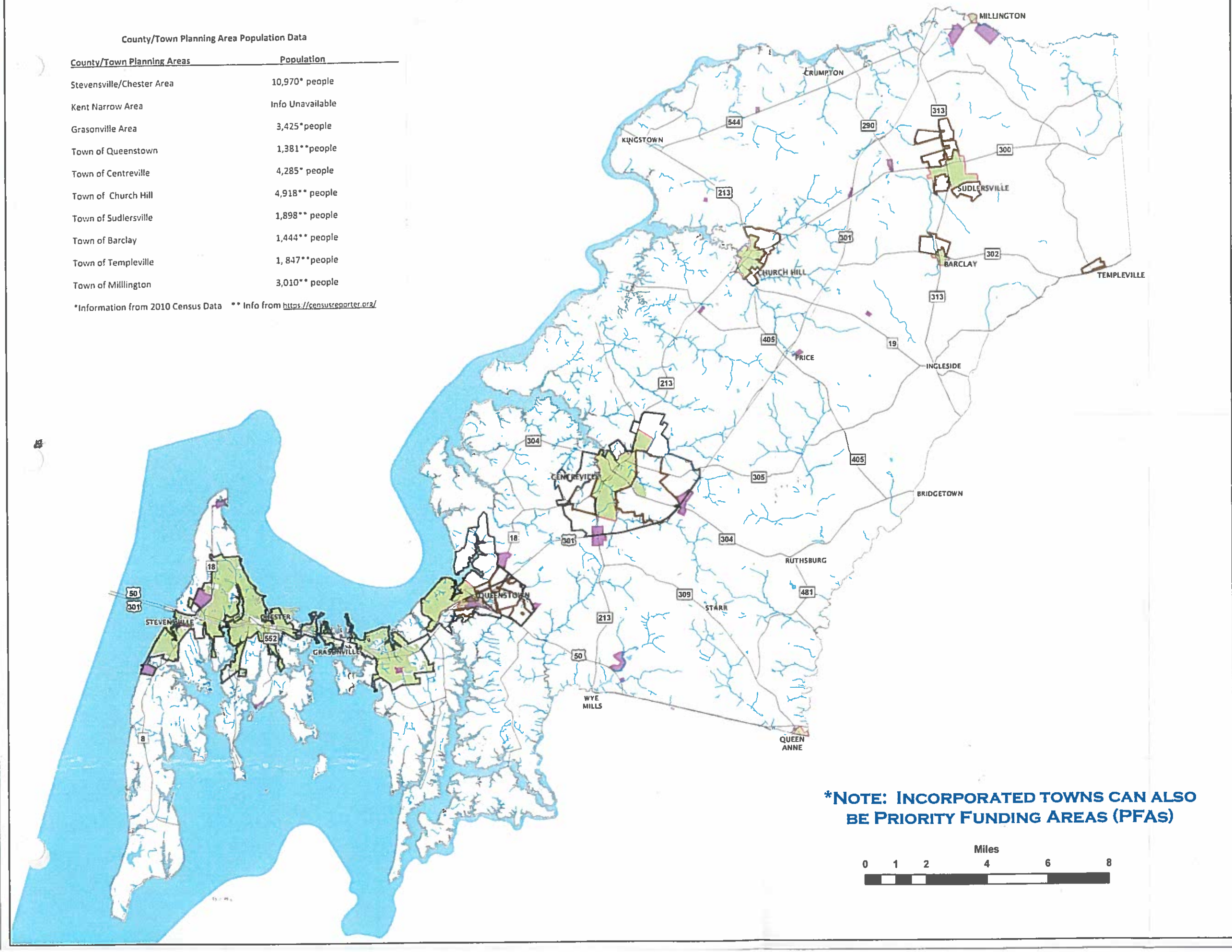
Maryland

County / Town Planning Areas and Priority Funding Areas
w/population data

County/Town Planning Area Population Data

County/Town Planning Areas	Population
Stevensville/Chester Area	10,970* people
Kent Narrow Area	Info Unavailable
Grasonville Area	3,425*people
Town of Queenstown	1,381**people
Town of Centreville	4,285* people
Town of Church Hill	4,918** people
Town of Sudlersville	1,898** people
Town of Barclay	1,444** people
Town of Templeville	1, 847**people
Town of Milllington	3,010** people

*Information from 2010 Census Data ** Info from https://censusreporter.org/



***Note: Incorporated towns can also be Priority Funding Areas (PFAs)**

Legend
- County Boundary
- Roadways
- Waterways
- County / Town Planning Areas
- Town Future Annexation Areas
- Incorporated Towns*
- Priority Funding Areas
- Suburban Industrial Priority Funding Areas
- Water

Note: Priority Funding Areas are existing communities and places where local governments want State investment to support future growth.

County / Town Planning Area:
A geographical area, defined by the Planning Commission, to be considered in the development of a community plan or comprehensive plan.

Priority Funding Areas:
Existing communities and place where local governments want State investment to support future growth. As per the 1997 Priority Funding Areas Act, beginning October 1, 1998, the State of Maryland directed funding for projects that support growth in Priority Funding Areas (PFAs). PFAs are areas identified by the County and designated by the State where the state, county and municipalities want to target their efforts to encourage and support economic development and new growth.

Suburban Industrial Priority Funding Area:
Areas designated as Industrial prior to January 1, 1999 that would qualify as a Priority Funding Area.

Source: Queen Anne's County Department of Land Use, Growth Management and Environment and Maryland Department of Planning.

March 2010

MAP LU-6

Park Equity Analysis

The Park Equity Analysis is another important new tool used to identify population centers that are lacking access to parks and recreational facilities. Counties are encouraged to use DNR's Park Equity Analysis to determine possible future recreational land acquisition and/or development of park facilities.

Examination of existing population centers in the County and their proximity to park facilities aides in identification of possible future recreational land acquisition and/or development of future park facilities. DNR's Park Equity Analysis interactive tool assists in identification of areas where underserved populations may not have easy access to parks within close proximity to their homes. In addition to the following maps: ***Queen Anne's County Parks and Recreational Facilities,*** and ***County/Town Planning Areas and Priority Funding Areas with Population Data***, the ***Queen Anne's County Parks & Recreation System – Proximity Analysis Maps and the Queen Anne's County Parks & Recreation System – Park Equity Maps*** were created using the DNR Parks Equity and Proximity Analysis Tools, to highlight areas of the County that may be underserved by park facilities. The maps titled ***Park Equity Maps (North, Central and South County Areas)*** depict areas underserved based on Low, Medium and High Need. Also noted are areas where existing parks and recreational facilities are located. Since Queen Anne's County has few incorporated towns, that don't necessarily overlay census tract areas or even zip code delineations, it is difficult to pinpoint age groups in relationship to high, medium and low needs.

Comparing Proximity & Equity Results to Identify Gaps in Existing Parklands

When comparing the Proximity Map and the Equity Map – it is easy to identify gaps in the parks provided for public use with the population centers of Queen Anne's County. Since the majority of the County's population is located between Kent Island and Queenstown, it is apparent that the highest needs for parkland based on population centers lies on southern and central Kent Island, down towards the Bennett Point peninsula.

The Kent Island area is home to several age restricted communities of 55+ yrs of age. The general area of these developments is shown in the medium – high need areas. As Queen Anne's County moves forward in assessing its needs based on the gaps identified through the Proximity and Equity tools, it aims to provide public park amenities attractive to all users and age groups. As County growth continues in the Centreville environs we see a high need in thearea where larger subdivisions of single family homes on large lots already exist, perhaps adjacent to forest and farmland and without connectivity to public parks or facilities. While there may be a demonstrated need for public park facilities, there appears to be less demand in these areas as opposed to the smaller lot subdivisions of Kent Island and Grasonville.

Capital Improvement Plan

Since the 2015 re-establishment of The Department of Parks as a stand-alone department, the Capital Improvement Plan has focused on meeting goals and objectives based mainly on the following:

- Making the park system accessible to all by providing ADA accessibility wherever possible, developing park elements aimed at all age groups and abilities and interests;

- Providing safe and clean park environs by inspecting and replacing aging equipment, implementing a Park Ranger program, providing multi-lingual and emergency universal graphic signage; and

- Enhancing the sustainability and overall appearance of the parks by implementing new or enhanced planting and wildlife habitat areas, and through protection of sensitive areas such wetlands, forest and Critical Areas.

The following spreadsheet titled ***Queen Anne's County Department of Parks – Capital Improvement Program FY 2016 – 2030*** outlines the Department of Parks Capital Improvement Projects with forecasted funding timeframes of mid- range and estimated long- range projects projected in fiscal years ranging from FY 2016 to FY 2030 included with brief comments regarding the Park location, and planning objectives being addressed. The spreadsheet titled ***Proposed Park Improvements FY19- FY24*** identifies improvement projects within specific County Parks.

County Commissioners @ Budget Work Session

Project	Location	service area
ADA Compliance at Parks	Various Parks	countywide
Athletic Fields	Various Parks	countywide
Athletic Fields	Various Parks	countywide
Park Land Acquisition	Various	countywide
Trail Land Acquisition	Various	countywide
Parking Lot	Various	countywide
Parking Lot	Various	countywide
Trail	Various	countywide
Park Surveys	Various	countywide
Rt 50 Pedestrian Overpass	South	South
Restrooms	Various	countywide
Campground	Crumpton	North
Dredging	Various	waterways
Public Landings Bulkheads	Various	countywide
Public Landings Parking Lots	Various	countywide
Public Landings Land Acquisition	Various	countywide
Soft Launch Water Access	Various	countywide
Fuel Pump relocation/replacement	Airport	Stevensville
Building Maintenance/repairs	Airport	Stevensville
AOA Fence	Airport perimeter	Stevensville
Obstruction Removal	Airport perimeter	Stevensville
Terminal Apron Rehab	Airport	Stevensville
Runway Rehab	Airport	Stevensville

Capital Project Improvements

Description of Land Preservation and Recreation Recommendation	Estimated Total Cost	Acres to be Acquired
Bring parks into ADA Compliance	3,600,000	NA
Lighting	4,485,000	NA
irrigation	300,000	NA
Undesignated Land	1,160,000	100
Undesignated Land	580,000	20
Paving	980,000	NA
Lighting	375,000	NA
Paving	1,280,000	NA
Surveys	135,000	NA
construct-connect SI & CC Trail	6,250,000	NA
construct	1,450,000	NA
Overnight Camping Area	755,000	NA
construct	1,800,000	NA
construct	975,000	NA
paving	284,000	NA
Undesignated Land	160,000	unknown, est. 10
construct	100,000	NA
construct	100,000	NA
construction/removal	70,000	NA
construct	495,000	NA
construction/removal	685,000	NA
construct	3,325,000	NA
construct	8,150,000	NA

Estimated Short Range (2018-2023) Cost	Estimated Mid-Range (2024-2029) Cost	Estimated Long-Range (2029-2034) Cost
1,200,000	1,200,000	1,200,000
1,285,000	1,500,000	1,700,000
50,000	100,000	150,000
160,000	500,000	500,000
180,000	200,000	200,000
280,000	300,000	400,000
150,000	100,000	125,000
280,000	500,000	500,000
45,000	45,000	45,000
6,250,000		
750,000	350,000	350,000
455,000	150,000	150,000
800,000	500,000	500,000
375,000	300,000	300,000
144,000	70,000	70,000
60,000	50,000	50,000
100,000	0	0
0	100,000	0
0	20,000	50,000
495,000	0	0
685,000	0	0
3,325,000	0	0
8,150,000	0	0

PROPOSED PARK IMPROVMENTS FY19-FY24

		FY19	FY20	FY21	FY22	FY23	FY24
County Park Sites							
Preventive Park Maintenance							
Park Survey							
Batts Neck Park							
	Field Irrigation (3)	X					
	Field Light Control Box	X					
	Pave Road & Parking	X					
	Upgrade Comfort Station		X				
	Construct Pavilion with adjacent Grills			X			
	Install Bleachers		X				
	Plant Shade Trees	X					
	ADA access						X
Chesapeake Heritage and Visitor Center							
	Bulkhead Replacement	X					
	Elevate grounds	X					
	Landscaping	X					
Church Hill Park							
	Complete Parking Lot Paving	X					
	Resurface Trail	X					
	Install Trail Exercise Stations			X			
	Upgrade Football Field	X					
	Develop Dog Park				X		
	Dredge Pond					X	
	ADA access	X					
Cross Island Trail							
	Sealcoat	X					
Crumpton Park							
	Pave Parking Lot			X			
	ADA access			X			
Grasonville Park							
	Construct Comfort Station			X			
	Pave Parking Lot				X		
	Expand Playground		X				
	Resurface Walking Trail			X			
	ADA access				X		
Kent Island Dog Park							
South Island Trail							
	Trail Repairs	X					

	Trail Paving	X					
Long Point Park							
	Pave Parking Lot	X					
	Pave Trail		X				
	Upgrade Playground			X			
	ADA access	X					
Matapeake Clubhouse & Public Beach							
	ADA access	X					
	Landscaping		X				
Mowbray Park							
	Pave Parking Lot	X					
	ADA access	X					
Old Love Point Park							
	Field Irrigation (4)				X		
	Field Light Control Box	X					
	Basketball Court Overlay		X				
	Replace Ball Field Lights & Poles (1)		X				
	Regrade and Pave Parking Lot	X					
	CIT Realignment	X					
	Renovate Concession Stand	X					
Pinkney Park							
	Field Irrigation						X
	New Potable Water System	X					
	Install Playground					X	
	Pave Parking Lot	X					
	Additional Parking	X					
	Plant Shade Trees	X					
	Reconstruct Basketball Court (2)		X				
	ADA access	X					
Roundtop Park							
	Field Irrigation				X		
	Construct 1 Athletic Field					X	
	Construct 1 Athletic Field					X	
	Construct 1 Athletic Field						X
	Construct 1 Athletic Field						X
	Comfort Station		X				
	Develop Perimeter Walking Trail w/ADA facility access					X	
	Resurface Tennis Court			X			
	Plant Shade Trees	X					
	Develop Sand Volleyball Court			X			
	Pave Parking Lot	X					
	ADA access	X					
Rt 18 Park							

Section III

Natural Resource Land Conservation

"For in the end, we will conserve only what we love. We will love only what we understand. We will understand only what we are taught". – Baba Dioum

Executive Summary

Natural resource lands contain the forests, wetlands, floodplains, stream buffers and other sensitive natural features that help define the rural character of Queen Anne's County. Sensitive areas, water resources and mineral resources are key components of the County's natural environment as well as a part of the natural resource based economy. The County contains 495 miles of shoreline with wildlife and aquatic habitats. The considerable acreage preserved as County and State parkland, contain natural areas or open space, agricultural lands, woodlands, wetland and a variety of water resources. The land use ethic to preserve natural resources applies sustainable smart growth management strategies which contribute to the success of maintaining the County as a quintessential rural community as noted in the County's Overall Community Vision Statement.

The Vision for protection of natural resources noted in the County 2010 Comprehensive Plan is:

Figure SIII - 1

County Vision for Natural Resource Conservation

Queen Anne's County will remain a rural, agricultural, and maritime county because it restores, enhances, protects, and conserves its valuable land, air and water resources through such measures as:

* *Conservation and protection of our agricultural lands, open spaces, woodland, wetlands, wildlife and their habitat;*
* *Conservation and protection of our water resources: bays, rivers, creeks, lakes, groundwater, and shorelines, such as: adherence to environmental regulations and low-impact storm water practices that seek to restore the Chesapeake Bay;*
* *Preservation of good air quality and viewscapes, including the night sky;*
* *Support for our agricultural, maritime, and tourism industries; and*
* *Environmental education programs aimed at promoting energy efficiency, comprehensive recycling practices for residences, businesses and public buildings, clean air and water policies, resource conservation and sustainable land use practices.*

The following guiding principles provide the framework for protection, preservation and conservation of sensitive areas and water resources in Queen Anne's County. These guiding principles inform future development for the purpose of sustaining current and future populations, the environment and economic vitality. These guiding principles include:

Figure SIII-2

Local Guiding Principles for Protection of Sensitive Areas & Water Resources

- *Universal stewardship of the land, water and air will result in sustainable communities and protection of the environment.*
- *Land and water resources are carefully managed to restore and maintain healthy natural systems.*
- *Concentrate and direct growth to Planning Areas and strategically selected new Planning Areas to protect resource areas.*
- *Planning Areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.*
- *Stewardship of the Chesapeake and Coastal Bays Critical Area land and water resources is the responsibility of government, businesses, and residents for the creation of sustainable communities by collaborating to balance efficient growth with resource protection.*
- *Apply sustainable smart growth principles and best management practices for the purpose of conserving resources, reducing resource consumption, and minimizing impacts on resources.*
- *Encourage opportunities with respect to the County's resource based economy and eco-friendly development.*

Public Benefits of Local Natural Resource Conservation

Land use changes due to human activity have a tremendous impact on ecological resources. Scattered patterns of current development, including low-density residential housing subdivisions consume excessive amounts of land and fragments the natural landscape.

Contiguous forest stands, wetlands, migration corridors and general habitat are lost through this fragmentation resulting in destroyed ecosystems. Habitat loss and fragmentation have perhaps the greatest impact on forest wildlife, and are the primary causes for species extinction. Many species of greatest need of conservation are "area-sensitive" requiring relatively large areas of mostly unbroken habitat to ensure their viability. Protecting areas of conservation need will provide a network of forests, uplands and wetlands for wildlife habitat and associated recreation activities.

Federal, State, Local and private land conservation measures are necessary in order to provide the necessary network for maintenance of species. When the habitat decreases, so does the diversity directly impacting the significance of the area for recreational and/or natural resource conservation purposes.

Queen Anne's County is fortunate to have an abundance of parkland acquired with natural resource conservation in mind. Areas of contiguous forest have been preserved and maintained to attract Forest Interior Dwelling Species (FIDS). Regulations protecting stream channels and creating vegetative filters have been prescribed, and Federal and State laws enacted to protect the most sensitive of areas directly bordering the Chesapeake Bay, otherwise known as the Chesapeake Bay Critical Area. From Terrapin Park on Kent Island to Ferry Point in the Kent Narrows, northward to Conquest Preserve and beyond, Queen Anne's County has protected thousands of acres in the name of natural resource conservation efforts.

While much has been done to protect natural resources through acquisition, the County remains focused on protecting forests, wetland and wildlife habitat, as demonstrated by its many partnerships with MDNR, Chesapeake Bay Trust, Chesapeake Bay Foundation, various Riverkeeper Associations, and the Chesapeake Wildlife Heritage, Inc. Future focus on protection, and further development or enhancement of these resources, is evident by the many projects done annually with these partners or only with the use of County resources. Examples of projects done in cooperation with State agencies and private organizations and non- profit organizations are:

- *Living Shoreline at Conquest – a 2300 l.f. living shoreline and wildlife habitat area was created in partnership with Maryland DNR and the National Heritage Society/Wildlife Conservation Service and Queen Anne's County.*

- *Wetland conservation and creation of habitat areas at the Kudner Property (Parks) – developed in partnership with the Midshore Riverkeepers Association and MDNR and Queen Anne's County.*

- *Living Shoreline at Ferry Point – a 1500 l.f. living shoreline and wildlife habitat area created in partnership with Maryland DNR, Chesapeake Bay Trust and Queen Anne's County.*

- *300+ acres of the Blue Heron Nature Preserve awarded a Chesapeake Bay & Atlantic Trust Fund grant by Maryland DNR to implement best management practices with respect to water quality, forest and wetland conservation and wildlife habitat conservation.*

As continued strength is shown in land preservation efforts, Queen Anne's County opted out of the Tier System for Counties as prescribed by the *Sustainable Growth & Agricultural Preservation Act of 2012 (the "septic law")*, whereby local jurisdictions with planning and zoning authority were directed to submit a map (Tier Map) showing the implementation of their adopted growth tiers. The Maryland General Assembly approved the Sustainable Growth & Agricultural Preservation Act of 2012, during the 2012 General Assembly session. As a result of this Bill, Queen Anne's County amended the number of lots that could be achieved on an parcel (up to 7 lots maximum) that does not have public sewer. With the resulting ordinance in place and the non-existence of public sewer in the more rural areas of the County, much protection of natural resources, sensitive lands, forests and agricultural lands is expected.

Protected forest lands in Queen Anne's County.

Goals for Natural Resource Lands Conservation

Maryland DNR has been and continues to be a champion of preservation and conservation of public lands for natural resource protection and outdoor recreation use by citizens and visitors.

Maryland's State LPRP program notes that:

> *"Maryland's land conservation programs address emerging issues to ensure that a sustainable land conservation ethic continues to be a fundamental component for a healthy, prosperous, and resource-rich Maryland. Partnerships across State agencies, Federal and Local governments, and non-profit, feet-on –the- ground partners are key to mutual success; both to protect sensitive resources and make land available for outdoor recreation".*

State Goals for Natural Resource Land Conservation

The State Goals for Natural Resource Conservation have been, and continue to form the basis for Queen Anne's County Local natural resource land conservation goals or Queen Anne's County Local natural resource land conservation goals:

Figure SIII-3

State Goals for Natural Resource Land Conservation

1. *Identify protect and restore lands and waterways in Maryland that support important aquatic and terrestrial natural resources and ecological functions, through combined use of the following techniques:*

   • Public land acquisition and stewardship • Private land conservation easements and stewardship practices through purchased or donated easement programs • Local land use management plans and procedures that conserve natural resources and environmentally sensitive areas and minimize impacts to resource lands when development occurs • Support incentives for resource-based economies that increase the retention of forests, wetland or agricultural lands • Avoidance of impacts on natural resources by publicly funded infrastructure development projects and • Appropriate mitigation responses, commensurate with the value of the affected resource.

2. *Focus conservation and restoration activities on priority areas, according to a strategic framework such as the Targeted Ecological Areas (TEAs) in GreenPrint (not the same as Greenprint).*

3. *Conserve and restore species of concern and important habitat types that may fall outside of designated green infrastructure (rock outcrops, karst systems, caves, shale barren communities, grasslands, shoreline beach and dune systems, mud flats, non-forested islands, etc.)*

4. *Develop a more comprehensive inventory of natural resource lands and environmentally sensitive areas to assist state and local implementation programs.*

5. *Establish measurable objectives for natural resource conservation and an integrated state/local strategy to achiever them through state and local implementation programs.*

6. *Assess the combined ability of state and local programs to achieve the following:*

   • Expand and connect forests, farmland and other natural lands as a network of contiguous green infrastructure • Protect critical terrestrial and aquatic habitats, biological communities and populations • Manage watersheds in ways that protect, conserve and restore stream associated hydrologic and water quality functions • Adopt coordinated land and watershed management strategies that recognize the critical links between growth management and aquatic biodiversity and fisheries production and • Support a productive forestland base and forest resource industry, emphasizing the economic viability of privately owned forestland.

County Goals for Natural Resource Land Conservation

The vision identified by Queen Anne's County is that " *the County will be a rural County that plans for orderly growth to protect and sustain a primarily agricultural, forested and maritime community within the limits of natural resources by concentrated future growth in existing towns and population centers, and preserves the County's natural beauty an resources for future generations . . ."* and that *". . .Queen Anne's County is also a County that values and protects its water resources and is conscientious of its stewardship to the land and other natural assets and resources that make it a great place to live, work and play."* From 2010 Comprehensive Plan.

Figure SIII-4

County Goals for Natural Resource Land Conservation

(from the 2010 Comprehensive Plan, updated to include 2017 Department of Parks Goals)

1. *Resource Protection, Conservation and Preservation Strategies that Promote high Water Quality and Protect Aquatic Life with Emphasis on Critical Areas.*

    Objective 1: Seek to implement watershed based planning to comply with nutrient TMDLs of receiving waterways as identified by the State.

    Objective 2: Promote and facilitate the protection of Sensitive Areas

    Objective 3: Seek to protect Critical Areas

2. *Conservation, Preservation and Regulation Strategies to include Environmental Protection and Resource Conservation Measures.*

    Objective 1: Develop steps to improve water quality in order to be removed from the State's impaired waterway list.

3. *Recognize the goal, objectives and initiatives of various environmental groups to preserve open space, protect natural resources and improve the quality of the Chesapeake Bay and its tributaries.*

    Objective 1: Continue and seek new opportunities with local riverkeepers associations and environmental non-profits to assist in achieving the goals for natural resource conservation in the County.

4. *Foster a strong working relationship between the County and the State in areas of mutual interest.*
    Objective 1: Continue to partners with State agencies such as the DNR, Critical Area Commission, etc. to strengthen efforts in areas of mutual concern.

Due to its proximity to the Washington D.C. /Baltimore corridor, Queen Anne's County has felt the pressures associated with growth for several decades. With it, this growth has brought the ideas, needs and wants of new residents who may have left the pressures of a more urban environment for a quieter, quality of life that can be found on the Eastern Shore. It is a fine balance to provide the type of economic development necessary to attract and keep a viable local economy, while maintaining the 'quintessential rural community' as outlined in the County's Vision Statement. The pressures of transportation needs along a heavy interstate route, land and housing costs, schools and public infrastructure have left the cost of development of public facilities challenged.

Despite these challenges, Queen Anne's County has remained a leader in natural resource and agricultural land preservation in the State. As evident in the following table titled ***Maryland Natural Resource Goals – Action Taken by Queen Anne's County, 2012 – 2017***, it is the realization by local government officials and planners, that sustained efforts serve to only enhance the quality of life for residents and visitors. To remain proactive in providing access to the water and land for active and passive recreational opportunities, the protection of natural resources has been at the forefront of these efforts at the local level.

Girl Scouts participating in Arbor Day event.

Implementing Ordinances and Programs

The following is a listing of key County Ordinances adopted since 2004 when the County's Zoning and Subdivision Regulations, codified in Chapters 14 and 18 of the County Code, were comprehensively revised. Ordinances were revised to further minimize environmental impacts and to define regulatory activities with the potential to protect environmentally sensitive areas and water resources.

Some of the ordinances listed below pertain specifically to the Chesapeake Bay Critical Area Act, the County's Environmental Protection Code and other chapters of the County Code.

County Ordinance No. 08-15– The ordinance makes minor extraction and dredging disposal uses as requiring a permit from the Maryland Department of the Environment permitted as a conditional use.

County Ordinance No. 08-13 –The ordinance incorporates the County's Environmental Site Design Manual into Chapter 14:4 of the Code of Public Local Laws and established a preference for non-structural practices for stormwater management plans.

County Ordinance No. 08-10–The ordinance prohibits application of commercial or chemical fertilizer within the Critical Area Buffer during certain times of the year.

County Ordinance No. 08-09 –The ordinance requires mandatory pump-out of on-site septic systems at least once every five years.

County Ordinance No. 08-08–The ordinance provides the right-to-conduct seafood industry operations.

County Ordinance No. 08-04–The ordinance defines setbacks of 100 feet from Tidal and Non-Tidal Waters and Wetlands for principal residential structures in the Waterfront Village Center Zoning District.

County Ordinance No. 04-07–The ordinance establishes setback from stream buffers for certain uses.

County Ordinance No. 04-06–The ordinance adds provisions requiring vegetative improvements to stream buffers when development activity occurs on adjacent land.

As noted earlier, The Maryland General Assembly passed Senate Bill 236, the *Sustainable Growth and Agricultural Preservation Act of 2012* (aka "the Septic Bill") during the 2012 legislative session. The goal of the legislation is:

> *"To limit the disproportionate impacts of large subdivisions on septic systems on our farm and forest land, streams, rivers and Chesapeake and Coastal Bays."*

The Septic Bill is implemented through the preparation and adoption of growth tier mapping by the individual jurisdictions including municipalities. Queen Anne's County chose to opt out from voluntary identification and mapping of the Tiers as provided for in State Bill 236 where it has been justified that local zoning puts adequate limits and restrictions on such growth. Therefore it was determined that additional restrictions were not needed.

Mechanisms Used for Natural Resource Land Protection

Maryland is recognized nationally as a leader in land conservation. Through the Department of Natural Resources (DNR), model programs for land conservation and recreation have been developed and recognized for more than 50 years. These programs offer grants to conserve natural resources and provide lands for recreation at the local level.

Queen Anne's County has been widely successful in the ability to capture funding resources offered through the programs outlined in the section of this LPPRP dedicated to Agricultural Land Preservation. In order to advance local goals and objectives in land conservation for the purposes of natural resource protection and recreational land use, many of these same programs and tools are utilized by the County. Perhaps, the most successful tool in conservation of natural resource lands and sensitive areas in the County has been DNR's Program Open Space.

Program Open Space (POS)

Established under the Department of Natural Resources in 1969, POS symbolizes Maryland's long term commitment to conserving natural resources while providing exceptional outdoor recreation opportunities for citizens. Funding for Program Open Space typically comes from the collection of a 0.5% State real estate transfer tax. Transfer tax funding of POS is designed with a direct correlation between development pressures and available funding for open space and recreational facilities for the public good.

The Program also administers and leverages federal funds including funds provided through the U.S. Department of the Interior National Park Service Land and Water Conservation Fund.

Program Open Space has two components:

- *Program Open Space Stateside* – conserves natural areas for public recreation, watershed and wildlife protection through the fee simple acquisition of land and conservation easements. Fee simple purchases are managed by DNR as State Parks, and other various designations. A portion of stateside funds are also dedicated to capital improvements, critical maintenance, and operations in state parks. POS Stateside projects are driven by a Targeting System, which uses the best scientific information available to target the program's limited funds.

- *Program Open Space Local* - provides financial and technical assistance to local jurisdictions (counties and municipalities) for the planning, acquisition, and/or development of recreation land or open space areas to meet their specific local land conservation and recreation goals consistent with their local Land Preservation, Parks and Recreation Plans.

Local Natural Resource Land Conservation

In 2008, Queen Anne's County adopted a Priority Preservation Area (PPA) in accordance with the Agricultural Stewardship Act. The 2008 County designated PPA boundaries reflect the same boundary identified as Rural Legacy Area.

The PPA excludes existing subdivisions, development and existing conserved lands as shown on the map depicting ***Conservation Lands*.** Lands within the PPA may consist of a variety of the following characteristics considered when prioritizing certain parcels for preservation:

- Prime Agricultural Soils;
- Forested Lands;
- Sensitive Area and Targeted Ecological Areas(Green Print Area);
- Tier II High Quality Watersheds, Sanitary Sewer Service Areas with Tier II High Quality Waterways;
- Contiguous to existing preserved lands; and
- Proximity to existing Rural Legacy Areas.

The Queen Anne's County 2010 Comprehensive Plan serves to outline the proposed PPA and further discuss the goals and objectives of the priority preservation area and should be referred to with regards to this subject.

Queen Anne's County has historically been a leader in the State with respect to natural resource land protection. A large portion of land interests acquired for such purposes has been through the Rural Legacy Program. Queen Anne's County is home to two of the thirty-one State Rural Legacy Areas:

Foreman Branch Rural Legacy Area (Acres; 11,691), formerly known as Chino Farms, is located in the northwest part of the county. This area includes unique wetland habitat and one of the most scenic river landscapes in the Chesapeake Bay watershed. The Foreman Branch Rural Legacy Area protects waterfront farms along the south shore of the Chester River east of Chestertown. Foreman Branch has 2.5 miles of river frontage, a 90 acre lake managed as a sanctuary for Canada Geese and other waterfowl, and several areas containing Delmarva Bays, globally unique wetlands harboring a number of endangered species. Protection of this Area will help improve the water quality of the watershed, preserve farms, woodlands, wetlands and

wildlife habitat; and preserve one of the most scenic river landscapes in the Chesapeake Bay watershed.

The Lands End Rural Legacy Area (Acres: 11,880) Located along the Corsica and Chester Rivers. The Area contains Conquest Preserve, a County- owned Park which provides public access to the Corsica and Chester Rivers, historic, agricultural/horticultural and environmental interpretation, other passive recreational uses, and protects wetlands and wildlife habitat. Significant amount of shoreline along the Chester River is preserved within this Area as well as prime waterfowl habitat. Additional properties comprise the Lands End Rural Legacy Area, preserving shoreline, historic agriculturally used lands, and providing unique wetland and wildlife habitat.

Additionally, Queen Anne's County, through a combination of local Watershed Implementation Plan funding, Federal and State grants and loans programs, has been particularly successful in preserving natural resources associated with local waterways/watersheds, riparian lands, forests and sensitive areas.

Queen Anne's County has been recognized both nationally and on the local level for its work in protecting sensitive land by establishing living shorelines. In addition to shoreline erosion protection measures implemented at Ferry Point and Conquest Preserve, the establishment of wildlife habitat, riparian buffers and vegetative filters are just some of the best management practices employed to protect local natural resources. The protection and enhancement of sensitive lands provides insurance for overall protection of the natural resources and justification for the original investment in property acquisition of lands such as Ferry Point and Conquest Preserve. Additionally, in the case of Ferry Point, this type of project provides physical protection of the County's economic hub, the Kent Narrows Waterfront Village Center District. In the case of Conquest Preserve, protection of an event rental venue, wildlife habitat, walking, equestrian trails and structures demonstrates the County's ability to provide public recreation opportunities while conserving the natural features that make them so desirable.

For many years, Queen Anne's County has been dealing with the issues revolving around designing and financing a solution to failing septic systems and excessive nutrient loading in the area of Southern Kent Island. In November of 2016, the Maryland Board of Public Works voted to approve such a project, and through the current administration approved a loan to Queen Anne's County for $32 million to execute the project. Additionally, the State granted the County $15 million in Bay Restoration Funds to assist in paying down the loan.

This project is seen as hugely important in protecting the natural resources of Southern Kent Island This area is an extremely low-lying area of the county comprised of small lots developed in the 1950's and 60's and served currently only by septic systems. Building lots of record will

be consolidated in many instances and served with a STEP system as a public sewerage utility, thus reducing issues associated with failing septic systems in an area of hydric soils and high water table. The project is estimated to reduce nutrient loads of nitrogen and phosphorus up to 17,300lbs, meeting more than 33% of the State prescribed goal for reduction of nitrogen and phosphorus in Queen Anne's County waterways. Lot consolidation should result in overall protection for critical area and otherwise sensitive lands and habitat. Maryland Secretary of the Environment, Ben Grumbles recognized the project by stating:

"We congratulate Queen Anne's County for moving forward on this important environmental project. Local support, financial sustainability and good science lead to the best outcomes for the environment and the economy."

County Watershed Implementation Project

In 2015 Queen Anne's County continued to demonstrate its commitment to natural resource protection by funding the County's Watershed Implementation Plan (WIP). Through the County WIP program, public lands and water quality have been further protected and enhanced throughout the County. The land use ethic utilized to conserve natural resources in Queen Anne's County reflects the State goals and strategies as well as the State Sustainable Smart Growth Management Strategies.

The Watershed Implementation Plan has also been significant in the protection and enhancement of sensitive lands within the County, including forest lands, wetlands and habitat areas. In addition to the main goal of meeting the County's Total Maximum Daily Load (TMDL) as prescribed by the State MDE and MDP, this funding source has contributed greatly to the protection and conservation of natural resource lands. In many instances projects including wetland creation/restoration and enhancement, forested buffers and habitat creation, have been carried out in partnership with local non-profit organizations and advocacy groups such as the MidShore Riverkeepers Conservancy, the Corsica River Conservancy, the Chesapeake Bay Trust and Chesapeake Bay Foundation. Maryland's Department of Natural Resources has been

key in assisting Queen Anne's County in identifying priority areas for protection and conservation and working to help the County find creative funding mechanisms to help achieve both State and local natural resource protection goals.

Planning for Coastal Resiliency

Given the topography and proximity to the Chesapeake Bay and its tributaries and much of it's more populated areas, Queen Anne's County has undertaken measures that consider rising sea level and the increased potential for storm damage and flooding of low-lying and shorefront areas. In 2010, Queen Anne's County was awarded NOAA's Coast Smart Resiliency Grant and chosen as one of two pilot programs in the State. Through this grant the County's environmental ordinance was reviewed and in some instances amended. The QAC Department of Emergency Services benefitted from the grant exercise of conducting a County preparedness scorecard that provided information helpful in assessing further needs for resources and evacuation route mapping.

The Department of Public Works with funding from NOAA – the National Oceanic and Atmospheric Association, conducted the *Sea Level Rise and Coastal Vulnerability Assessment and Implementation Plan of Queen Anne's County in March, 2016*. Results of the SLR and Coastal Vulnerability Assessment indicate that inundation from SLR will affect a range of resources, including infrastructure, land use, agriculture and natural resources, as well as increase the risk to public safety. The County has undertaken measures considering impacts from sea level rise and increased potential for flooding and storm drainage. Measures taken have been: acquiring several residential properties where repeat flooding renders the property uninhabitable; raising the amount of freeboard required to 2' in development areas; assessing waterfront properties and the ability to naturalize sites, raise bulkheads where appropriate, and plant native vegetative buffers in so much as possible to protect County resources and infrastructure. The complete report ***Sea Level Rise and Coastal Vulnerability Assessment and Implementation Plan of Queen Anne's County in March, 2016*** is found in **Appendix E** of this report.

Coastal flooding in the Kent Narrows during Hurricane Isabel, 2003

Inventory of Protected Natural Resource Lands

Queen Anne's County documents existing conserved natural resource lands in the county by way of mapping. Conserved natural resource lands may be found on the various maps provided following this section.

Mapping Natural Resource Lands

The following maps illustrate and convey the information relating to natural resource land conservation in Queen Anne's County:

NR Map – ***Conservation Lands***. This map created for the 2010 Comprehensive Plan and updated for this *Land Preservation, Parks and Recreation Plan*, depicts lands within various conservation/preservation easements, such as MALPF, Greenprint, MET, CREP easements, deed restricted open space and private conservation.

NR Map - ***Critical Areas, Wetland and 100 Year Floodplain.*** Created for the 2010 Comprehensive Plan Update depicts areas of Chesapeake Critical Area, wetlands as identified by the National Wetlands Inventory and the 100 yr. floodplain of the County.

NR Map – ***Targeted Ecological Areas (GreenPrint).*** Created for the 2010 Comprehensive Plan Update depicts areas within the County that are within the GreenPrint program and focuses on areas of natural resources to be conserved.

NR Map – ***Soils.*** Created for the 2010 Comprehensive Plan Update depicts Prime Soil Classification areas within Queen Anne's County.

NR Map - ***Watersheds.*** Created for the 2010 Comprehensive Plan Update depicts the eight-digit watershed areas within the County

NR Map - ***Queen Anne's County Parks and Recreational Facilities*** - Map created for the 2010 Comprehensive Plan and updated for this Land Preservation, Parks and Recreation Plan depicts Parks and Recreational Facilities throughout the County.

NR Map – ***Sanitary Sewer Service Areas w/Tier II High-Quality Waterways.*** Created for the 2010 Comprehensive Plan Update depicts State adopted non-tidal stream segments based on high biological stream survey scores, indicating areas for potential conservation and preservation.

NR Map – ***Land Use – Land Cover -2008*** Map created for the 2010 Comprehensive Plan Update depicting land use and land cover in accordance with those created by Maryland Department of Planning. (not County or Town land use).

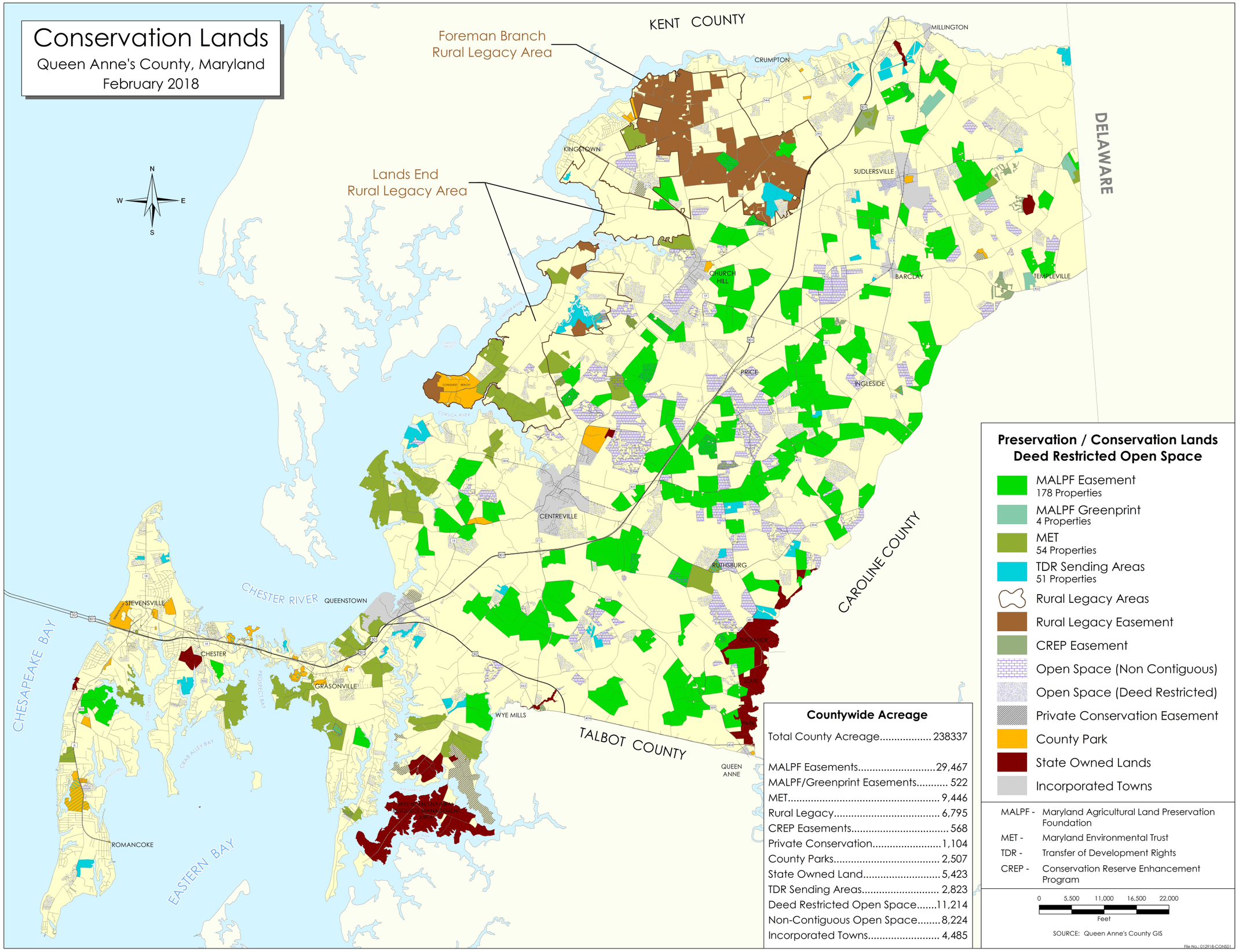
Maryland Natural Resource Goals - Action Taken By Queen Anne's County, 2012 - 2017

State Goals for Natural Resource Land Protection	Natural Resource Land Protection by QAC County	Funding Source/Lead Agency
1.Identify, protect and restore lands and waterways in Maryland that support important aquatic and terrestrial natural resources and ecological functions, through combined use of the following techniques: • Public land acquisition and stewardship • Private land conservation easements and stewardship practices through purchased or donated easement programs • Local land use management plans and procedures that conserve natural resources and environmentally sensitive areas and minimize impacts to resource lands when development occurs • Support incentives for resource-based economies that increase the retention of forests, wetland or agricultural lands • Avoidance of impacts on natural resources by publicly funded infrastructure development projects and • Appropriate mitigation responses, commensurate with the value of the affected resource.	• Acquired various properties in the County to preserve and protect significant wetland and tidal floodplain • Dedicated funding to County Watershed Implementation Plan program to design and implement projects that directly serve to protect/restore lands and waterways	• QAC Land Acquisition Funds • QAC County Commissioners
2. Focus conservation and restoration activities on priority areas, according to a strategic framework such as the Targeted Ecological Areas (TEAs) in GreenPrint (not the same as Greenprint).	• Living Shoreline projects at Ferry Point & Conquest Preserve • Partnerships with Riverkeeper groups for BMP's at Kudner Property, Wye Landing , Chesapeake College • DNR Trust Fund award for 300ac Blue Heron Nature Preserve on Southern Kent Island	• Dept. of Parks/Wildlife Conservation Grant/MDNR/WIP Funded • Bay Restoration Funds/County Match
3. Conserve and restore species of concern and important habitat types that may fall outside of designated green infrastructure (rock outcrops, karst systems, caves, shale barren communities, grasslands, shoreline beach and dune systems, mud flats, non-forested islands, etc.)	• Proposed design of 300ac Blue Heron Nature Preserve for the purposes of conserving and restoring wetland and wildlife habitat • Completed innovative Living Shoreline project in partnership w/ MDNR and Wildlife Conservation Society at Conquest Preserve. • Completed innovative Living Shoreline project in partnership w/MDNR at Ferry Point	• Dept. of Parks Capital Project funds • Dept. of Parks/Wildlife Conservation Grant/ WIP Funded • Dept of Parks/MDNR & CBT Grants
4. Develop a more comprehensive inventory of natural resource lands and environmentally sensitive areas to assist state and local implementation programs.	• Mapping of natural resource lands updates ongoing • Mapping BMP's on public and private lands for reporting to MDP/MDE • Commitment of Watershed Implementation Funds to address issues of water quality and nutrient reduction	• QAC GIS/MDP • QAC GIS • QAC Commissioners/WIP Funding
5. Establish measurable objectives for natural resource conservation and an integrated state/local strategy to achieve them through state and local implementation programs.	• Prepare and report assessment of County 2016-17 Local Watershed Improvement Plan	• P&Z
6. Assess the combined ability of state and local programs to achieve the following: • Expand and connect forests, farmland and other natural lands as a network of contiguous green infrastructure • Protect critical terrestrial and aquatic habitats, biological communities and populations • Manage watersheds in ways that protect, conserve and restore stream associated hydrologic and water quality functions • Adopt coordinated land and watershed management strategies that recognize the critical links between growth management and aquatic biodiversity and fisheries	• Used County funds as match for Rural Legacy Program – expanding the overall acreage in program by 1500ac • Assessment of watershed and prioritizing restoration plan by Chester River Association • Requirement of all septic systems within Chesapeake Bay Critical Areas be nitrogen removing systems • Prepare and report assessment of County 2016-17 WIP BMPs to MDP/MDE • 250 lf of regenerative stormwater conveyance • 1,000 lf of stream restoration • 3,000 lf of shoreline Stabilization • 500 lf of vegetated open channel • 2,500 trees planted • 6ac+ of wetland creation • 2,500 sf reduction in impervious surface • 2ac+ vegetative filter strips • 250 lf created riparian buffer	• QAC Soil Conservation/QACo Comm • Chester River Association • Critical Area Commission/ QAC • Parks, DPW

Conservation Lands

Queen Anne's County, Maryland

February 2018



Countywide Acreage

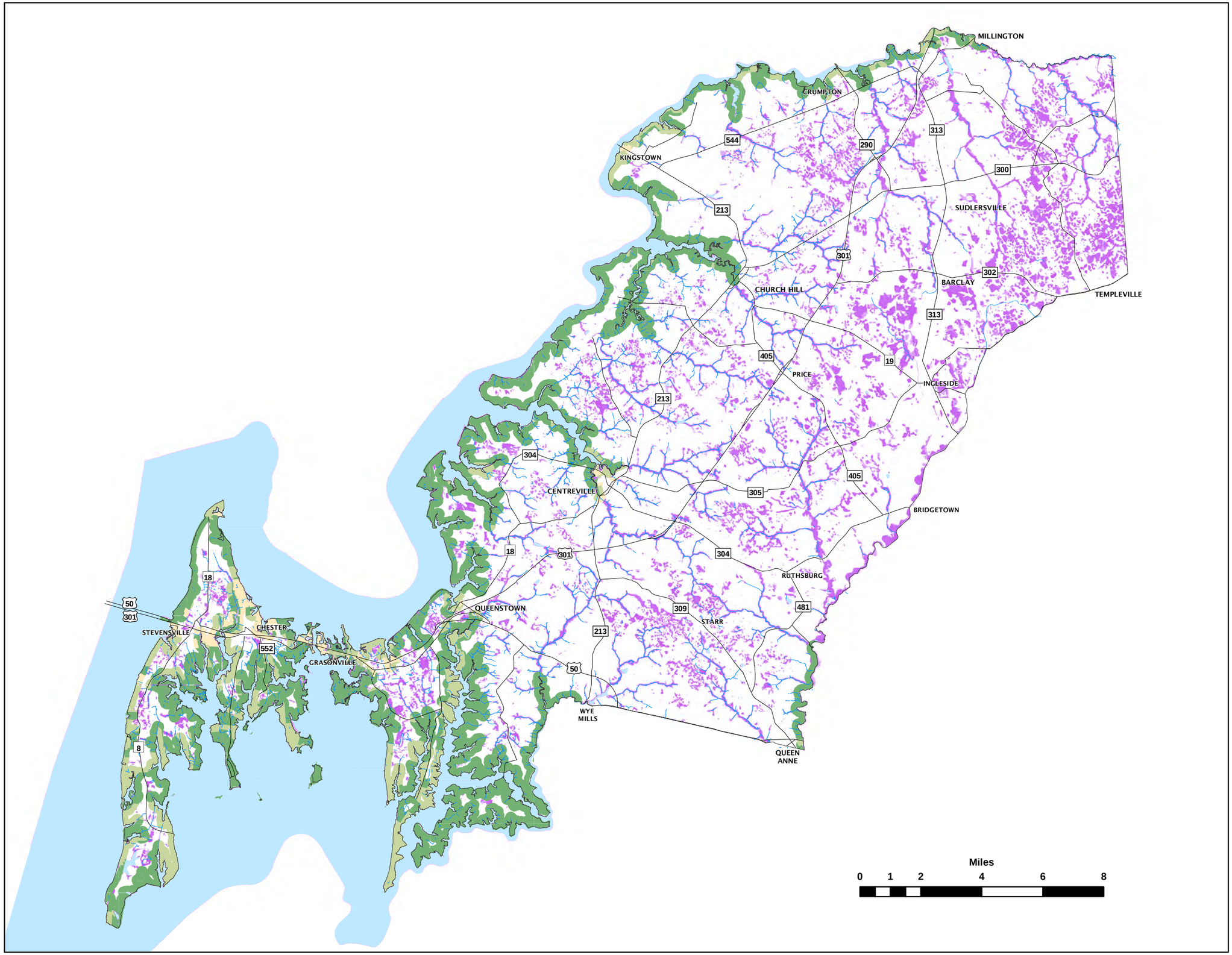
Total County Acreage	238337
MALPF Easements	29,467
MALPF/Greenprint Easements	522
MET	9,446
Rural Legacy	6,795
CREP Easements	568
Private Conservation	1,104
County Parks	2,507
State Owned Land	5,423
TDR Sending Areas	2,823
Deed Restricted Open Space	11,214
Non-Contiguous Open Space	8,224
Incorporated Towns	4,485

Queen Anne's County

Comprehensive Plan Update

Maryland

Critical Areas



Legend

- County Boundary
- Roadways
- Waterways

Critical Areas

- IDA - Intensely Developed Area
- LDA - Limited Development Area
- RCA - Resource Conservation Area
- Water
- National Wetlands Inventory Areas
- DNR Wetlands

National Wetlands Inventory (NWI)
Includes wetlands as identified by the US Fish & Wildlife Service datasets. Typically these include wetlands that are 5 acres or larger in size, additional wetlands may exist.

DNR Wetlands
Wetlands identified by the Maryland Department of Natural Resources which supplement NWI datasets.

IDA -Intensely Developed Area – An area where residential, commercial, institutional, and/or industrial developed land uses predominate where relatively little natural habitat occurs.

LDA - Limited Development Area – An area which is currently developed in low- or moderate-intensity uses which contains areas of natural plant and animal habitats, and in which the quality of runoff has not been substantially altered or impaired.

RCA - Resource Conservation Area – An area characterized by nature-dominated environments (that is, wetlands, forests, abandoned fields) and resource-utilization activities (that is, agriculture, forestry, fisheries activities, or aquaculture).

Source: Queen Anne's County Department of Land Use, Growth Management & Environment, Maryland Department of Natural Resources and US Fish and Wildlife Service.

March 2010

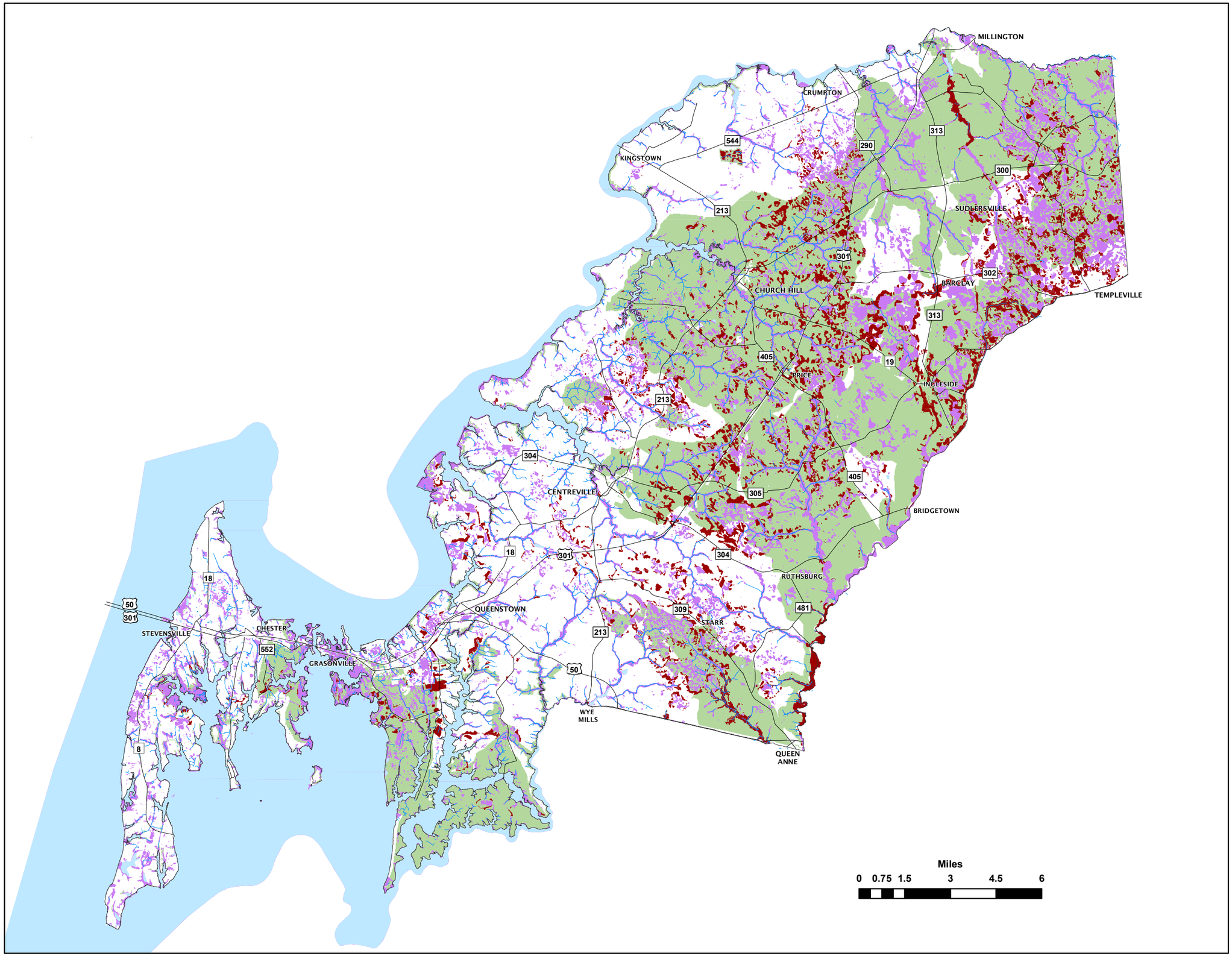
MAP ESA-1

Queen Anne's County

LPPRP

Maryland

Targeted Ecological Areas (Green Print Area)



Legend

- County Boundary
- Roadways
- Waterways
- Water
- Statewide Priority Wetlands
- National Wetlands Inventory Areas & DNR Wetlands
- Targeted Ecological Areas

Note: Map provided for information purposes only. This is not a regulatory map.

National Wetlands Inventory (NWI)
Includes wetlands as identified by the US Fish & Wildlife Service datasets. Typically these include wetlands that are 5 acres or larger in size, additional wetlands may exist.

DNR Wetlands
Wetlands identified by the Maryland Department of Natural Resources which supplement NWI datasets.

Targeted Ecological Areas (Greenprint Area) are lands and watersheds of high ecological value that have been identified as conservation priorities by the Maryland Department of Natural Resources (DNR). These lands include large blocks of forests and wetlands, rare species habitats, aquatic biodiversity hotspots and areas importantfor protecting water quality. These high priority lands were identified by DNR using a variety of methods developed by agency ecologists.

Statewide Priority Wetlands as identified by MDE based on the "Prioritizing Sites for Wetland Restoration, Mitigation, and Preservation in Maryland" 2006 Report.

Source: Queen Anne's County Geographic Information Systems, Maryland Department of Environment, Marlyland Department of Natural Resources and US Fish and Wildlife Service.

January 2018

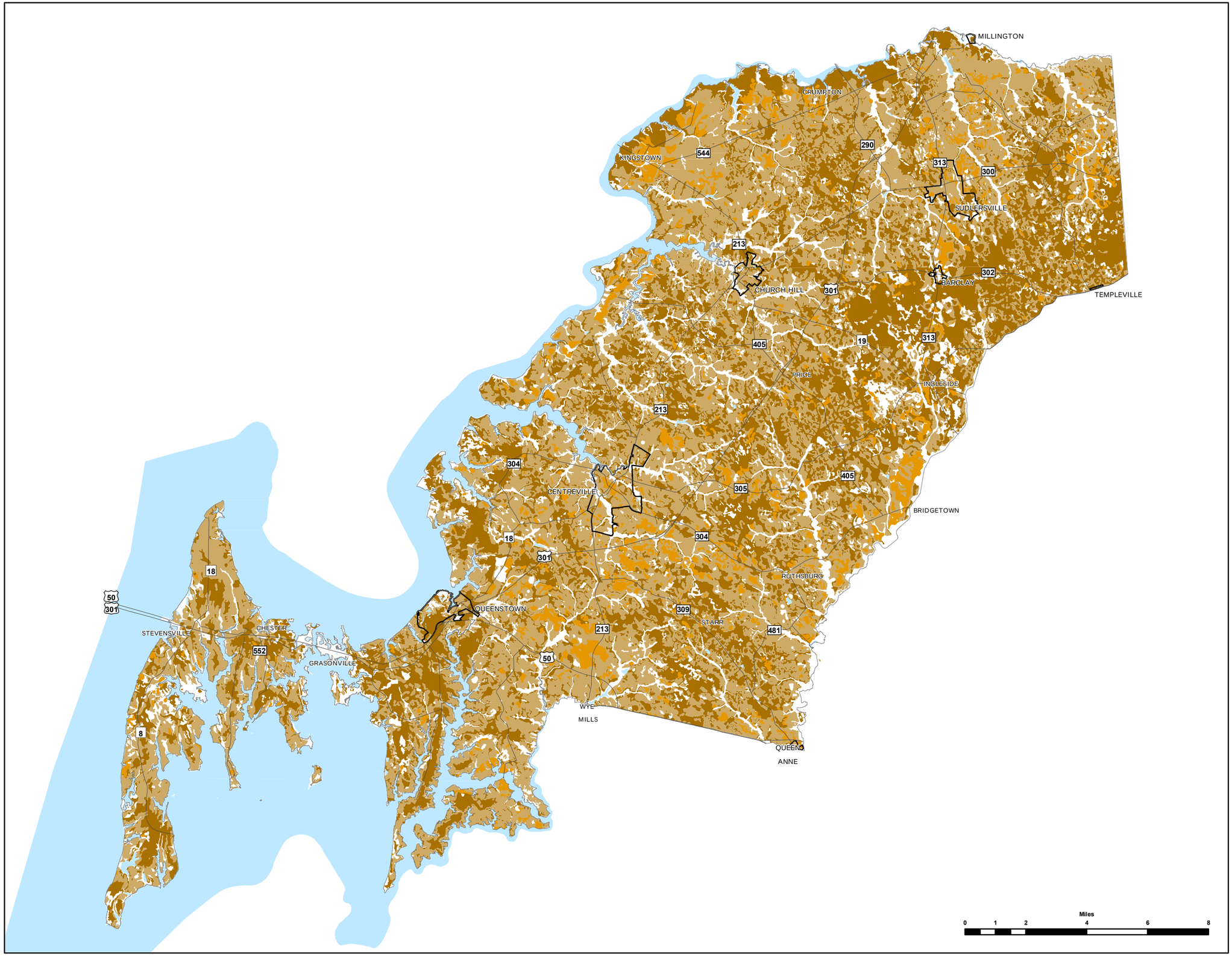
MAP ESA-3

Queen Anne's County

LPPRP

Maryland

Soils



Roadways
County Boundary
Incorporated Towns
Water

Prime Soils

CLASS1
CLASS2
CLASS3

N
W
E
S

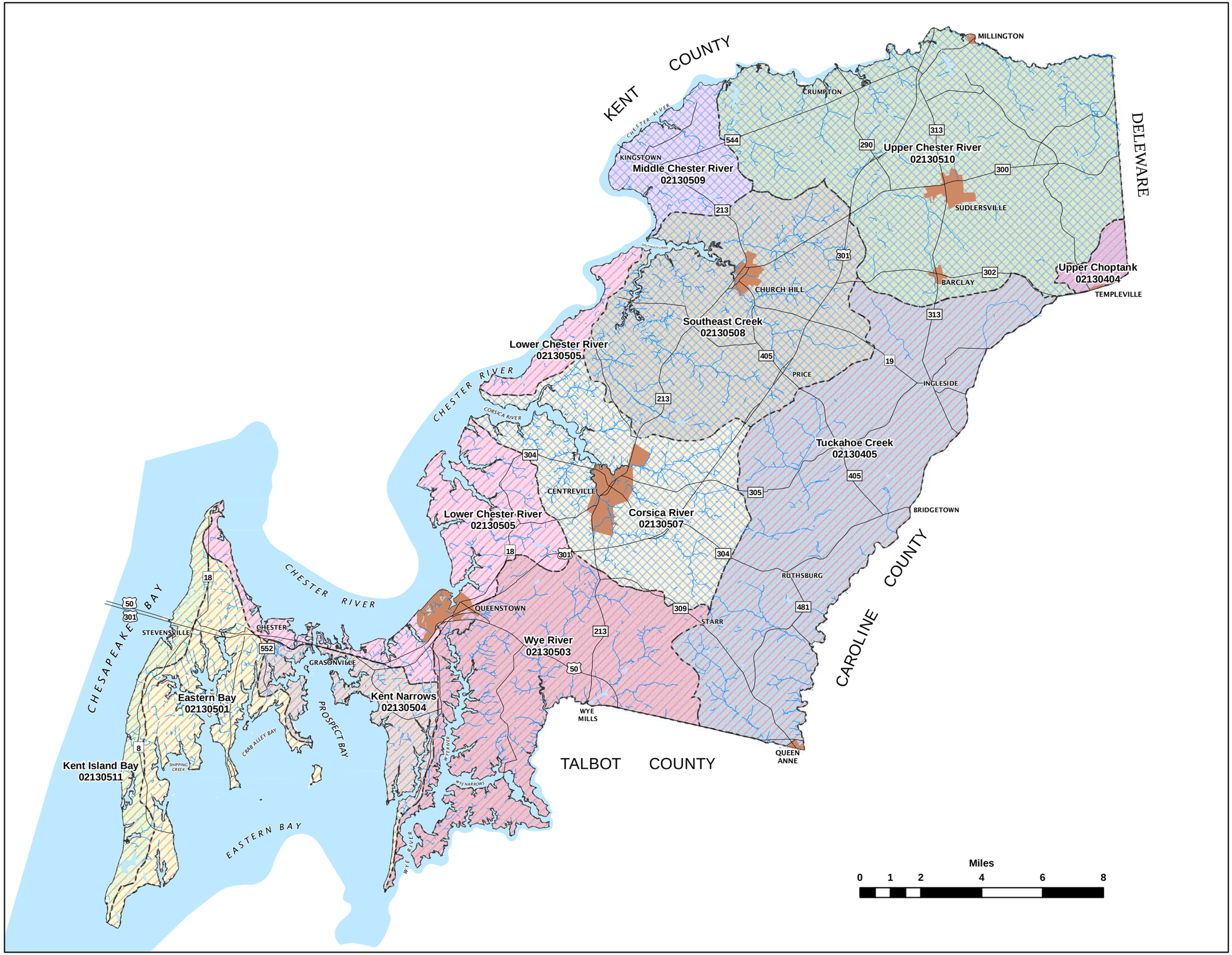
Source: Queen Anne's County Department of Planning and Zoning

May 2012

Queen Anne's County
Comprehensive Plan Update

Maryland

Watersheds



Legend

- County Boundary
- Roadways
- Waterways
- Water
- Incorporated Towns

8-Digit Watershed Status Nutrients

- Impaired
- Impaired w/TMDL Completed

8-Digit Watersheds

- Corsica River - 02130507
- Eastern Bay - 02130501
- Kent Island Bay - 02130511
- Kent Narrows - 02130504
- Lower Chester River - 02130505
- Middle Chester River - 02130509
- Southeast Creek - 02130508
- Tuckahoe Creek - 02130405
- Upper Chester River - 02130510
- Upper Choptank - 02130404
- Wye River - 02130503

Note: Imparied: A waterway is impaired if nitrogen, phosphorus, or a resulting water quality characteristic prevents attainment of a designated or existing use such as limiting or prohibiting use as a public water supply, or for swimming or fishing.

Source: Queen Anne's County Department of Land Use, Growth Management & Environment, Maryland Department of Environment, Maryland Department of Planning, and Maryland Department of Natural Resources.

March 2010

MAP ESA-4

Queen Anne's County
Comprehensive Plan Update

Maryland

Queen Anne's County Park and Recreational Facilities

Neighborhood Parks
- 1 Crumpton Park
- 2 Mowbray Park
- 3 Pinkney Park
- 4 Long Point Park
- 5 Ewing Pond Park
- 6 Stevensville Park

Community Parks
- 7 Round Top Park
- 8 Grasonville Park
- 9 Church Hill Park
- 10 Batts Neck Park
- 11 Old Love Point Park
- 12 Route 18 Park
- 13 Whitemarsh Park
- 14 Sudlersville Park

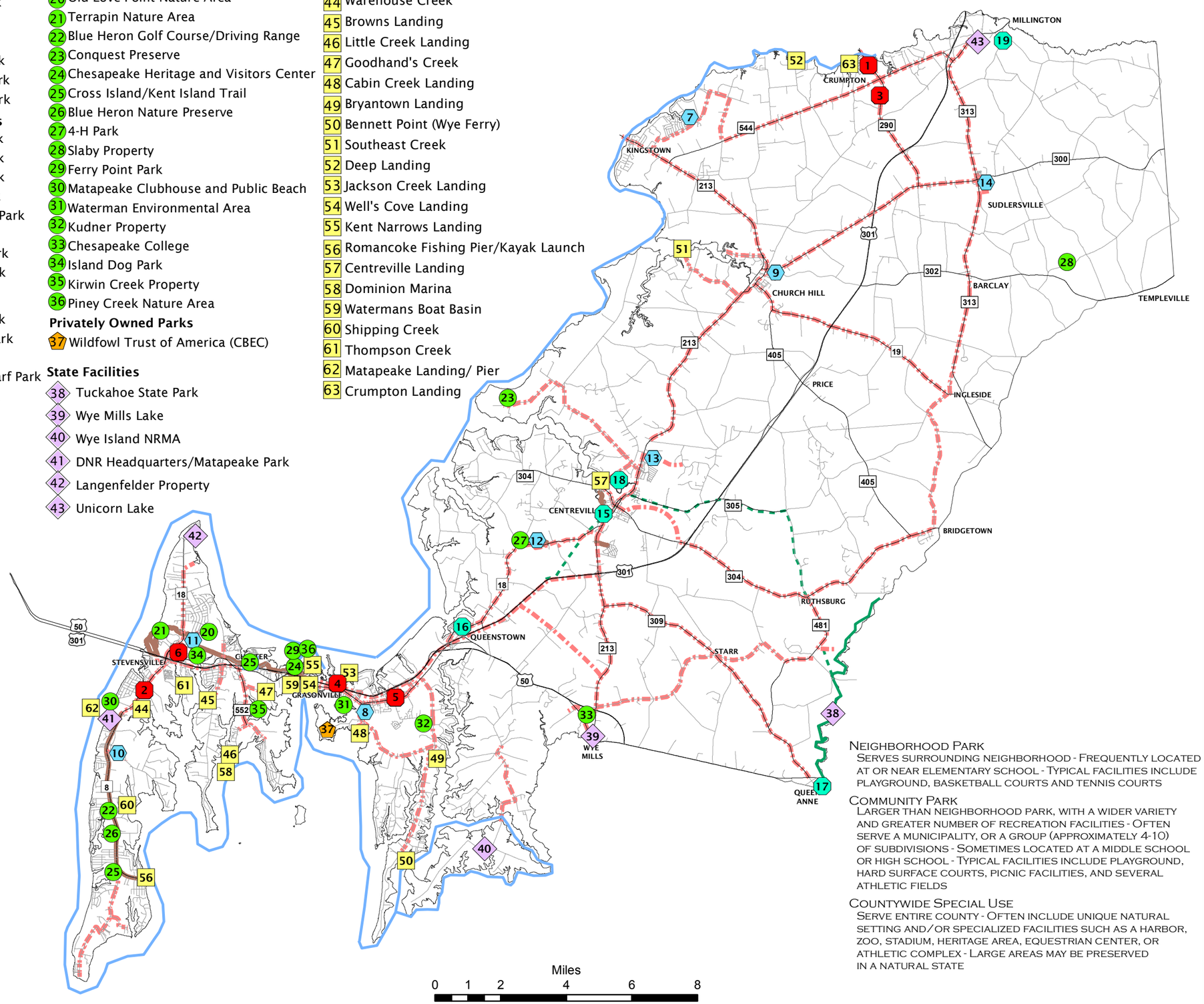
Town Parks
- 15 Mill Stream Park
- 16 Queenstown Park
- 17 Roosevelt Park
- 18 Centreville Wharf Park
- 19 Millington Park

Countywide Special Use
- 20 Old Love Point Nature Area
- 21 Terrapin Nature Area
- 22 Blue Heron Golf Course/Driving Range
- 23 Conquest Preserve
- 24 Chesapeake Heritage and Visitors Center
- 25 Cross Island/Kent Island Trail
- 26 Blue Heron Nature Preserve
- 27 4-H Park
- 28 Slaby Property
- 29 Ferry Point Park
- 30 Matapeake Clubhouse and Public Beach
- 31 Waterman Environmental Area
- 32 Kudner Property
- 33 Chesapeake College
- 34 Island Dog Park
- 35 Kirwin Creek Property
- 36 Piney Creek Nature Area

Privately Owned Parks
- 37 Wildfowl Trust of America (CBEC)

State Facilities
- 38 Tuckahoe State Park
- 39 Wye Mills Lake
- 40 Wye Island NRMA
- 41 DNR Headquarters/Matapeake Park
- 42 Langenfelder Property
- 43 Unicorn Lake

Public Landings
- 44 Warehouse Creek
- 45 Browns Landing
- 46 Little Creek Landing
- 47 Goodhand's Creek
- 48 Cabin Creek Landing
- 49 Bryantown Landing
- 50 Bennett Point (Wye Ferry)
- 51 Southeast Creek
- 52 Deep Landing
- 53 Jackson Creek Landing
- 54 Well's Cove Landing
- 55 Kent Narrows Landing
- 56 Romancoke Fishing Pier/Kayak Launch
- 57 Centreville Landing
- 58 Dominion Marina
- 59 Watermans Boat Basin
- 60 Shipping Creek
- 61 Thompson Creek
- 62 Matapeake Landing/ Pier
- 63 Crumpton Landing



Legend
- Community Parks
- Coutywide Special Use
- Neighborhood Parks
- Private Parks
- State Facilities
- Town Parks
- Public Landings
- WaterTrails
- Other Roadways
- Highways
- Proposed Trails
- Existing Trails
- Existing Greenway *
- Potential Greenway *
- * County Boundary

Greenway trail data was provided by the Maryland Department of Natural Resources. Greenway trails were added where there was no overlap with Queen Anne's County trails (Existing and Proposed Trails).

Neighborhood Park
Serves surrounding neighborhood - Frequently located at or near elementary school - Typical facilities include playground, basketball courts and tennis courts

Community Park
Larger than neighborhood park, with a wider variety and greater number of recreation facilities - Often serve a municipality, or a group (approximately 4-10) of subdivisions - Sometimes located at a middle school or high school - Typical facilities include playground, hard surface courts, picnic facilities, and several athletic fields

Countywide Special Use
Serve entire county - Often include unique natural setting and/or specialized facilities such as a harbor, zoo, stadium, heritage area, equestrian center, or athletic complex - Large areas may be preserved in a natural state

Source: Queen Anne's County Department of Land Use, Growth Management and Environment, Parks and Recreation and Maryland Department of Natural Resources

December 2016

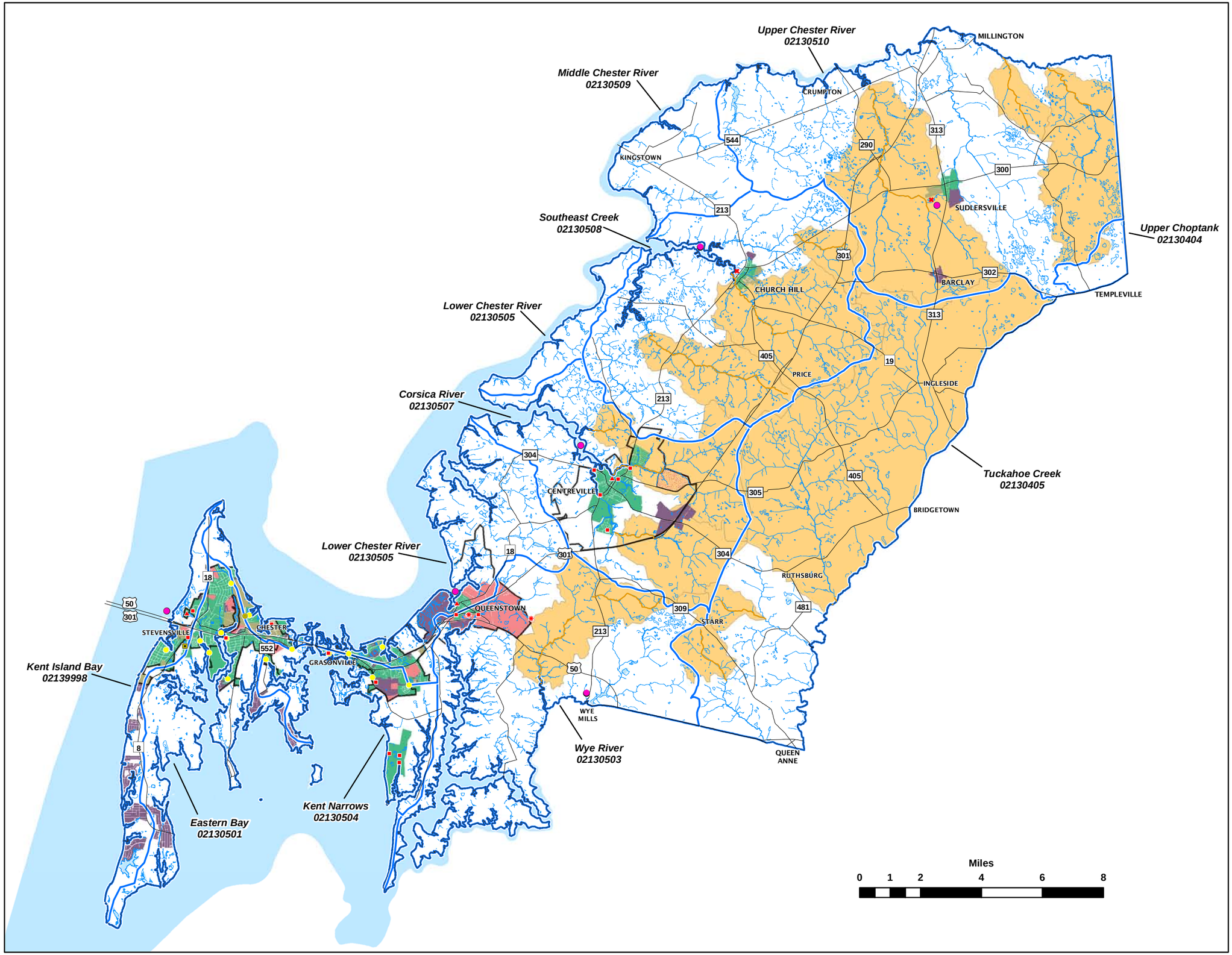
MAP CF-2

Queen Anne's County

Comprehensive Plan Update

Maryland

Sanitary Sewer Service Areas with TIER II - High Quality Waterways



Legend

- County Boundary
- Roadways
- Tier II Stream Segments
- Waterways
- County / Town Planning Areas
- 8-Digit Watersheds
- Water

Sewer Plants and Stations

- Collection Station
- Lagoon
- Pump Station
- Private System
- Proposed Collection Station
- Proposed Pump Station
- Waste Water Treatment Plant
- Outfall Locations

Sewer Service Area Designation

- S1 - Current Service Areas (2009)
- S2 - Service in the next 1-3 years ('06-'09)
- S3 - Service in the next 4 - 10 years ('10-'16)
- S4- Service in the next 11-20 years ('17-'26)
- S5 - Service beyond 20 years ('27+)
- Effluent Spray Field
- Tier II Catchments

Notes:
In June 2004, the State adopted about 85 non-tidal stream segments as Tier II waters based on high Maryland Biological Stream Survey scores. Tier II specifies an existing high quality water that is better than the minimum needed to support "fishable-swimmable" uses. While water quality can be slightly impacted, the State Anti-degradation policy identifies procedures that must be followed before an impact to Tier II water quality can be allowed.

Community Planning Area:
A geographical area, defined by the Planning Commission, to be considered in the development of a community plan or comprehensive plan.

Based on QAC provided datasets as of May 2009. Includes 2006 Comprehensive Water and Sewerage Plan data as well as amendments to sewer service areas through May 2009.

Source: Queen Anne's County Department of Public Works, Department of Land Use, Growth Management & Environment.

March 2010

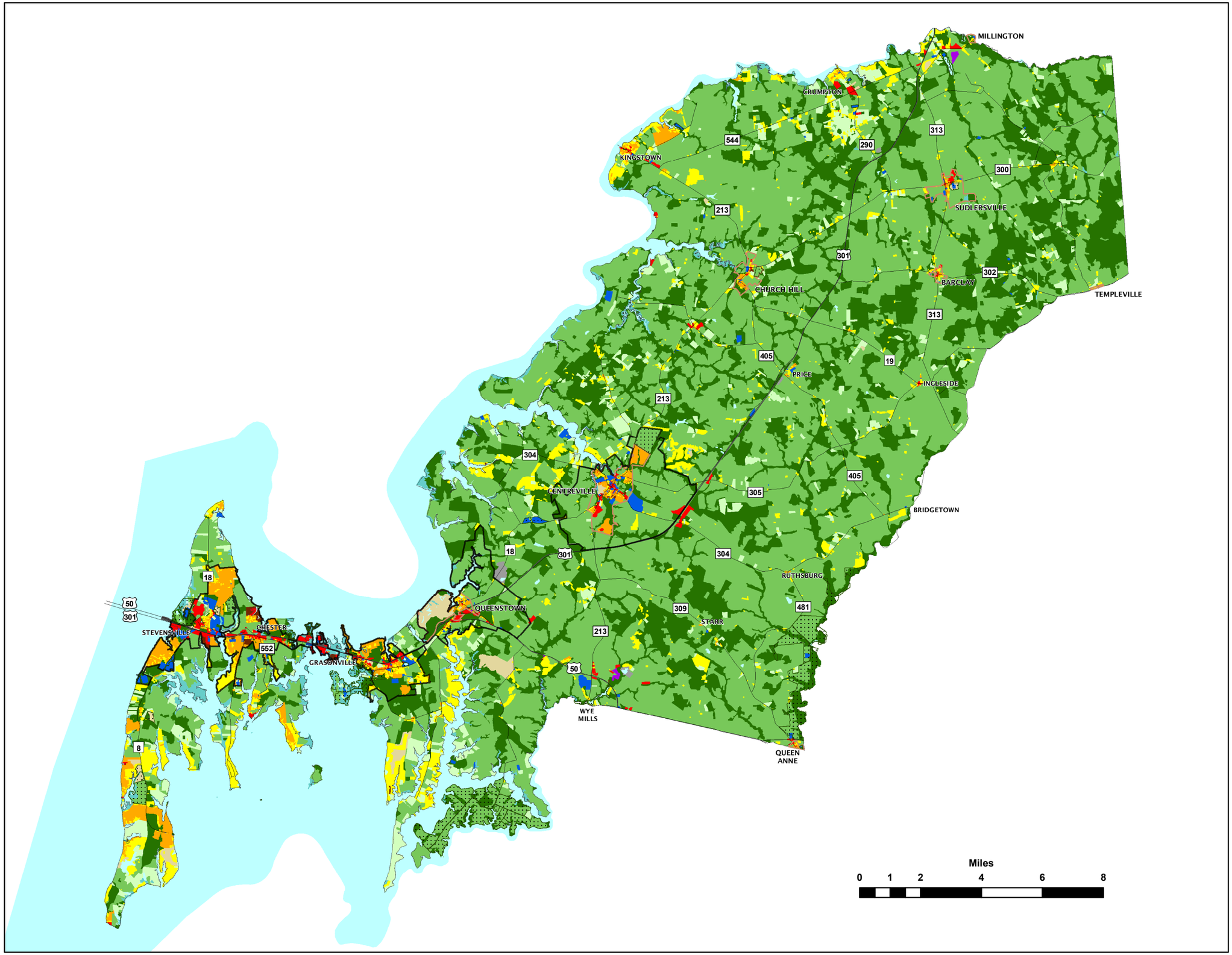
MAP ESA-6

Queen Anne's County

Comprehensive Plan Update

Maryland

Land Use - Land Cover 2008



Legend

- County Boundary
- Roadways
- Incorporated Towns
- County / Town Planning Areas
- Parks

November 2008 Land Use Land Cover

- Low Density Residential (1 to 2 units per 5 acres)
- Medium Density Residential (2 to 8 units per acre)
- High Density Residential (8+ units per acre)
- Commercial
- Mixed Commercial - Residential
- Industrial
- Institutional
- Surface Mining
- Agricultural & Very Low Density Rural Residential (1 unit per 5+ acres)
- Recreation (Private & Public)
- Agriculture
- Forest
- Water
- Wetlands
- Transportation

Note: Land Use Categories based on Maryland Department of Planning definitions, not Queen Anne's County or Town zoning definitions. Land use / land cover datasets were created by the Maryland Department of Planning (MDP). For 2002 & 2008 MDP used aerial imagery and parcel information from Maryland Property View. A draft land use / land cover originated at MDP based on 2007 data which was reviewed and refined by the County. This Comprehensive Plan utilized data finalized as of November 2008, however, since then further refinements have been sent to MDP. The residential densities are not reflective of QAC Zoning District Densities.

Source: Queen Anne's County Department of Land Use, Growth Management and Environment and Maryland Department of Planning.

March 2010

MAP LU-4

Section IV

Agricultural Land Preservation

"This land is your land, this land is my land. . . . " - Woody Guthrie

Executive Summary

Within the County's broader activity of land conservation, preservation of agricultural lands is at the forefront. Preserving agricultural land is not only included in the Vision for Queen Anne's County, it is also a principal goal of both the *2010 Queen Anne's county Comprehensive Plan* and *The 2012 Queen Anne's County Land Preservation, Parks and Recreation Plan*.

Certification of the Local Agriculture Land Preservation Program ("The Certification Program") was created by the Maryland General Assembly in 1990 and is jointly administered by the Maryland Agricultural Land Preservation Foundation and the Maryland Department of Planning.

The Agricultural Stewardship Act of 2006, adopted by the General Assembly, requires counties with certified agricultural land preservation programs such as Queen Anne's County, to establish a Priority Preservation Area (PPA) and manage this area according to certain criteria. The legislation required that the PPA be adopted in order to maintain Maryland Agricultural Land Preservation Foundation (MALPF) certification.

Counties able to demonstrate that they have an effective program to preserve agriculturally viable farmland and forested areas are eligible to participate in the Certification Program. Local preservation programs are comprised of any one or a combination of preservation tools such as agricultural zoning, transfer of development rights programs, right-to-farm policies, and the designation of agriculture as the best use of certain lands. To qualify for and retain certified status, counties are required to designate a PPA into which efforts and funds can be concentrated to preserve large contiguous blocks of agricultural and forested land.

Certified counties enjoy the benefit of retaining 75 percent of their collected agricultural transfer tax revenue, while non-certified counties retain 33 percent. All retained revenue must be spent or encumbered for qualifying land preservation expenditures within three years of collection, or those collected funds revert to the foundation. The increase in participating counties' share of the agricultural transfer tax helps to support and enhance their preservation programs in ways that best meet local goals and needs. Participation in the Certification Program by interested counties is voluntary.
In 2008, Queen Anne's County designated two Rural Legacy Areas as the County's Priority Preservation Area (PPA). However, as part of the 2010 Comprehensive Plan, the PPA was expanded to encompass not only the two Rural Legacy areas, but additional PPA for a total of 119,004 acres of land identified on the following map depicting ***Priority Preservation Areas.***

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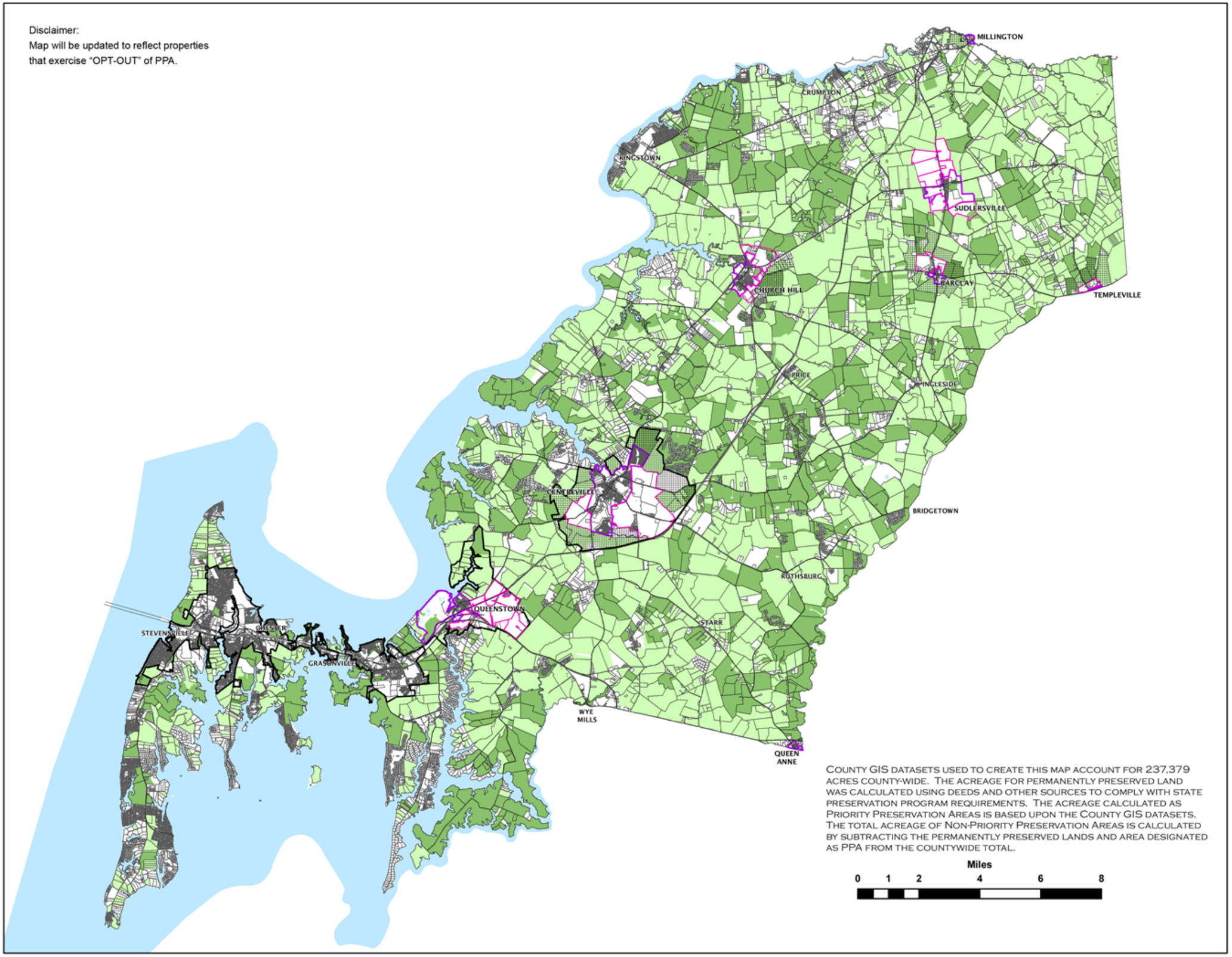
Disclaimer:
Map will be updated to reflect properties that exercise "OPT-OUT" of PPA.



County GIS datasets used to create this map account for 237,379 acres county-wide. The acreage for permanently preserved land was calculated using deeds and other sources to comply with state preservation program requirements. The acreage calculated as Priority Preservation Areas is based upon the County GIS datasets. The total acreage of Non-Priority Preservation Areas is calculated by subtracting the permanently preserved lands and area designated as PPA from the countywide total.

Miles
0 1 2 4 6 8

Queen Anne's County
Comprehensive Plan Update

Maryland

Priority Preservation Areas

Legend
- County Boundary
- Roadways
- Parcels
- Town Future Annexation Areas
- Incorporated Towns
- County / Town Planning Areas
- Greenbelts
- Permanently Preserved Lands
- Priority Preservation Areas*
- Non-Priority Preservation Areas**
- Water

Notes:
*Priority Preservation Areas do not include existing permanently preserved lands.

Permanently Preserved Land: 69,093 acres

Total area designated as Priority Preservation Area (PPA): 119,004 acres

PPA Preservation Goal (80 percent of lands available for preservation): 95,203 acres

**Non-Priority Preservation Areas:
49,282 acres
Areas Include:
- Planning areas, incorporated Town Boundaries and future annexation areas;
- Common areas within subdivisions;
- Public and private properties exempt from taxes such as churches and schools;
- Major and minor subdivision approved from January 2002 to April 2009;
- Lots that are less than or equal to 5 acres;
- Lots improved with a residence 20 acres or less; and
- All properties not zoned Agriculture and Countryside.

Source: Maryland Department of Planning, Queen Anne's County Department of Land Use, Growth Management & Environment (LGE). Satellite Imagery 2007-2008, and 2010 Tax Parcels as compiled by LGE.

March 2010

MAP ESA-10

The acreage shown in the PPA represents approximately 50 percent of the total lands within the County, and 59 percent of lands zoned Agricultural (AG) or Countryside (CS). The PPA excludes areas of existing subdivisions and development as depicted on the map of Conservation Lands (found following this Section) even though they are zoned Agricultural (AG) or Countryside (CS).

The Vision for preservation of agricultural lands noted in the Queen Anne's County 2010 Comprehensive Plan is that:

Figure SIV-1

County Vision for Agricultural (Priority) Preservation Area

The vision of the future of Queen Anne's County is to maintain and enhance the County as a good place to work and a great place to live through agricultural and rural preservation for the following purposes:

- *Creating a strong, sustainable rural community full of diversified agricultural opportunities including forest crop, row crop, viticulture and a wide array of agriculture alternatives;*
- *Promoting and protecting agriculture through rural preservation that sustains rural values and lifestyles;*
- *Supporting the rural character with small towns, country roads and open spaces;*
- *Gaining a larger market share on the East Coast for locally grown agricultural products;*
- *Retaining and protecting productive farmlands, historic farmsteads, coastal marsh and forested lands, and pristine landscapes throughout the County;*
- *Creating a greater awareness of the County's agrarian history through effective preservation policies and tourism education; and*
- *Advancing specialty farming industries and markets.*

Article 66B visions, referenced in the 2010 Comprehensive Plan with respect to preservation and conservation, emphasize quality of life and sustainability, environmental protection, resource conservation and stewardship. These key visions for the County provide the framework for the priority preservation of local agricultural land, natural resources and amenities.

The following guiding principles as first outlined in Maryland's Agricultural Stewardship Act of 2006, provide the characteristics and identify guidelines for designating lands for priority preservation. Priority Preservation Areas should:

- *Contain productive agricultural or forested soils, or be capable of supporting profitable agricultural and forestry enterprises;*

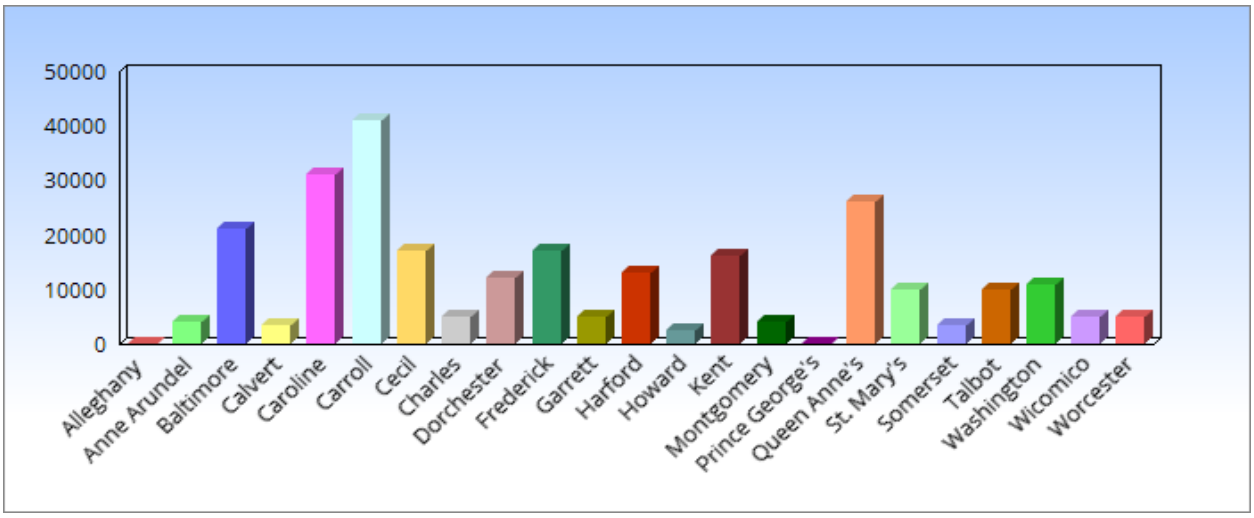
- *Be governed by local policies that stabilize the agricultural and forest land base so that development does not convert or compromise agricultural or forest resources; and*

- *Be large enough to support the kind of agricultural operations that the County seeks to preserve.*

Figure SIV-2

Maryland Agricultural Land Preservation Acreage

(Acres preserved as of 6/30/15 as reported by the MD Ag Land Preservation Foundation)



Goals for Agricultural Land Preservation

In 2002, the Maryland General Assembly passed a resolution establishing a statewide goal of preserving approximately 1,030,000 acres of productive agricultural land by 2022 through the combined efforts of MALPF, Rural Legacy, GreenPrint (program that has since ended) and local easement acquisition programs.

The following are the State Goals for Agricultural Land Preservation:

Figure SIV-3

State Goals for Agricultural Land Preservation

1. *Permanently preserve agricultural land capable of supporting a reasonable diversity of agricultural production;*

2. *Protect natural, forestry and historic resources and the rural character of the landscape associated with Maryland's farmland;*

3. *To the greatest degree possible, concentrate preserved land in large, relatively contiguous blocks to effectively support long-term protection of resources and resource-based industries;*

4. *Limit the intrusion of development and its impacts on rural resources and resource-based industries;*

5. *Ensure good return on public investment by concentrating state agricultural land preservation funds in areas where the investment is reasonably well supported by both local investment and land use management programs;*

6. *Work with local governments to achieve the following; • Establish preservation areas, goals and strategies through local comprehensive planning processes that address and complement state goals; • in each area designated for preservation, develop a shared understanding of goals and the strategy to achieve them among rural landowners in preservation areas by ensuring sufficient public commitment and investment in preservation through easement acquisition and incentive programs; • Use local land use management authority effectively to protect public investment in preservation by managing development in rural preservation areas; and • Establish effective measures to support profitable agriculture, including assistance in the production, marketing and the practice of stewardship, so that farming remains a desirable way of life for both the farmer and public-at-large.*

Queen Anne's County continues to address State goals for agricultural land preservation as evidenced in the following table, ***Maryland Agricultural Land Preservation Goals – Action Taken By Queen Anne's County, 2012 – 2017.***

Maryland Agricultural Land Preservation Goals - Action By Queen Anne's County, 2012 - 2017

State Goals for Agricultural Land Preservation	Agricultural Land Preservation Goals Addressed by QAC Parks	Funding Source
1 . Permanently preserve agricultural land capable of supporting a reasonable diversity of agricultural production;		
2. Protect natural, forestry and historic resources and the rural character of the landscape associated with Maryland's farmland;	• Completed Phase II Historic Sites Survey • Awarded grant for Phase III Historic Sites Survey • Protect lands for contiguous forests, meadows and rural character	MHT Grant MHT Grant Rural Legacy, MALPF, POS,
3. To the greatest degree possible, concentrate preserved land in large, relatively contiguous blocks to effectively support long-term protection of resources and resource-based industries;	• Two large Rural Legacy areas protected and added lands	Rural Legacy
4. Limit the intrusion of development and its impacts on rural resources and resource-based industries;	• Implementation of 'Septic Bill'	
5. Ensure good return on public investment by concentrating state agricultural land preservation funds in areas where the investment is reasonably well supported by both local investment and land use management programs;	• Achieved thru process of lands in MALPF and Rural Legacy Programs	Rural Legacy, MALPF
6. Work with local governments to achieve the following: Establish preservation areas, goals and strategies through local comprehensive planning processes that address and complement state goals • in each area designated for preservation, develop a shared understanding of goals and the strategy to achieve them among rural landowners in preservation areas by ensuring sufficient public commitment and investment in preservation through easement acquisition and incentive programs • Use local land use management authority effectively to protect public investment in preservation by managing development in rural preservation areas; and • Establish effective measures to support profitable agriculture, including assistance in the production, marketing and the practice of stewardship, so that farming remains a desirable way of life for both the farmer and public-at-large	• Achieved through local County Comprehensive Plan: /Citizen Advisory Groups, Identification of Strengtjs. Weaknessess, Opportunities and Trends, Develop Goals and Recommendations that may become ordinance.	

County Goals for Agricultural Preservation Lands

The importance of the region's agricultural heritage is the top priority with residents and members of the farming community and is consistent with County planning initiatives.

Currently, 85% or 202,627 acres of Queen Anne's County's land is zoned Agricultural (AG) or Countryside (CS). Such lands continue to remain a crucial economic value to the County and the Eastern Shore of Maryland.

Figure SIV-4

Queen Anne's County Agriculture – 2016

Total Land in County	238,937ac
Total Land in Farms	208,545ac
Total Tillable Land	146,927 acres
Enrolled in Land Preservation*	77,146 ac
Total Number of Farms	521 farms
Average Size of Farm	282 acres (59% Greater than State Avg)

*Includes all preservation programs except for MALPF Districts

Queen Anne's County is one of only three counties in Maryland that has preserved approximately 38% of its total land area in some form of conservation program. The 2010 Census of Agriculture noted that the County's 521 farms covered more than 208,545 acres or 61.72 percent of the County. Of that land, 146,927 acres remain as tillable land

The County's current agricultural economy includes agricultural production and products such as field crops, vegetables, fruits, livestock and poultry. The future agricultural economy is expected to continue production in a similar manner with the ability to provide other types of specialty products via the use of a variety of agricultural practices and innovations.

The following are types of agricultural, forestry aquaculture and associated uses important to the economy of Queen Anne's County:

- Livestock and poultry production;
- Vegetable and fruit harvesting and processing;

- Forestry, logging and timber harvesting,
- Aquaculture harvesting and processing;
- Agricultural retail (i.e. farmers markets, wholesaling);
- Specialty agriculture such as viticulture, farm to table, and other specialty products; *and*
- Silvaculture and sod production.

Within the Agricultural (AG) and Countryside (CS) zoning districts, the County uses development and preservation techniques such as Transfer of Development Rights, (TDR), Deed Restricted Open Space (DROS) and Non- Contiguous Open Space (NCD). These techniques require the creation of deed restricted open space thus achieving higher levels of preservation through private market transactions rather than relying on funding from governmental programs. Approximately 22,359 acres of land has been preserved in the County utilizing these development techniques.

Queen Anne's County has an appointed four member Agricultural Preservation Advisory Board. Formed in 1990 and based on Maryland State Law concerning such boards, the purpose of the board is to:

- *Advise county government with respect to establishment of agricultural districts and the approval of purchases of easements by the foundation within the County.*
- *Assist in reviewing the status of agricultural districts and land under easement.*
- *Advise the Maryland Agricultural Land Preservation Fund concerning County priorities for agricultural preservation.*
- *Promote preservation of agriculture within the County by offering information and assistance to farmers concerning the establishment of districts and purchase of easements and to perform any other duties assigned by the County.*

The County uses the following programs to acquire easements that preserve agricultural land:

- Maryland Agricultural Land Preservation Foundation (MALPF)- State program
- Maryland Environmental Trust (MET)- State program
- Rural Legacy Program – State program
- Transfer of Development Rights (TDR) - County program
- Deed Restricted Open Space (DROS) – County program

- Non-Contiguous Open Space (NCOS) – County program, and the
- Cluster Subdivision Technique

The programs utilized are further explained below:

Maryland Agricultural Land Preservation Foundation

The Maryland Agricultural Land Preservation Foundation (MALPF) was established in 1976 to provide funds as an incentive to preserve private farmland. Individual farmers sell an easement to MALPF, restricting development of the property. The Governor and General Assembly allocate MALPF funds from the State real estate transfer tax revenues. MALPF allocations are divided into two parts; the first part of the allocation consists of 50% of all available MALPF funds and is divided evenly among the 23 counties. The second part of the allocation, which also consists of 50% of total available funds, is used to match county funds. State MALPF funds from the matching allocation can be used for up to 60% of total project cost, with a maximum of $1 million. Any funds unspent from the allocation procedures are used on a statewide basis according to the ratio of asking price to easement value.

Applications for MALPF are submitted to the County coordinator, who forwards the application and recommendation of the local advisory board to the State. Easement values are established by appraisal, and property owners are encouraged to voluntarily discount the easement value (i.e. accept a lower amount of compensation than the appraisal indicates) in return for potential tax benefits.

Queen Anne's County uses the MALPF program as its primary agricultural land preservation tool. The County fiscal commitment to the MALPF program declined significantly in the years between 1997 thru 2005 and has since regained momentum to some degree, as noted by the commitment of funding below:

- FY 12 $ 592, 440
- FY 13 $ No Program
- FY14 $ 1,300, 000
- FY 15 No Program
- FY 16 $ 406,068

Maryland Environmental Trust

The Maryland Environmental Trust (MET) was established in 1970. MET accepts conservation easement donations from property owners. Donations are strictly voluntary and are utilized by landowners to protect natural resources and preserve scenic open space. The landowner who gives an easement limits the right to develop and subdivide the land, now and in the future, but still remains the owner. Easements are binding on future owners, therefore, an easement

assures that the land will never be used in a way contrary to the current owner's intent. Financial benefits in the form of tax deductions may also be associated with the easements. Easements often facilitate transferring land to family members without paying large estate taxes. MET may accept conservation easements on farmland as well as environmentally sensitive areas.

The Trust also promotes appreciation of the environment and its care. MET programs include Land Conservation, Monitoring and Stewardship, Local Land Trust Assistance, and the Keep Maryland Beautiful Grants Program.

Maryland's Rural Legacy Program

Maryland's Rural Legacy Program (RLP) was created within Maryland DNR to preserve large blocks of working rural lands for future generations. The Program established in 1997 and funded each year through the Maryland General Assembly, protects natural, cultural, agricultural, and forest land statewide by granting funds to local governments and land trusts, to conserve land through easement and fee purchases within designated rural legacy areas. Local jurisdictions are encouraged to competitively apply for funds to complement existing land preservation efforts or to develop new preservation areas. Easements or fee estate purchases are sought from willing landowners in order to protect areas vulnerable to sprawl development that can weaken the natural resources of an area, thereby reducing the economic value of farming, forestry, recreation and tourism. Rural Legacy Areas help to preserve contiguous tracts of land, often consisting of multiple parcels of meadow and agricultural lands. Currently there are 31 Rural Legacy Areas throughout the State of Maryland of which two Rural Legacy Areas exist within Queen Anne's County.

Deed-Restricted Open Space

The Queen Anne's County Land Use and Development Code includes subdivision techniques that require clustering of development on a portion of the property and deed restriction as open space on a portion of the property to support the development proposed. The open space covenants are recorded in the land records.

Non-Contiguous Open Space

Since 1987, Queen Anne's County Land Use and Development code has included a provision that allows lands zoned Agricultural (AG) and Countryside (CS) to utilize the non-contiguous subdivision technique. A land owner or groups of landowners whose lots are in the same zoning district but not contiguous physically, may file a development plan in the same manner as the owner of a single lot. The minimum open space for the developed parcel is 50% and open space ratio for the appropriate district applies to all lands within the development plan. The regulations allow only two phases of non-contiguous development to occur within a specific development proposal.

Cluster Subdivision Technique

The Cluster Subdivision Technique is intended to protect agricultural land by requiring a ratio of open space dedicated for preservation to a certain amount of land available for development. In the rural and agricultural areas the ratio is 85% open space to 15% developable area. A Cluster subdivision requires that 85% open space to be placed in an easement and the nature of the property is deed-restricted.

In addition to these land preservation programs, Queen Anne's County has worked with Maryland's Program Open Space to protect properties that contain agricultural lands, as well as important natural resources. Other Federal and State conservation programs and tools that have been utilized to preserve open space in Queen Anne's County include:

- *Conservation Reserve Enhancement Easements (CREP);*
- *Conservation Reserve Program (CRP);*
- *State Forest Conservation Act; and*
- *Dept. of the Interior National Parks Service – Land & Water Conservation Fund*.

Figure SIV- 5

Land in Farms 2012 – Upper Eastern Shore

County	No. of Farms	Land in Farms
Queen Anne's	521	156,941 ac
Kent	367	133,201 ac
Caroline	658	150,201 ac
Talbot	328	119,481 ac
Cecil	496	76,667 ac

2012 MD Agricultural Census Data

Since 2003 to present, Queen Anne's County has spent more than $25 million for the purpose of preserving land through MALPF and the Rural Legacy preservation programs alone. A diverse group of organizations and agencies contribute to agricultural land preservation in Queen Anne's County. Both direct protection of private agricultural lands through conservation easement acquisition, and economic development support of the farming industry are equally significant in the County. Placing conservation easements on private land from willing owners has been the chief mechanism for protecting agricultural lands in Queen Anne's County. The majority of these easements have been purchased through Rural Legacy and MALPF programs with the State of Maryland providing the majority of the funding with local funds generated from several sources used to match State dollars. The County contributes local tax dollars to staffing and easement purchase, as well as enforcing land use and right to farm regulations.

In May, 2017, utilizing state grants and matching funds, Queen Anne's County Commissioners voted to allocate about $500,000 of county earmarked funds which will result in a total of $2 ½ million to preserve farmland in the county. The Maryland Agricultural Land Preservation Foundation (MALPF) matches each County dollar with two state dollars. The MALPF purchases agricultural preservation easements that forever restrict development on prime farmland and woodland and has permanently preserved land in Maryland.

As reported in the Maryland Agricultural Land Preservation Foundation FY 2017 Annual Report, Queen Anne's County (as of June 2017) had a total number of 169 agricultural preservation easements acquired; resulting in 9.54 % of the total number of State easements. Queen Anne's County ranks third in the State for agricultural land preservation, just behind Carroll County (14.19%) and Caroline County (10.67%).

Benefits of Agricultural Land Preservation

The rural agricultural land use preservation strategy focuses on creating a strong, sustainable rural community, full of diverse agricultural opportunities and a wide array of agricultural alternatives: promoting and protecting agriculture through rural preservation that sustains rural values and lifestyles; maintaining the rural character of small towns, country roads and open spaces; retaining and protecting productive farmlands, historic farmsteads, coastal marsh and forested land and pristine landscapes throughout the county, and advancing specialty farming industries and markets.

Queen Anne's County has some of the most productive agricultural lands in the State and a long history of agricultural productivity. The farming community of Queen Anne's County is highly respected on the national level for the reasons noted above and for the major contribution to the local economy. The approach to preservation of priority lands is to send growth to the designated growth areas and towns and to support the infrastructure needed for those areas to accept growth.

Figure SIV-6

County Goals for Agricultural Land Preservation

(from the 2010 Comprehensive Plan, updated to include 2017 Department of Parks Goals)

1. *Agricultural Preservation: Support and sustain a strong, diversified agricultural community through implementation of preservation and development mechanisms such as economic incentives that are equitable to all stakeholders. Preserve at least 80% of the undeveloped land within the designated Priority Preservation Areas with the intent of preserving a total of 100,000acres by 2030.*

   Objective 1: Establish reliable resources for agricultural land preservation and gain significant local support in conjunction with State agricultural land preservation decisions.

   Objective 2: Establish Priority Preservation Areas (PPA) that target appropriate acres of the County's agricultural lands.

   Objective 3: Protect and preserve agricultural land and deed- restricted open space.

2. *Resource Conservation/Preservation and Environmental Protection through Sustainable Smart Growth Management Policies.*

   Objective 1: Continue to achieve the preservation of 85% deed- restricted open space when using cluster development techniques on agricultural lands.

   Objective 2: Encourage Sustainable Smart Growth Management approaches.

   Objective 3: Promote the protection and preservation of forest lands.

3. Awareness, Education and Funding

   Objective 1: Continue to garner local support for agricultural land preservation.

4. Work together with all taxing jurisdictions to increase the financial incentives to preserve farmland.

   Objective 1: County and other taxing authorities should work together to increase financial incentives that may encourage landowners to preserve land.

According to the County's MALPF Certification Goal - at an anticipated rate of 1, 545 acres/year, a total of 100,000 acres would be preserved by 2030, provided there are sufficient funds to purchase permanent easements augmented by other preservation tools and mechanisms to achieve this goal.

In order to achieve this goal, an implementation strategy must be developed to preserve 80% of the remaining undeveloped and unencumbered lands contained within the Priority Preservation Area (PPA). Further consideration must be given to encouragement of the use of

various preservation techniques utilized with development of rural agricultural areas, such as cluster development and the accompanying creation of deed restricted open space, as well as Purchase of Development Rights (PDAs) and development through the Transfer of Development Rights (TDRs).

Accomplishments of Local Agricultural Preservation

Accomplishments of Queen Anne's County's agricultural preservation efforts include:

- *62% of the County's acreage consists of farms,*
- *38% pf the County's total land area has been preserved,*
- *Queen Anne's County is home to two Rural Legacy Areas: Land's End and Foreman's Branch*
- *The County is a major producer of local agricultural products including soy beans and corn, and*
- *The agricultural base of Queen Anne's County is a major contributor to the local economy.*

Challenges in achieving agricultural land preservation goals include: insufficient funding available to take advantage of opportunities for preservation; undeveloped lands within current areas to which transfer development rights can be received (as within Planning Areas) are not proportionate to the number of available development rights that could be transferred from Agricultural (AG) and Countryside (CS) zoned properties.

Preserved agricultural land in Queen Anne's County

Inventory of Agricultural Land Preservation

Queen Anne's County documents existing agricultural land preservation in the county by way of mapping. Protected natural resource lands may be found on various maps provided in the following section of this report. All lands including MALPF, Greenprint, Rural Legacy, MET, TDR Sending Areas, CREP Easement, Non-Contiguous Opens Space, Deed Restricted Opens Space, County owned Parks, State owned lands and Incorporated Towns can all be found on the map titled ***Conservation Lands – 2017.***

Queen Anne's County Farm – photo courtesy of R. Gunter

MALPF Certified Strategies & Actions

Queen Anne's County continues to address agricultural preservation in accordance with their MALPF Certification Goal. Provided there are sufficient funds available, and other preservation tools in place with which to purchase permanent easements, the County anticipates that the goal of 100,000 acres could be preserved by 2030. Agricultural land preservation strategies that have been implemented since the 2012 LPPRP include, but not limited to:

- Purchase of easements through MALPF
- Purchase of easements through Rural Legacy Program
- Cluster Development Technique
- CRP and CREP easement programs.

Agricultural preservation programs that have been used to a lesser degree in the County include the County's Transfer of Development Rights Program, Non- Contiguous Open Space, and the Cluster Development technique. Perhaps the reason for little use of these programs has been the results of the SB236 which resulted in the County adopting an ordinance to allow

a maximum of seven residential lots permitted in areas where public sewer is not available. This threshold coupled with the cost of providing infrastructure such a private wells and septic have resulted in little development proposed in outlying areas.

Mapping Agricultural Preservation Lands

The following maps illustrate and convey the following information relating to agricultural preservation and conservation in Queen Anne's County:

AG Map – ***Conservation Lands*** *– Map depicting Preservation/Conservation Lands and Deed Restricted Open Space identified by Program*

AG Map – ***Rural Legacy Areas and Priority Preservation Areas –*** *Map depicting Queen Anne's County two Rural Legacy Areas.*

AG Map – ***Priority Preservation Areas – 2010 –*** *Map created for the 2010 Comprehensive Plan depicting lands available for preservation and permanently preserved lands.*

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MALPF EASEMENTS

MALPF Easenents

FileNo	FedProg	FrmNm	NmLst	NmMddl	NmFrst	NmComp	Address	City	State	Zip	Map	Parcel	Parcel1	Acres	Notes	Clerk	Liber	Folio	Date
17-13-03	0		Collins	C	Therese		325 ROLLING BRIDGE RD	Centreville	MD	21617	53	2		523.95	22 ac. reservation	SM	2287	492	5/7/2014
17-13-07	0		Draper	H	Thomas		ONE THE SQUARE	Milton	DE	19968	54	39		272.00		SM	2286	82	5/6/2015
17-13-02	0		Glanding	E	Charles		210 Peters Corner Rd	Millington	MD	21651	7	15		84.86		SM	2269	68	3/5/2014
17-13-06	0		Dean		Howard		321 Roberts Station Rd	Church Hill	MD	21623	023	10	12,19	486.76		SM	2316	339	8/15/2014
17-13-01	0		Leager	C	James		200 Lloyds Meadow Ln	Queenstown	MD	21658	52	21		235.87		SM	2268	264	3/7/2014
17-06-86-12	0		Moore	Lee	Marvin		1630 Hope Rd	Centreville	MD	21617	46	5		218.38		MWM	305	480	4/28/1987
17-06-87-03	0		Moore	Franklin	Webster		308 Fogwell Rd	Centreville	MD	21617	46	26		248.56		MWM	319	876	4/3/1989
17-06-97-08A	0		Bramble	W	Homer		2313 Starr Rd.	Queen Anne	MD	21657	68	34		92.10		SM	774	92	12/26/2000
17-02-86-18	0	Hayden View	Morris	O	George		211 Clarks Corner Rd	Centreville	MD	21617	37	27		184.45		MWM	301	442	3/8/1988
17-01-00-04	1		Kinnamon	P	Dale		136 Kinnamon Lane	Sudlersville	MD	21668	13	7		125.81		SM	1293	282	8/17/2004
17-01-00-05A	0		Walls	S	Mary		921 Goldsboro Rd	Barclay	MD	21607	18	79		48.00	746	SM	1205	306	1/29/2004
17-01-00-08	0		Yater	F	Joseph		3401 Barclay Rd.	Marydel	MD	21649	26	13		100.00	GreenPrint	SM	911	219	4/25/2002
17-01-00-09	0		Smith	H	Ronald		140 Mar Del View Farm Ln	Sudlersville	MD	21668	14	11		121.87	GreenPrint	SM	986	277	11/15/2002
17-01-00-10	0		Smith	H	Ronald		140 Mar Del View Farm	Sudlersville	MD	21668	20	20		127.50		SM	1277	730	7/6/2004
17-06-09	0		Smith	Thomas	Ronald		2003 Busic Church Rd	Marydel	MD	21649	14	54		39.95		SM	1785	693	4/21/2008
17-01-00-12A	0		Lester		Richard		1095 Hollering Hill Rd	Wyoming	DE	19934	26	7		86.70		SM	1740	124	11/9/2007
17-01-01-02	1		Bostic	H	Richard		PO Box 33	Ingleside	MD	21644	24	18,99		178.74	Parcel 18 & 99	SM	1233	171	4/5/2004
17-01-90-13	0	Shallow Pond	Bostic	H	Richard		PO Box 33	Ingleside	MD	21644	24/31	**		310.87		SM	609	467	3/19/1998
17-01-01-06	0		Hayes	C	George		13906 Glen High Rd	Baldwin	MD	21013	19	57		104.00	GreenPrint	SM	1087	67	2/3/2003
17-01-83-02	0		Cole	J	Daniel		3216 Peters Corner Rd	Marydel	MD	21649	*	**		143.34	* Tax Map20 & 26, ** Parcels 13 & 12	MWM	246	527	12/19/1985
17-01-86-16	0	Canterwood	Stitely	N	Robert		408 Barclay Rd	Barclay	MD	21607	24	1		173.10		MWM	297	914	11/1/1987
17-01-86-17	0	Village View	Story	D	Charles		1709 Barclay Rd	Barclay	MD	21607	24	42		86.60		MWM	297	922	1/7/1987
17-01-88-08	0		Winterstein	L	William		118 Wintacre Farm Lane	Sudlersville	MD	21668	13	44		304.78		MWM	342	840	11/22/1989
17-07-87-01	0		Winterstein	L	William		118 Wintacre Farm Lane	Sudlersville	MD	21668	7	17		150.72		MWM	318	149	11/16/1988
17-01-86-22A	0		Winterstein	L	William		118 Wintacre Farm Lane	Sudlersville	MD	21668	13	43		98.56		MWM	342	848	11/22/1989
17-01-86-24	0		Winterstein	L	William		118 Wintcre Farm Lane	Sudlersville	MD	21668	13	1		216.72		MWM	322	60	1/26/1989
17-01-90-06	0	Oxdale Farm	Conover		Theodore		1507 Merrick Corner Rd.	Barclay	MD	21607	32	1		250.00		MWM	364	762	1/18/1991
17-01-90-09	0		Ferrell		Daniel		18289 Woodyard Rd	Barclay	MD	21607	32	17,26		189.43		SM	948	679	8/6/2002
17-01-90-10A	0		Palamatary	S	Janet		541 Ingleside Rd	Barclay	MD	21607	32	22		67.72		SM	960	736	9/16/2002
17-01-90-25	1	Tullahoma	Holland	W	Thomas		318 Brierly Mill Rd	Church Hill	MD	21623	24	82		208.14		SM	623	781	6/19/1998
17-01-91-04	0		Proud	W	Donald		5540 Sudlersville Rd	Sudlersville	MD	21668	13	21		106.60		SM	609	456	2/27/1998
17-01-94-02	0		Clark	W	John		300 Deer Track Lane	Sudlersville	MD	21668	19	pt41		174.00	Parcel is part of 41	SM	833	81	9/4/2001
17-01-94-01	0		Clark	W	John		300 Deer Track Lane	Sudlersville	MD	21668	19	pt 41		168.45	Parcel part of 41	SM	848	732	10/26/2001
17-01-95-04	1		Leager	W	Robert		162 Paceway Lane	Sudlersville	MD	21668	18	27		102.88		SM	733	295	5/15/2000
17-01-97-02	0		Ferrell		Eugene		18289 Woodyard Rd.	Barclay	MD	21607	32	4		137.12		SM	669	53	2/9/1999
17-01-97-03	0	Laurel Oak Farm	Bagley	B	Bruce		PO Box 295, Cosden Rd.	Sudlersville	MD	21668	18	18		31.58		SM	1131	300	8/13/2003
17-01-97-04	0		Elborn		William		1815 Barclay Rd.	Barclay	MD	21607	25	2		109.27		SM	740	520	6/1/2000
17-01-97-07	0		Walls	C	David		320 Cambridge Rd	Dover	DE	19934	18	8		123.00		SM	701	742	9/1/1999
17-01-97-09	0		Cronshaw	D	Edward		43 S. Prestwick Ct.	Dover	DE	19934	18	9,125		137.76		SM	684	442	6/14/1999
17-01-97-10A	1		Walls	S	Mary		921 Goldsboro Rd	Barclay	MD	21607	18	79		90.83		SM	746	248	7/24/2000
17-01-98-01	0	Rose Hill Farm	Walmsley	D	William		201 Pear Tree Point Rd	Chestertown	MD	21620	18	20		102.46		SM	950	511	8/21/2002
17-01-98-04A	0	The Other Place	Darling	A	Ernest		PO Box 94, 103 Maple Lane	Barclay	MD	21607	13	pt 45		50.00	Parcel part of 45	SM	1849	363	3/26/2009
17-01-98-05A	0		Smith	Ethel	D		12091 Knife Box Rd	Greensboro	MD	21639	13	pt 45		50.00		SM	1849	382	3/26/2009
17-01-99-10	0		Story	L	Sudler		PO Box 25, 1309 Goldsboro Rd	Barclay	MD	21607	19	39		152.96		SM	798	124	4/26/2001
17-02-02-01	0	Cedar Run	Dodd	H	Lewis		320 John Powell Rd	Sudlersville	MD	21168	17	6		97.00		SM	1513	660	1/23/2006
17-02-84-01	0	Double L Acres	Kinnamon	C	Lemuel		829 Murphy Rd	Centreville	MD	21617	31	25,26		305.97		MWM	299	10	1/12/1988
17-02-86-09	0		Brown		Betty		PO Box 154	Centreville	MD	21617	29	53		168.01		MWM	353	610	6/27/1990
17-02-85-01	0		Morris		Robert		1115 Rabbit Hill Rd	Church Hill	MD	21623	30	49,22		337.00		MWM	268	185	12/19/1986
17-02-86-13	0		Scott	B	Lynwood		201 Rolph's Wharf Rd	Chestertown	MD	21620	16	6		100.71		MWM	297	930	1/6/1988
17-02-86-14	0	Parsons Green Farm	MacGlashan		Elizabeth		PO Box 25	Church Hill	MD	21623	22	43		117.03		SM	530	6	4/23/1996
17-02-86-15	0		McDonald		Bryan		4531 S. Polling House Rd	Harwood	MD	20776	23	***		255.47	*** 1 of 2	MWM	292	104	9/11/1987
17-02-89-05A	0		Taylor	G	Joseph		160 Cherry Blossom Farm Lane	Church Hill	MD	21623	31	95		70.22		MWM	357	635	9/17/1990
17-02-89-06	0		Smith	L	David		211 Long Shot Farm Lane	Church Hill	MD	21623	29	6		150.67		MWM	356	848	8/14/1990
17-02-89-07	0		Warner	E	Robert		1418 Richardson Rd	Westminster	MD	21157	23	132		287.27		MWM	367	93	2/12/1991
17-02-89-09	0		Karbaum	J	Roland		PO Box 238	Church Hill	MD	21623	30	46		351.26		MWM	364	793	1/9/1991
17-02-88-06	0		Morris		Robert		1115 Rabbit Hill Rd	Church Hill	MD	21623	31	10		208.00		MWM	342	122	12/14/1989
17-02-89-03	0		Taylor	S	Sonia		160 Cherry Blossom Farm Lane	Church Hill	MD	21623	31	24		190.95		MWM	357	643	9/17/1990
17-02-89-04	0		Taylor	G	Joseph		160 Cherry Blossom Farm Lane	Church Hill	MD	21623	31	20		254.50		MWM	357	651	9/17/1990
17-02-89-09S1	0		Van Dyke		Robert		918 Washington Ave	Chestertown	MD	21620	30	46		23.46		MWM	364	793	1/9/1991
17-02-89-09S2	0		Heller		Daniel		16 Brubaker Valley Rd	Lititz	PA	17543	30	132		22.00		MWM	364	793	1/9/1991
17-02-91-05A	0		Brown		Betty		PO Box 154	Centreville	MD	21617	22	42		99.48		SM	512	342	11/6/1995
17-03-90-07	0		Patchett	D	Dorsey		200 New Manor Farm Lane	Church Hill	MD	21623	36	9		208.25		MWM	364	770	1/10/1991
17-02-91-06	0		Patchett	D	Dorsey		200 New Manor Farm Lane	Church Hill	MD	21623	23	22		293.87		SM	1066	646	4/17/2003
17-02-91-08	0	Donwaland Holsteins/ Wayne McFarland	McFarland	W	Donald		510 Seney Farm Lane	Church Hill	MD	21623	31	***		173.00	*** Part of 23	SM	1740	237	11/14/2007

17-02-91-09	0	Donwaland Hosteins/ Wayne McFarland	McFarland	W	Donald		510 Seney Farm Lane	Church Hill	MD	21623	31	***		172.00	*** Part of 23	SM	1751	454	12/27/2007
17-02-99-03	0	Peacock Farm	Embert	E	Margaret		PO Box 86	Church Hill	MD	21623	17	25		219.91		SM	1003	636	12/12/2002
17-02-99-04	0	Towsend Farm	Embert	E	Margaret		PO Box 86	Church Hill	MD	21623	17	15		170.53		SM	858	569	11/28/2001
17-02-99-09	0	New Hope Farm	Sheubrooks	A	Larry		140 Locust Grove Farm Lane	Centreville	MD	21617	23	11		185.00		SM	856	36	11/20/2001
17-03-82-04A	0		Sheubrooks	Larry	A		140 Locust Grove Farm Lane	Centreville	MD	21617	43/81	93		213.00		SM	1726	326	9/26/2007
17-03-93-06	0		Potter	M	Thomas		160 Little Eagle Farm Lane	Centreville	MD	21617	53	4		101.54		SM	609	442	3/20/1998
17-03-82-04Bs2	0		Rhodes	C	Temple		180 Chestnut Vale Farm Lane	Centreville	MD	21617	43	21		157.84		SM	856	48	11/19/2001
17-82-03	0	Chestnut Manor	Rhodes	Temple	C.		164 Chestnut Manor Farm Ln	Centreville	MD	21617	52	9		169.28		SM	1935	162	3/22/2010
17-08-08	0		Rhodes	Temple	C.		2041 4-H Park Rd	Centreville	MD	21617	44	13		99.49		SM	1935	137	3/22/2010
17-03-82-04Bs1	0		Rhodes	C	Temple		180 Chestnut Vale Farm Lane	Centreville	MD	21617	43	9		293.49		SM	1726	71	9/25/2007
17-02-99-13	0		Burgess	D	Bruce		1189 Roberts Station Rd	Church Hill	MD	21623	23	29		154.00		SM	800	454	4/27/2001
17-03-00-02	0		Hatfield	H	Grace		10057 Perkins Hill Rd	Chestertown	MD	21620	52	10		262.74		SM	898	647	3/22/2002
17-03-00-01	0		Hatfield	H	Grace		10057 Perkins Mill Rd	Chestertown	MD	21620	52	8		211.06		SM	898	662	3/22/2002
17-06-98-02A	0		Leager	L	Donald		100 Clark Corners Rd	Centreville	MD	21617	37	40		56.17		SM	821	598	7/13/2001
17-03-00-06A	1		Leager	M	Louise		529 Lieby Rd	Church Hill	MD	21623	29	27		25.00		SM	1260	441	6/3/2004
17-03-02	0		Denny		Walter		P.O. Box 63	Wye Mills	MD	21679	62	5		163.00		SM	1745	609	12/6/2007
17-03-02-02	0	Content Farm	Babe	A	Kurt		PO Box 567, Hope Rd	Centreville	MD	21617	45	20		94.57		SM	1512	610	1/27/2006
17-03-81-01	0	Peace and Plenty	Covington		Henry		2030 Centreville Rd	Centreville	MD	21617	52	4		189.00	See also SM 2324 P 39 & SM 2324 P 58	MWM	208	413	2/2/1984
17-03-86-03	0		Hicks		Elbert		107 Brown St	Centreville	MD	21617	29	25		154.00		MWM	342	116	11/27/1989
17-03-86-06	0		Brown		Betty		PO Box 154	Centreville	MD	21617	28	38		178.44		MWM	337	500	10/16/1989
17-03-86-19	0	Clannihan Shop Farm	Wood	Louise	Emma		109 Central Dr	Chestertown	MD	21620	29	28		99.70		SM	628	713	6/23/1998
17-07-05	0		Clark	M	David		1709 Roberts Station Rd.	Church Hill	MD	21623	31	2		150.00		SM	1942	25	4/23/2010
17-03-86-20	0	Holton Farm	Clark	M	David		425 Spider Web Rd	Centreville	MD	21617	43	45		145.23		MWM	291	40	9/22/1987
17-03-86-21	0	Charfield Farm	Clark	M	David		425 Spider Web Rd	Centreville	MD	21617	34	50		228.32		SM	517	330	12/18/1995
17-03-87-04	0		Sultenfuss	A	Mark		710 Starr Rd	Centreville	MD	21617	53	8		178.95		MWM	348	557	1/22/1990
17-03-89-01	0		Gambriel	A	Wallace		PO Box 30	Barclay	MD	21607	61	17		118.82		MWM	356	840	8/17/1990
17-03-89-08	0		Miles	Paul	Webster		1552 Grange Hall Rd	Centreville	MD	21617	61	7,8		211.23		MWM	368	766	4/8/1991
17-03-90-01C	0		Lane	B	Alvin		810 Brick School House Rd	Centreville	MD	21617	29	102		12.85	Amended SM 2033 P 283	MWM	364	754	1/17/1991
17-03-90-01B	0		Putman	C	Wayne		702 Brick School House Rd	Centreville	MD	21617	29	30		20.00		MWM	364	754	1/17/1991
17-03-90-01A	0		Handzo	Eric	John		710 Brick School House Rd	Centreville	MD	21617	29	107		60.69	Amended SM 2033 P 321	MWM	364	754	1/17/1991
17-03-90-11	0	Bachlor's Hope	Morris	P	Thomas		201 Bachelor's Hope Farm Lane	Centreville	MD	21617	44	14		135.65		MWM	636	755	9/2/1998
17-03-91-01	0		Leager	M	Louise		529 Lieby Rd	Church Hill	MD	21623	29	**		146.98	Part of 27 (1)	SM	562	970	3/5/1997
17-03-98-07	0		Cannon	M	Vernon		PO Box 73	Church Hill	MD	21623	28	50		122.91		SM	758	201	10/6/2000
17-03-98-08	1		Adams	D	John		200 Bordlington Farm Lane	Centreville	MD	21617	53	3		118.54	Part of 3	SM	751	227	8/29/2000
17-03-98-09	0		Adams	D	John		200 Bordlington Farm Lane	Centreville	MD	21617	53	3		115.00	Part of 3	SM	813	154	6/19/2001
17-03-99-05	0	Quail Hollow Farm	Dulin	R	John		1128 Hope Rd	Centreville	MD	21617	45	21		213.21		SM	826	48	7/24/2001
17-06-01-08	0	Quail Hollow Farm	Dulin	R	John		1128 Hope Rd.	Centreville	MD	21617	45	13		159.79		SM	980	78	11/4/2002
17-06-01-07	0	Quail Hollow Farm	Dulin	R	John		1128 Hope Rd	Centreville	MD	21617	45	12		145.83		SM	980	92	11/4/2002
17-06-01	0		Dulin	J	Scott		826 Ruthsburg Rd	Centreville	MD	21617	45	25B		54.76		SM	1746	26	12/7/2007
17-03-99-12C	0	J C K Farms, LLC	Leager	C	James		200 Loyds Meadow Lane	Queenstown	MD	21658	29	31,10		192.27		SM	780	535	2/16/2001
17-04-86-26	0		Schulz		Jody		222 Schulz Lane	Chester	MD	21619	57	***		99.10	*** 466 & 478	MWM	300	142	2/25/1988
17-04-88-10C	0					Wye River Enterprises, Inc	PO Box 145	Grasonville	MD	21638	63	182		100.20		MWM	345	717	12/29/1989
17-04-88-11C	0					Wye River Enterprises, Inc	PO Box 145	Grasonville	MD	21638	63	31		108.43		MWM	345	728	1/11/1990
17-04-88-09C	0					Wye River Enterprises Inc	PO Box 145	Grasonville	MD	21638	63	**		377.88	** 23 & 181	MWM	346	202	3/16/1990
17-05-86-05	0		Dodd	W	Thomas		620 Tom Dodd Farm Lane	Queenstown	MD	21658	66	62		270.00		MWM	296	579	12/29/1987
17-05-88-05	0		Whitby	C	Mary		1121 Carmichael	Queenstown	MD	21658	66	11		216.76		MWM	337	508	9/22/1989
17-05-90-15	0	Mr. Hope Farm	Bauer	J	Edward		301 Mount Hope Farm Lane, PO Box 609	Grasonville	MD	21638	65	10		195.79		SM	515	763	12/19/1995
17-05-93-05	0		Carroll	L	John		515 Madison Ave., 32nd Floor	New York	NY	10022	43	31		201.00		SM	585	223	9/23/1997
17-05-93-09	0	Wright Farm	Whaley	C	Ralph		1620 Bloomingdale Rd	Queenstown	MD	21658	52	18		442.48		SM	527	604	4/9/1996
17-05-94-05	1	Cedar Dale	Whaley	C	Ralph		1620 Bloomingdale Rd	Queenstown	MD	21658	52	31		288.38		SM	599	678	1/13/1998
17-05-94-07	0		Dudley	H	William		161 Goose Landing Lane	Queenstown	MD	21658	52	19		160.76		SM	600	614	1/26/1998
17-05-94-06	0		Dudley	H	William		161 Goose Landing Lane	Queenstown	MD	21658	52	16,71		179.00	Parcels 16 & 71	SM	600	628	1/26/1998
17-06-91-13	0		Downes		Jim		3020 Price Station Rd	Centreville	MD	21619	47	1		118.00		MWM	1055	225	3/5/2003
17-06-02-03	0		Downes	M	Jay		12864 Crouse Mill Rd	Ridgely	MD	21660	55	1		52.00		SM	1337	266	10/13/2004
17-06-00-03	0		Downes	M	Jay		12864 Crouse Mill Rd	Ridgely	MD	21660	55	1		134.76		SM	897	169	3/18/2002
17-06-00-15	1		Kimbles	James	William		161 Kimstead Farm Lane	Centreville	MD	21617	38	12B		213.11		SM	1001	685	12/16/2002
17-06-99-01	0		Kimbles	B	John		705 Cox Sawmill Rd	Centreville	MD	21617	38	12A		157.74		SM	862	1	11/5/2001
17-06-00-14	0		Dean	Jean	Norma		830 Dean Rd.	Centreville	MD	21617	46	15		147.47		SM	861	746	11/8/2001
17-06-01-01A	0		LePore	A	Felice		PO Box 81, 313 Bear Pond	Templeville	MD	21670	26	8		91.00		SM	1230	423	3/11/2004
17-06-90-16	0	Coleraine Farm	Eaton	A	Harry		411 Horseshole Rd.	Queen Anne	MD	21657	69	10		121.53		SM	750	609	8/28/2000
17-06-01-05	0		Eaton	Austin	Harry		411 Horseshole Rd	Queen Anne	MD	21657	62	8		187.00		SM	1056	626	4/1/2003
17-06-01-09	0		Cook	T	Howard		604 Hayden Rd	Centreville	MD	21617	37	13		215.49		SM	944	278	7/31/2002
17-06-02	0		Elborn	William	O		1902 Barclay Rd.	Barclay	MD	21607	25	60		25.86		SM	1750	460	12/28/2007
17-06-02-05	1		Callahan	L	Brian		PO Box 98	Queen Anne	MD	21657	69	1		88.03		SM	1218	668	3/3/2004
17-06-02-06	1	Ashlyn Acres	Hickman	W	Dale		924 White Marsh Rd	Centreville	MD	21617	36	17		28.68		SM	1221	529	3/10/2004
17-06-02-07	1		Morris	O	George		211 Clarks Corner Rd	Centreville	MD	21617	36	70,71		137.75		SM	1297	374	8/30/2004
17-06-87-02	0		Warren	Downes	Albert		250 Bridgetown Rd	Henderson	MD	21640	47	6		168.85		MWM	317	405	11/14/1988
17-06-90-05C	0		Warren	Downes	Albert		250 Bridgetown Rd	Henderson	MD	21640	38	11		150.00		MWM	367	83	2/8/1991

17-06-90-04C	0		Warren	Downes	Albert		250 Bridgetown Rd	Henderson	MD	21640	47	**		197.67	** 12/ lot 1	MWM	393	225	10/25/1991
17-06-88-02	0		Sullivan	L	Sandra		402 Parkwood Dr	Salisbury	MD	21804	46	25		202.67		SM	1464	640	10/3/2005
17-06-88-03	0	Mary's Choice	Leager	L	Donald		100 Clarks Corner Rd	Centreville	MD	21617	37	3		154.31		MWM	361	842	11/29/1990
17-06-86-11	0	Starr Farm	Beaver		Frank		Hope Rd	Centreville	MD	21617	46	29		283.32		MWM	335	813	9/6/1989
17-06-88-07	0		Willis		Herbert		PO Box 122	Sudlersville	MD	21668	37	4		226.13		MWM	335	805	8/31/1989
17-06-89-02	0	Reading Farm	Cahall	S	Gladys		2620 Price Station Rd.	Centreville	MD	21617	37	23		171.28		MWM	364	747	9/26/1990
17-06-90-02	0		Claggett		Herschell		1391 Damsontown Rd.	Queen Anne	MD	21657	62	11		199.07		MWM	364	777	12/31/1990
17-06-90-03A	0		Claggett		Herschell		2208 Starr Rd	Queen Anne	MD	21657	62	63		75.38		MWM	364	785	12/31/1990
17-06-90-14	1		Lippy	H	Joseph		200 Lee's Mill Rd	Hampstead	MD	21071	38	9		252.83		SM	1224	515	1/21/2004
17-06-93-10	0		Wood	Victor	William		515 Neighbors Rd	Centreville	MD	21617	47	5		214.61		SM	719	523	12/22/1999
17-06-97-06A	0		Hollingsworth	M	Thomas		2224 Starr Rd	Queen Anne	MD	21657	68	12		80.35		SM	848	124	10/16/2001
17-06-98-11	0		Jackson		Hubert		PO Box 523	Chester	MD	21619	61	40		337.00		SM	739	164	6/14/2000
17-06-95-01A	0		Moore	J	Bradford		217 Fogwell Rd	Centreville	MD	21617	37	25		88.00		SM	723	440	3/6/2000
17-06-95-02	0		Moore	J	Bradford		217 Fogwell Rd	Centreville	MD	21617	37	35		98.86		SM	862	16	11/26/2001
17-06-95-06	0	Norwich Creek Farm	Bramble	W	Thomas		131 Barton Rd.	Queen Anne	MD	21657	68	13		213.75		SM	703	689	7/27/1999
17-06-99-15	0		Foster	D	Michael		420 College Drive, PO Box 222	Wye Mills	MD	21679	38	2		113.92		SM	788	220	3/9/2001
17-06-95-03	0		Rice	L	William		13650 Piccowaxen Creek Rd.	Newburg	MD	20664	38	23		97.99		SM	623	769	6/8/1998
17-07-00-07C	0	Pondtown Farm, LLC	Schultz	J	Edward		110 Goose Valley Fish Lane	Chestertown	MD	21620	11	57		138.00		SM	1359	166	2/2/2005
17-06-96-02C	0					Warren Family Farms	511 Bayberry Rd	Felton	DE	19943	38	pt 24		118.00		SM	693	414	8/13/1999
17-06-96-03C	0					Warren Family Farms	511 Bayberry Rd	Felton	DE	19943	38	pt 24		119.00		SM	690	596	7/16/1999
17-06-99-02	0		Wilson	E	Robert		425 White Marsh Rd	Centreville	MD	21617	36	19		305.29		SM	821	323	7/10/2001
17-06-97-11	0		Wood	V	William		515 Neighbors Rd	Centreville	MD	21617	61	27&32		146.79		SM	876	463	1/7/2002
17-06-99-06	0	Mulberry Hill Farm	Barton	H	James		111 Barton Rd	Queen Anne	MD	21657	69	3		161.06		SM	760	149	10/11/2000
17-13-05	0		Barton	Robert	J		2815 Starr Rd	Queen Anne	MD	21657	69	8	8	169.20		SM	2353	139	11/28/2014
17-08-10	0		Leaverton	R	Keith		4733 Wrights Mill Rd	Trappe	MD	21673	36	24		373.67		SM	1943	572	4/30/2010
17-08-02	0		Smith	M	Raymond		221 Peters Corner Rd	Millington	MD	21651	7	14		131.85		SM	2108	99	5/24/2012
17-07-00-13	0	Hiortdahl Farm	Hiortdahl	C	John		120 Hiortdahl Farm Lane	Chestertown	MD	21620	11	9		168.96		SM	974	457	9/25/2002
17-15-02	0		Bostic	K	Laura		601 Higman Mill Rd	Sudlersville	MD	21668	6	50	3	274.60		SM	2576	162	8/26/2016
17-15-04	0		Cannon	M	John		184 Stowman Farm Ln	Centreville	MD	21617	45	23	1	138.61		SM	2559	28	7/8/2016
17-15-05	0					Connolly Farms LLC	210 Kingdale Farm Ln	Queen Anne	MD	21657	68	14		147.96		SM	2648	96	2/21/2017
17-15-06	0					Hambleton Creek Farm, Inc.	301 Pond Ln	Chestertown	MD	21620	10	29		244.96		SM	2502	184	1/20/2016
17-15-07	0		Hastings	C	James		404 Owens Rd	Queen Anne	MD	21657	68	35		198.05		SM	2671	183	3/22/2017
17-99-19	0		Staver	W	Kenneth		3121 Price Station Rd	Centreville	MD	21617	47	6		155.30		SM	1617	319	11/7/2006
17-99-08	0		Anders	R.	Donald	Anders Brothers Partnership		Centreville	MD	21617	53	15		270.83	MALPF Easement on entire parcel including NCD area	SM	1403	436	3/22/2005
17-90-17	0		Appenzeller	Austin	Charles		320 Higman Mill Rd	Sudlersville	MD	21668	7	25		196.00	GreenPrint	SM	1045	389	3/7/2003
17-11-01	0		Moore	A	William		507 Crouse Mill Rd	Queen Anne	MD	21657	62	14		178.24		SM	2101	84	4/17/2012
17-09-03	0					CAMPBELL MARYLAND FARM LLC		Centreville	MD	21617	46	28		200.00		SM	2083	625	2/15/2012
17-09-04	0		Higgins	P	William		P.O. Box 290	Centreville	MD	21617	37	29		26.45		SM	1858	392	7/13/2010
17-09-02	0		Roe	M.D.	William	Roe's Wildwood Farm, LLC	2545 Price Station Rd	Centreville	MD	21617	37	22		256.49		SM	1948	447	3/13/2010
17-08-11	0	Wye Farm	Senecal	T	Sarah	Wye Farm, LLC	190 Emory Farm Ln	Queenstown	MD	21658	60	12,34		436.21	Parcels 12 & 34	SM	1821	520	11/12/2008
17-86-04s2	0		Green	E	Virginia		3551 Goldsboro Rd	Henderson	MD	21640	39	1		58.90		MWM	298	144	1/22/1987
17-86-04s	0		Elliott-Rossing	E	Faith		3601 Goldsboro Rd	Hnderson	MD	21640	39	4		10.99		MWM	298	144	1/22/1987
17-86-04s1	0		Green	E	Virginia		3551 Goldsboro Rd	Henderson	MD	21640	39	8		63.64		MWM	298	144	1/22/1998
17-86-04s3	0		Green	E	Virginia		3551 Goldsboro Rd	Henderson	MD	21640	39	1		63.64		MWM	298	144	1/22/1998

CREP Easements

Name	Map	Parcel	Lot	Acres	PltLiber	PltFolio	Year	DeedClerk	DeedLiber	DeedFolio	Date	TaxID
R. H. Properties Partnership	25	31	0	76.50	31	26	2002	SM	929	629	4/23/2002	1801005812
Dean, John	22	14	1	64.17	33	66	2003	SM	1179	508	11/17/2003	1802010240
Massey, Norman and Mary Ann	67	9	0	17.27	42	30	2010	SM	1998	528	12/29/2010	1803009114
Redman, Ian	13	46	0	28.22	42	23	2010	SM	2000	25	1/7/2011	1801003909
Jarrell, William and Heather	37	16	1	72.33	42	24	2010	SM	1997	738	12/29/2010	1806000401
Puckett, Louise and Porter, Wanda	24	187	0	31.27	42	22	2010	SM	1996	81	12/29/2010	1801012606
Biophilia Foundation	6	52	2	171.42	42	31	2010	SM	1995	710	12/17/2010	1801005332
R. H. Properties Partnership	25	30	0	75.10	31	26	2002	SM	929	629	4/23/2002	1801005804
Bailey, Jack and Jane	20	1	0	32.00	43	05	2012	SM	2100	669	5/1/2012	1801007629

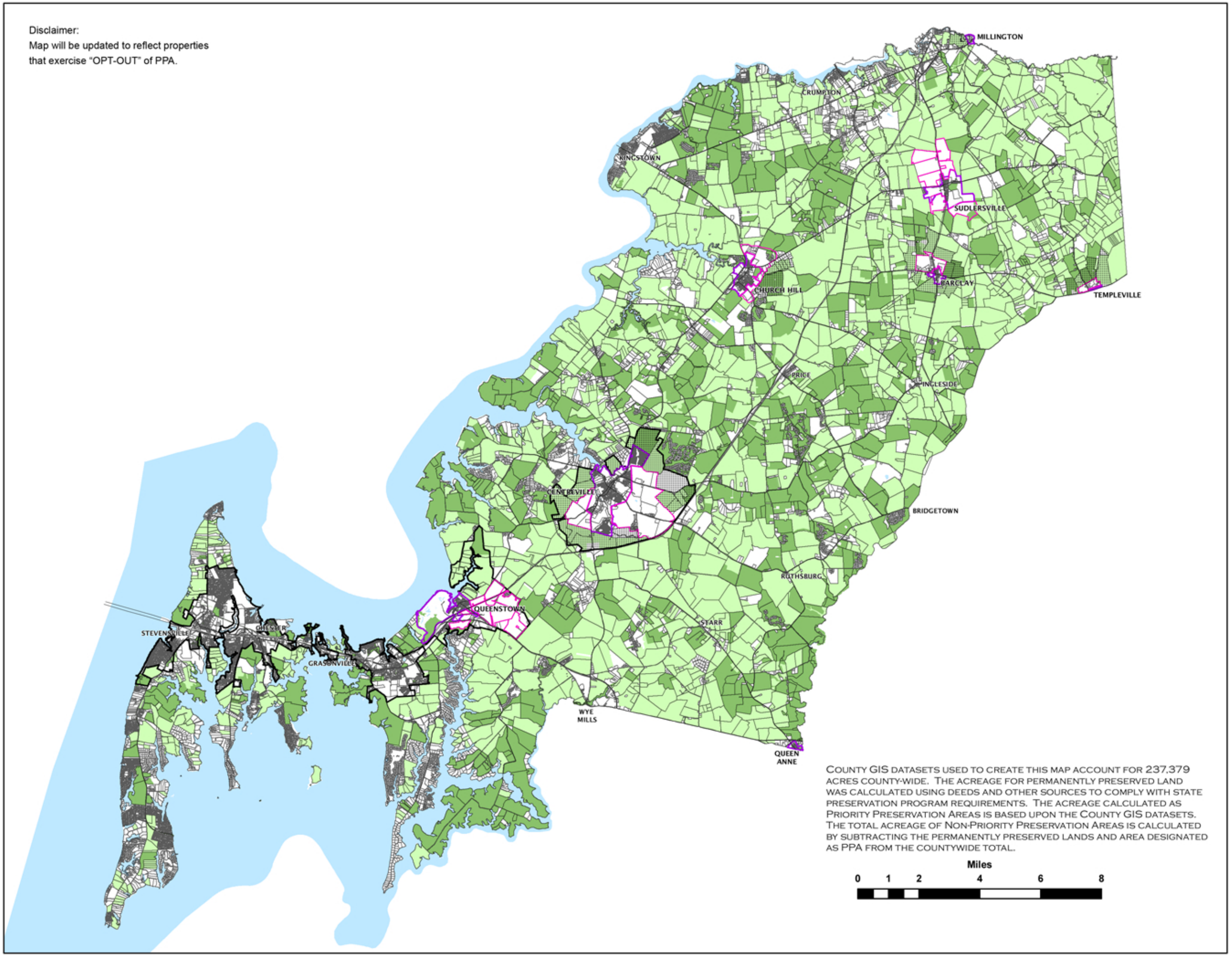
CREP Easements

Name	Map	Parcel	Lot	Acres	PltLiber	PltFolio	Year	DeedClerk	DeedLiber	DeedFolio	Date	TaxID
R. H. Properties Partnership	25	31	0	76.50	31	26	2002	SM	929	629	4/23/2002	1801005812
Dean, John	22	14	1	64.17	33	66	2003	SM	1179	508	11/17/2003	1802010240
Massey, Norman and Mary Ann	67	9	0	17.27	42	30	2010	SM	1998	528	12/29/2010	1803009114
Redman, Ian	13	46	0	28.22	42	23	2010	SM	2000	25	1/7/2011	1801003909
Jarrell, William and Heather	37	16	1	72.33	42	24	2010	SM	1997	738	12/29/2010	1806000401
Puckett, Louise and Porter, Wanda	24	187	0	31.27	42	22	2010	SM	1996	81	12/29/2010	1801012606
Biophilia Foundation	6	52	2	171.42	42	31	2010	SM	1995	710	12/17/2010	1801005332
R. H. Properties Partnership	25	30	0	75.10	31	26	2002	SM	929	629	4/23/2002	1801005804
Bailey, Jack and Jane	20	1	0	32.00	43	05	2012	SM	2100	669	5/1/2012	1801007629

Rural Legacy Easements

RLAID	RLA	Acres	Map	Parcel	Date	Clerk	Liber	Folio	TaxID	Name
1	Lands End Rural Legacy Area	218.69	2	1	1/14/2008	SM	1754	579	1803003264	Hawes
2	Foreman Branch Rural Legacy Area	210.82	17	5	11/7/2001	SM	852	309	1802011905	Grasslands Plantation, Inc.
3	Foreman Branch Rural Legacy Area	611.30	11	166	11/7/2001	SM	852	309	1807019262	Grasslands Plantation, Inc.
4	Foreman Branch Rural Legacy Area	569.68	11	56	11/7/2001	SM	852	309	1807008775	Grasslands Plantation, Inc.
5	Foreman Branch Rural Legacy Area	712.60	10	3	11/7/2001	SM	852	309	1807008643	Grasslands Plantation, Inc.
6	Foreman Branch Rural Legacy Area	91.45	10	167	11/7/2001	SM	852	309	1807019335	Grasslands Plantation, Inc.
7	Foreman Branch Rural Legacy Area	161.26	10	107	11/7/2001	SM	852	309	1807019300	Grasslands Plantation, Inc.
9	Foreman Branch Rural Legacy Area	344.37	10	106	11/7/2001	SM	852	309	1807019270	Grasslands Plantation, Inc.
10	Foreman Branch Rural Legacy Area	228.80	10	109	11/7/2001	SM	852	309	1807019688	Grasslands Plantation, Inc.
11	Foreman Branch Rural Legacy Area	298.71	10	104	11/7/2001	SM	852	309	1807019505	Grasslands Plantation, Inc.
12	Foreman Branch Rural Legacy Area	494.91	4	104	11/7/2001	SM	852	309	1807019491	Grasslands Plantation, Inc.
13	Foreman Branch Rural Legacy Area	111.13	4	107	11/7/2001	SM	852	309	1807019637	Grasslands Plantation, Inc.
14	Foreman Branch Rural Legacy Area	177.38	4	2	11/7/2001	SM	852	309	1807008910	Grasslands Plantation, Inc.
15	Foreman Branch Rural Legacy Area	177.02	4	109	11/7/2001	SM	852	309	1807019521	Grasslands Plantation, Inc.
16	Foreman Branch Rural Legacy Area	174.87	4	106	11/7/2001	SM	852	309	1807019408	Grasslands Plantation, Inc.
17	Foreman Branch Rural Legacy Area	415.32	4	109	11/7/2001	SM	852	309	1807019378	Grasslands Plantation, Inc.
18	Foreman Branch Rural Legacy Area	174.83	11	8	9/12/2008	SM	1812	281	1807009569	Stevens
19	Foreman Branch Rural Legacy Area	229.30	11	11	12/17/2009	SM	1919	213	1807007523	Patterson
20	Lands End Rural Legacy Area	47.62	15	3	12/17/2009	SM	1917	36	1803029956	Reed
21	Lands End Rural Legacy Area	47.78	15	6	12/17/2009	SM	1917	10	1803029948	Reed
22	Foreman Branch Rural Legacy Area	163.65	11	66	3/25/2010	SM	1936	472	1807009593	Stevens
23	Foreman Branch Rural Legacy Area	174.97	11	63	7/7/2010	SM	1956	712	1807010362	Hutton
24	Foreman Branch Rural Legacy Area	152.03	11	74	8/6/2010	SM	1963	322	1807009585	Stevens
25	Lands End Rural Legacy Area	114.48	21	25	5/20/2011	SM	2027	554	1803019586	Reed
26	Foreman Branch Rural Legacy Area	237.51	11	145	7/27/2011	SM	2038	522	1807006187	Hutton
27	Foreman Branch Rural Legacy Area	74.01	17	8	5/22/2012	SM	2107	81	1802001454	Cooper
28	Lands End Rural Legacy Area	132.00	21	12	11/23/2015	SM	2484	164	1803008916	Waterman Family Trust

Disclaimer:
Map will be updated to reflect properties that exercise "OPT-OUT" of PPA.



County GIS datasets used to create this map account for 237,379 acres county-wide. The acreage for permanently preserved land was calculated using deeds and other sources to comply with state preservation program requirements. The acreage calculated as Priority Preservation Areas is based upon the County GIS datasets. The total acreage of Non-Priority Preservation Areas is calculated by subtracting the permanently preserved lands and area designated as PPA from the countywide total.

Miles
0 1 2 4 6 8

Queen Anne's County
Comprehensive Plan Update

Maryland

Priority Preservation Areas

Legend
- County Boundary
- Roadways
- Parcels
- Town Future Annexation Areas
- Incorporated Towns
- County / Town Planning Areas
- Greenbelts
- Permanently Preserved Lands
- Priority Preservation Areas*
- Non-Priority Preservation Areas**
- Water

Notes:
*Priority Preservation Areas do not include existing permanently preserved lands.

Permanently Preserved Land: 69,093 acres

Total area designated as Priority Preservation Area (PPA): 119,004 acres

PPA Preservation Goal (80 percent of lands available for preservation): 95,203 acres

**Non-Priority Preservation Areas:
49,282 acres
Areas Include:
- Planning areas, incorporated Town Boundaries and future annexation areas;
- Common areas within subdivisions;
- Public and private properties exempt from taxes such as churches and schools;
- Major and minor subdivision approved from January 2002 to April 2009;
- Lots that are less than or equal to 5 acres;
- Lots improved with a residence 20 acres or less; and
- All properties not zoned Agriculture and Countryside.

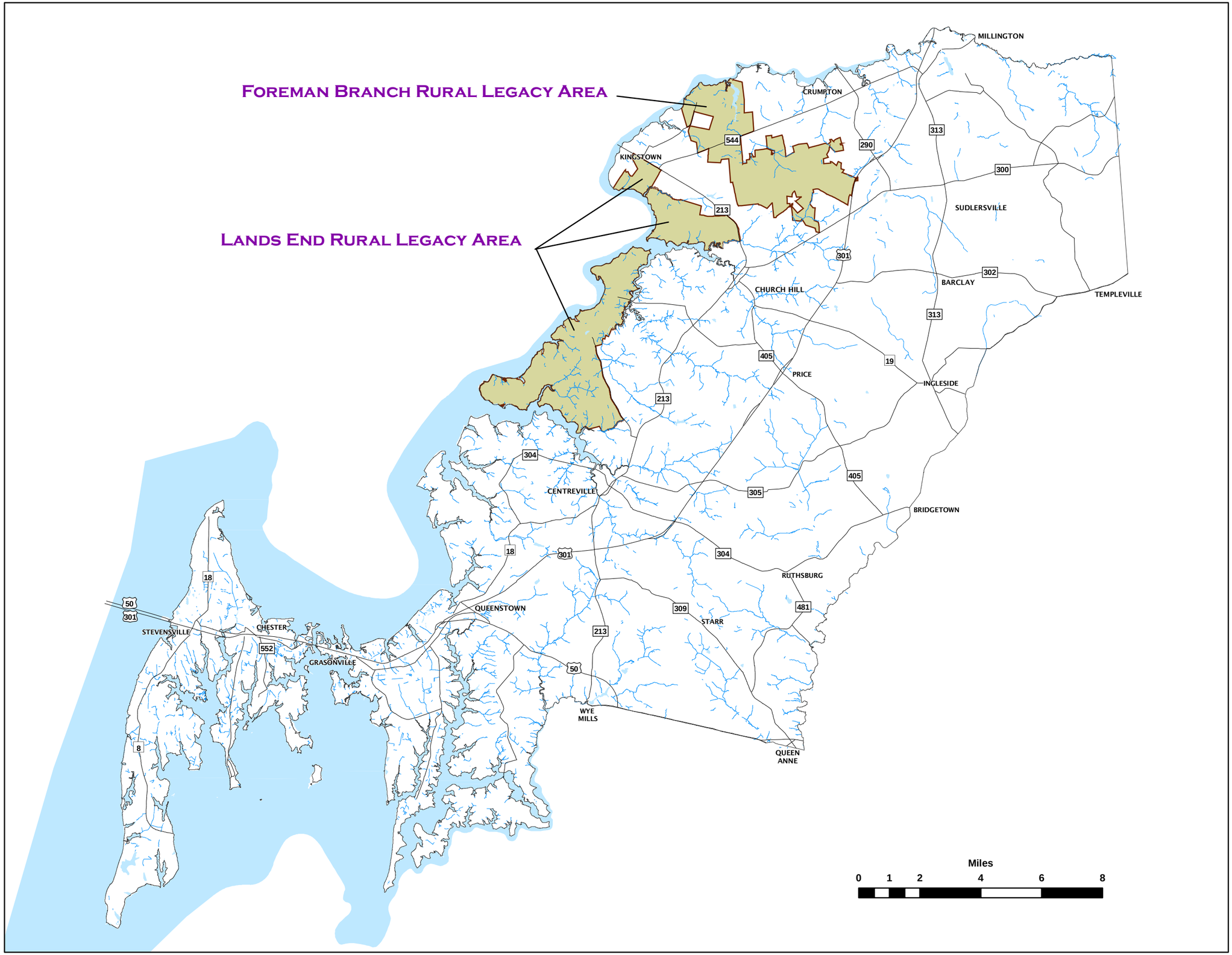
Source: Maryland Department of Planning, Queen Anne's County Department of Land Use, Growth Management & Environment (LGE). Satellite Imagery 2007-2008, and 2010 Tax Parcels as compiled by LGE.

March 2010

MAP ESA-10

Queen Anne's County
Comprehensive Plan Update

Maryland



Rural Legacy Areas & Priority Preservation Areas 2008

Legend
- County Boundary
- Roadways
- Waterways
- Water
- Priority Preservation Areas

Priority Preservation Areas as of September 2008.

The Rural Legacy Areas are designated in a competitive process for grants to purchase conservation easements (and occasionally fee-simple purchases of land) that build on other public and private land protection efforts.

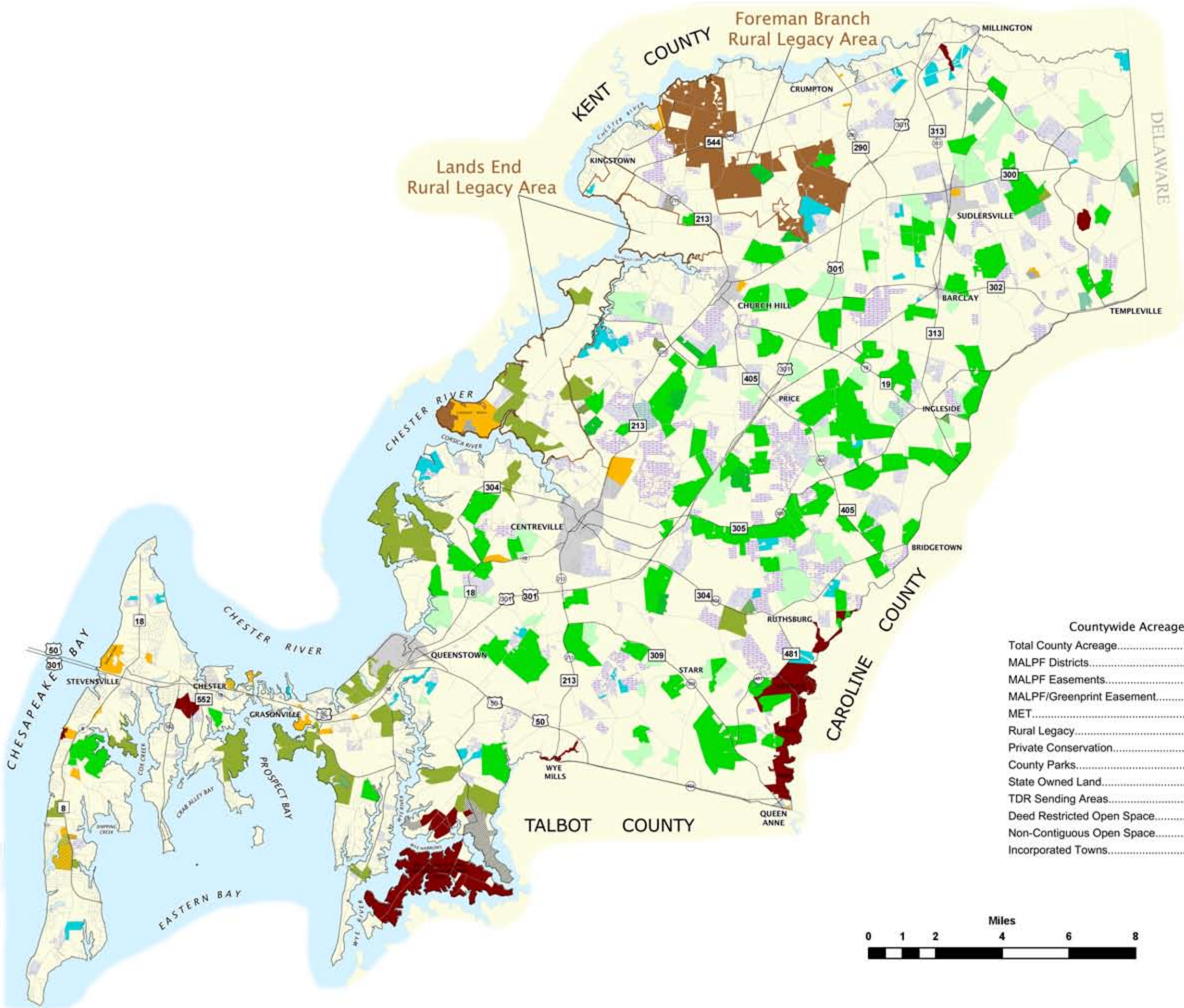
Note: in 2008 the Rural Legacy Areas were designated as Queen Anne's County's Priority Preservation Areas.

Source: Queen Anne's County Department of Land Use, Growth Management & Environment, Maryland Department of Planning, and Maryland Department of Natural Resources.

March 2010

MAP ESA-9

Queen Anne's County
Comprehensive Plan Update



Conservation Lands

Legend

- MALPF Districts — 63 Properties
- MALPF Easement — 144 Properties
- MALPF Greenprint — 4 Properties
- MET — 45 Properties
- Rural Legacy Easement
- Rural Legacy Areas
- TDR Sending Areas — 48 Properties
- Open Space (Non Contigous)
- Open Space (Deed Restricted)
- Private Conservation Easement
- County Park
- State Owned Lands
- Incorporated Towns

MALPF - Maryland Agricultural Land Preservation Foundation
MET - Maryland Environmental Trust
TDR - Transfer of Development Rights

Note: Conservation Lands are bases on April 2009 data.

Countywide Acreage

Total County Acreage	238337
MALPF Districts	9754
MALPF Easements	23445
MALPF/Greenprint Easement	519
MET	8254
Rural Legacy	5405
Private Conservation	1061
County Parks	2409
State Owned Land	5356
TDR Sending Areas	2664
Deed Restricted Open Space	11421
Non-Contiguous Open Space	8559
Incorporated Towns	3734

Source: Queen Anne's County Department of Land Use, Growth Management & Environment.

March 2010

MAP ESA-8

APPENDIX A

Parks Needs Assessment Survey Questions

1. Of the following types of park facilities and areas, please indicate whether your personal needs are met, not met, or not needed.

	Needs Are Met	Needs Are Not Met	Not Needed
Boating Ramps			
Kayak Launches			
Fishing Piers			
Fishing Shorelines			
Multi-use Sports Fields			
Golf Facilities			
Tennis Courts			
Basketball Courts			
Volleyball Courts			
Water View Areas			
Swimming Beaches			
Picnic Shelters/Pavilions			
Playgrounds			
Restrooms			
Outdoor Fitness Equipment			
Community Centers			
Dog Parks/Leash Free Areas			
Community Gathering Spaces/Event Spaces			
Bike Trails			
Walking Trails			
Developed Neighborhood Parks			
Gardening Areas			
Nature Preserves			
Swimming Pools/Aquatic Facilities			
Historic Sites			

Other/Comments (please specify and indicate whether needs are met, not met, or not needed for each type of facility/areas indicated.)

2. Of the following types of programs and services, please indicate if your personal needs are met.

	Needs Are Met	Needs Are Not Met	Not Needed
Individual Sports			
Early Childhood Programs (age 0 to 5)			
Youth Activities (age 6 to 11)			
Teen Activities (age 12 to 17)			
Adult Activities (age 18 to 65)			
Senior Activities			
Tournaments			
Performing/Visual Arts			
Special Events/Seasonal Festivals			
Health/Fitness			
Summer Day Camps			
Sports/Specialty Camps			
Outdoor Concerts/Movies			
Organized team Sports- Adult			
Organized team Sports- Youth			
Water Activities (Paddle-boarding, Surfing, Kayaking, Sailing, etc.)			
Swimming and Aquatic Activities			
Pet-Based Programs			
Quiet Reflection/Relaxation			
Educational and Instructional Programs			
Arts and Crafts Programs			
Programs for Special Needs Population			

Other/Comments (please specify and indicate whether needs are met, not met, or not needed for each type of facility/areas indicated.)

3. In total, how many hours would you like to spend per week on recreation?

4. What percentage of your recreation time would you like to dedicate to each of the following categories? (Please do not exceed 100%)

Individual Sports

Team Sports

Outdoor Passive Activities (i.e. hiking, nature walks, bird watching, etc.)

Outdoor Water Activities (i.e. kayaking, paddle-boarding, sailing, etc.)

Indoor Recreation (i.e. swimming, ice skating, sports, etc.)

Age-Specific Activities (i.e. early childhood programs, youth activities, senior activities, etc.)

Arts/Cultural Activities (i.e. performing/visual arts, outdoor concerts/movies, arts/crafts, historic sites/programs)

Camps (i.e. summer day camps, sports/specialty camps)

Education and Instructional Programs

Personal Wellness Activities (i.e. general health/fitness activities, quiet reflection/relaxation)

5. Please indicate below your best time for recreation during a typical week. (Select all that apply)

	6 to 8am	8 to 10am	10 to noon	Noon to 2pm	2 to 4pm	4 to 6pm	6 to 8pm	8 to 10pm	10pm to 6am
Monday									
Tuesday									
Wednesday									
Thursday									
Friday									
Saturday									
Sunday									

6. Of the following facilities, please list the top five facilities you plan to use in order from 1-5.

	Facilities
1 (most often)	
2	
3	
4	
5 (least often)	

7. When choosing to visit or use a park facility or area, what criteria would you identify as being most important to you?

	Very Important	Important	Somewhat Important	Not Important	N/A
Convenience					
Facilities are well maintained					
Great customer service by staff					
Variety of park uses					
Facilities' operating hours are convenient					
Facilities/areas are safe and secure					
Family Atmosphere					
Cost/Fees					
Accessible for people with disabilities					
Plenty of parking					
Easy to access by car					
Facility provides access to waterways					
Restroom facilities					

Other/Comments (please specify and rank the importance of each additional criteria identified)

8. What is the most effective way to inform you about parks facilities, services, and programs?

	1 (Most Effective)	2	3	4	5 (Least Effective)
Printed Brochure					
Television					
Mail					
Websites					
Social Media					
E-Mail					
Text Message					
Newspaper					
Radio					
At the Park Facilities					
Flyers in School Backpacks					
Word of Mouth					

Other/Comments (please specify and rank)

9. Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?

- Yes
- No
- Unsure

10. How much would you be willing to spend annually to acquire more publicly accessible parkland?

- ◯ $10
- ◯ $20
- ◯ $30
- ◯ $40
- ◯ Other (please specify)

[ ]

11. Would you support a dedicated annual fee from all residents to develop more publicly accessible recreation facilities?

- ◯ Yes
- ◯ No
- ◯ Unsure

12. How much would you be willing to spend annually to develop more publicly accessible recreation facilities?

- ◯ $10
- ◯ $20
- ◯ $30
- ◯ $40
- ◯ Other (please specify)

[ ]

13. Would you support admittance fees for use of specific park system facilities/sites by county residents?

- ◯ Yes
- ◯ No

14. Would you support admittance fees for use of specific park system facilities/sites by non-county residents?

- ◯ Yes
- ◯ No

15. If you have a specific amenity or facility request that you would like to see in Queen Anne's County, please list or describe your request here (be specific, where in the county would you like to see this amenity or facility?).

16. Do you have any additional comments or suggestions you would like to offer regarding facilities, amenities and programs provided by Queen Anne's County Parks Department?

17. What is the zip code of your primary residence?

18. What is your age?

- 8-17
- 18-35
- 36-50
- 51-65
- 66-74
- 75+

19. What is your approximate average household income?

- Under $24,999
- $25,000 to $49,999
- $50,000 to $99,999
- $100,000 to $149,999
- $150,000+

APPENDIX B

Parks Needs Assessment Survey Results

Queen Anne's County Department of Parks
Needs Assessment
Survey Results

January 18, 2017

Prepared by:

BEACON
Business Economic and Community Outreach Network
At Salisbury University

Table of Contents

Introduction 3

Survey Results 4

Question 1: Of the following types of park facilities and areas, please indicate whether your personal needs are met, not met, or not needed. (Response Count: 794) 4

Question 2: Of the following types of programs and services, please indicate if your personal needs are met. (Response Count: 758) 7

Question 3: In total, how many hours would you like to spend per week on recreation? (Response Count: 671) 10

Question 4: What percentage of your recreation time would you like to dedicate to each of the following categories? (Please do not exceed 100%). (Response Count: 637) 17

Question 5: Please indicate below your best time for recreation during a typical week. (Select all that apply). (Response Count: 719) 19

Question 6: Of the following facilities, please list the top five facilities you plan to use in order from 1-5. (Response Count: 616) 26

Question 7: When choosing to visit or use a park facility or area, what criteria would you identify as being most important to you? (Response Count: 659) 28

Question 8: What is the most effective way to inform you about parks facilities, services, and programs? (Response Count: 658) 30

Question 9: Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland? (Response Count: 671) 39

Question 11: Would you support a dedicated annual fee from all residents to develop more publicly accessible recreation facilities? (Response Count: 666) 52

Question 12: How much would you be willing to spend annually to develop more publicly accessible recreation facilities? (Response Count: 265) 53

Question 13: Would you support admittance fees for use of specific park system facilities/sites by county residents? (Response Count: 665) 55

Question 14: Would you support admittance fees for use of specific park system facilities/sites by non-county residents? (Response Count: 667) 56

Question 15: If you have a specific amenity or facility request that you would like to see in Queen Anne's County, please list or describe your request here (be specific, where in the county would you like to see this amenity or facility?). (Response Count: 293) 57

Question 16: Do you have any additional comments or suggestions you would like to offer regarding facilities, amenities and programs provided by Queen Anne's County Parks Department? (Response Count: 170) 64

Question 17: What is the zip code of your primary residence? (Response Count: 621; 3 invalid responses) 67

Question 18: What is your age? (Response Count: 664) 68
Question 19: What is your approximate average household income? (Response Count: 609) 69

Introduction

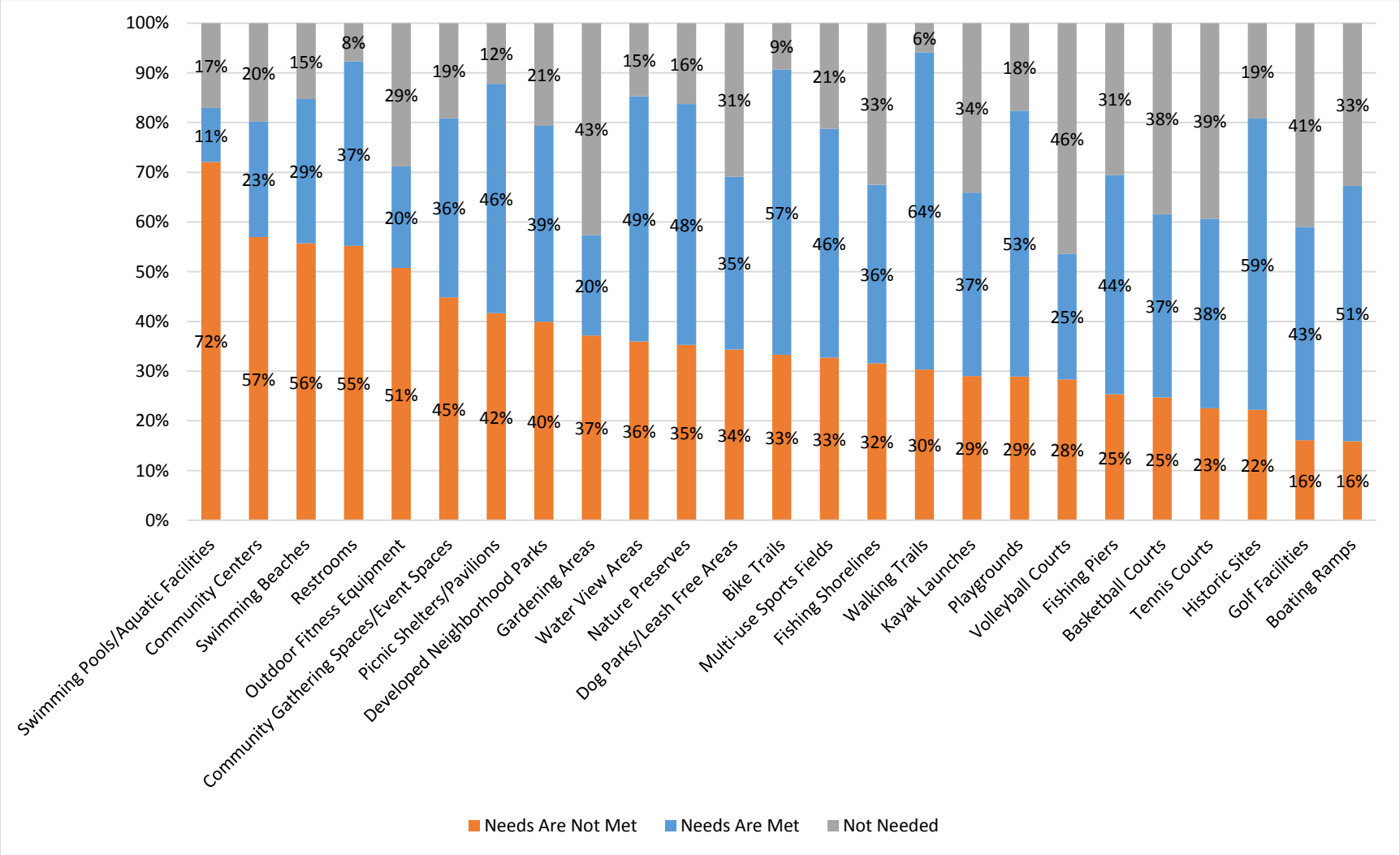
The Business, Economic, and Community Outreach Network (BEACON) of the Franklin P. Perdue School of Business was contracted by the Queen Anne's County Department of Parks to conduct a comprehensive needs assessment survey. The outcome of this assessment is intended provide the Department of Parks with insight into residents' uses of and desires for park services in the county and to help guide the Department's long-range planning efforts.

The needs assessment process began with a series of stakeholder focus groups and interviews designed to gain a better understanding of stakeholders' opinions of the current landscape and future needs for park services. The results of these focus groups and interviews guided the development of the online survey tool used to gather the input of the broader community. Once developed, the survey was piloted with a small stakeholder group and finalized through a series of reviews. The survey was then released online and promoted through a variety of mechanisms by the Department of Parks including mass email blasts from the Department with requests to forward on Chamber of Commerce email blasts; notification in monthly Department newsletters; press release in local county newspaper of record; front page advertisement on paper delivered to all residents; motivation and direct link on cable channel QACTV as well as county website Flyer posting; hand-to-hand distribution to trail users; 3x6' banner signs at key locations in the county; announcements at televised county meetings and events; and word of mouth.

The survey was available online for two full months, opening August 29th and closing October 31st. During this time, a total of 802 respondents participated in the survey. The results of the survey are detailed in the following pages.

Survey Results

Question 1: Of the following types of park facilities and areas, please indicate whether your personal needs are met, not met, or not needed. (Response Count: 794)



- The five types of park facilities and areas where the highest percentage of respondents feel that their **needs are met** include: walking trails (64%), historic sites (59%), bike trails (57%), playgrounds (53%), and boating ramps (51%).
- The five types of park facilities and areas where the highest percentage of respondents feel that their **needs are not met** include: swimming pools/aquatic facilities (72%), community centers (57%), swimming beaches (56%), restrooms (55%), and outdoor fitness equipment (51%).
- The five types of park facilities and areas that the highest percentage of respondents feel are **not needed** include: volleyball courts (46%), gardening areas (43%), golf facilities (41%), tennis courts (39%), and basketball courts (38%).

Open-ended response summary:

Swimming/Aquatic Center and Community Center

The most frequently cite unmet need is that of public swimming/aquatic facilities (both indoor and outdoor). Many respondents identified the need for swimming lessons offered at these facilities to ensure water safety in a county that is surrounded by water. A splash pad or splash park is another potential aquatic facility that could bring value to the county. A community center was also identified as a need, particularly one that offers recreational opportunities for kids and teens and provides a safe place to be positively engaged in the community.

Sports fields

Unmet needs in regards to sports and recreation fields include sufficient upkeep of the fields, more multi-use fields, an adequate number of fields to meet the demands of local sports, turf fields, and better drainage design for improved drainage during wet weather. The issue of field management and scheduling was also noted as an issue currently. Additional amenities such as bleachers and benches, concession facilities, lighting, and adequate bathrooms (including plumbed bathrooms) were suggested by many respondents.

Bathroom facilities

Overall, there appears to be a need for additional year-round bathrooms at many of the facilities and areas including sports fields and trails. There are concerns over the maintenance and upkeep of the restrooms, particularly during high traffic times. Plumbed bathroom facilities were identified as a need for certain high traffic facilities.

Trails

In regards to trails, many respondents were pleased with existing trails, particularly, the Cross Island Trail, and the work to expand the trail system. However, there is a desire for more walking/hiking trails and better connectivity of existing trails. In particular, it was noted that the South Island Trail and Cross Island Trail be connected. There are concerns about safety issues relating to the current

crossing of Route 50 at Route 8 and better trail connectivity that takes cyclists off the road were recommended. Lastly, a need was identified for equestrian trails in the county.

Additional Facilities/Amenities

Several additional facilities were identified throughout the open-ended responses. Volleyball courts, skate parks, bike parks, and a public golf course in the northern part of the county were identified as needed assets. The desire for an outdoor concert/event venue was expressed by several respondents and noted as a potential way to bring more visitors to the county. Additional parking is a need at several facilities including at trails, fields, and boat ramps, particularly handicap parking and handicap parking for vehicles with trailers.

Facility Maintenance

Concerns over the maintenance and upkeep at several existing facilities were raised by respondents. Playground maintenance was one area of concern, particularly at Love Point Park. The tennis courts were another area of noted concern where resurfacing is needed.

Dog Parks

Many respondents noted the need for additional dog parks throughout the county. The areas of unmet needs at existing parks include lighting, bathroom facilities, and year-round access to water in the parks.

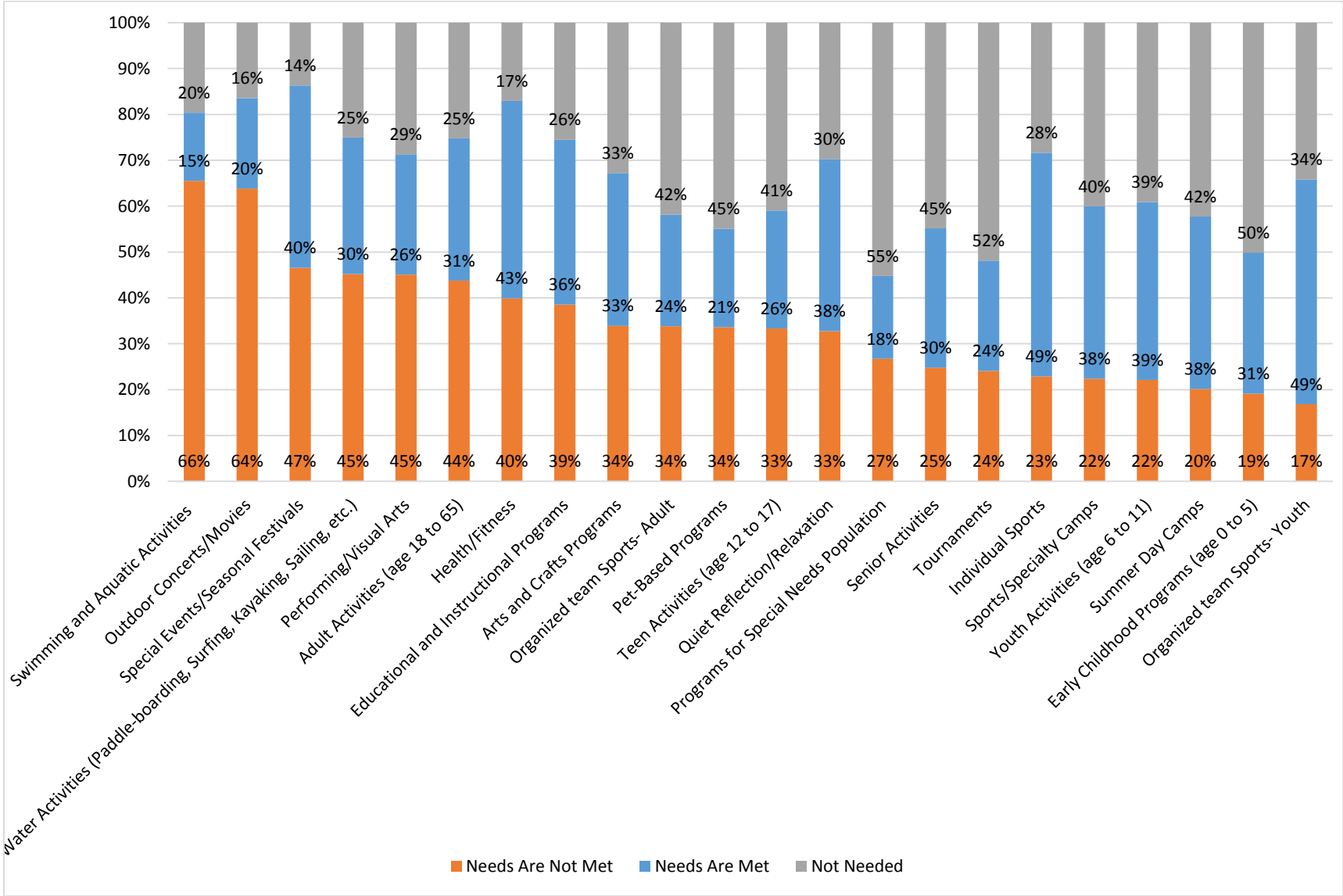
Water Access

There is a need for more public water access points including: public beaches, kayak and boat launch sites, and fishing areas/piers. Concerns were raised as to the need for a permit for kayak launching at the existing facilities. There is also a desire to open Conquest Beach to the public.

Other

The last need identified was that of better publicizing existing facilities and amenities in the county. Some respondents expressed a lack of awareness of the currently available facilities. There was also concern expressed about adding additional facilities. It was suggested by some respondents that maintenance of existing facilities should be prioritized over adding new facilities or that the addition of new facilities should only occur where there are proper resources to maintain them adequately.

Question 2: Of the following types of programs and services, please indicate if your personal needs are met. (Response Count: 758)



- The five types of programs and services where the highest percentage of respondents feel that their **needs are met** include: individual sports (49%), organized team sports-youth (49%), health/fitness (43%), special events/seasonal festivals (40%), and youth activities (age 6 to 11) (39%).
- The five types of programs and services where the highest percentage of respondents feel that their **needs are not met** include: swimming and aquatic activities (66%), outdoor concerts/movies (64%), special events/seasonal festivals (47%), water activities (paddle-boarding, surfing, kayaking, sailing, etc.) (45%), and performing/visual arts (45%).
- The five types of programs and services that the highest percentage of respondents feel are **not needed** include: programs for special needs population (55%), tournaments (52%), early childhood programs (age 0 to 5) (50%), senior activities (45%), and pet-based programs (45%).

Open-ended response summary:

Swimming and Aquatics Facilities

One of the more commonly unmet needs identified by respondents is that of swimming and aquatic facilities. In a county with frequent water activity, a need for water safety training and swimming lessons is noted as a high priority.

Arts and Crafts and Performing Arts

Crafts and performing arts opportunities has been identified as an unmet need in Queen Anne's County. People believe that an emphasis on sports activities has left a gap in the way of performing arts and opportunities to engage in them for youth and adolescents. Adults of the community have expressed an apparent lack of craft programs in the county as well, such as needlework, crafting, and even pottery.

Concerts, Festivals, and Community Events

Respondents have identified a lack of outdoor community events that families can attend. As a result families have outsourced entertainment like concerts, movies, and events to other counties. Many respondents are in support of an increase in local entertainment to avoid the unnecessary travel to fulfill this need elsewhere.

Sports Programs and Fields

Unfulfilled needs regarding recreational fields include proper field maintenance, an increase in the number of available fields, and better scheduling for field occupancy. Citizens have also noted an increase in "pay to play" fields which is a separate, but related

issue. Other requests have been made to implement better program structure for early childhood and youth activities, as well as available indoor recreational facilities.

Programs for Toddlers and Young Children

There has been a request for an increase in youth programs for early childhood and youth activities. Ideas have varied from STEM programs to tutoring.

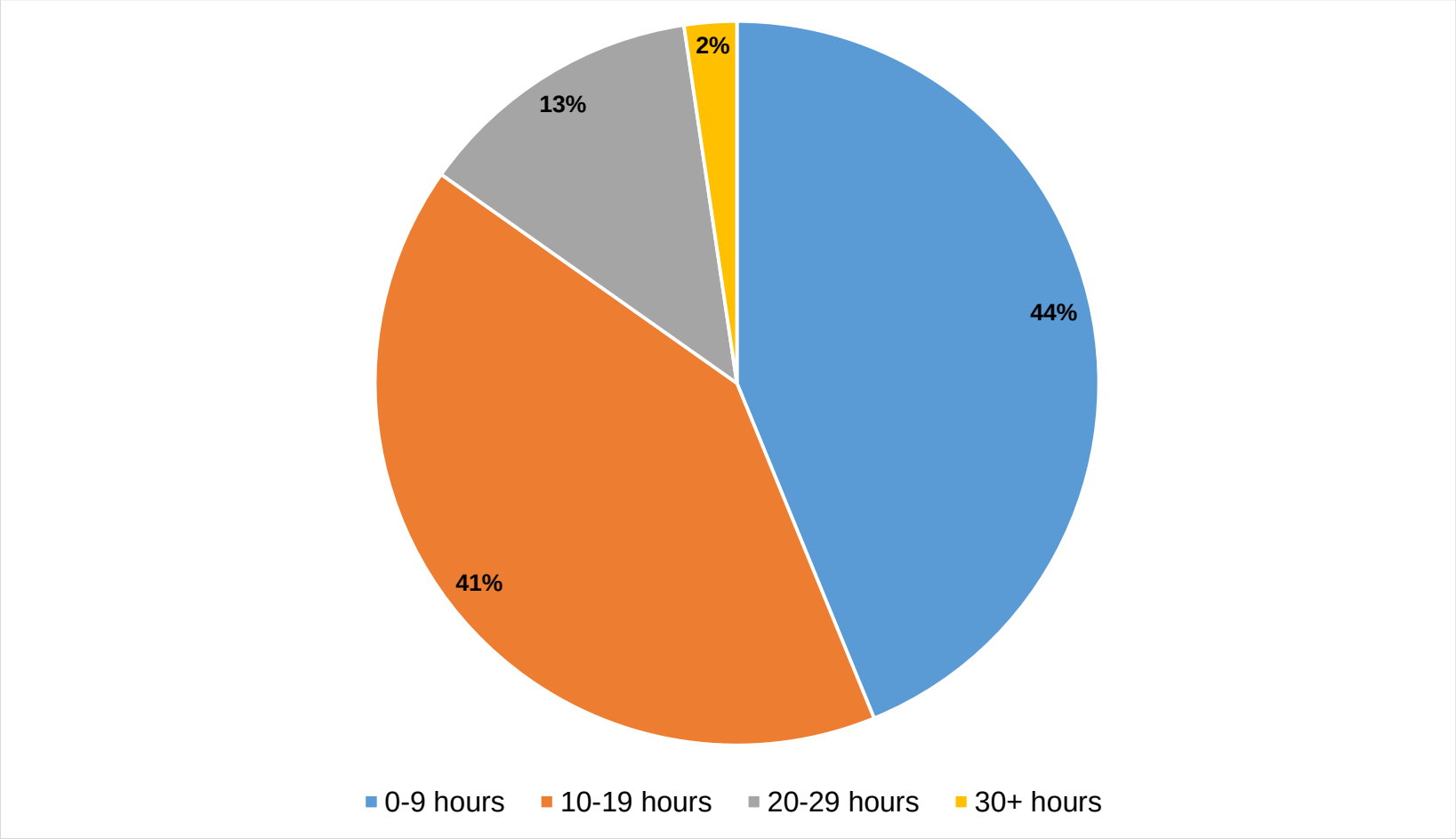
Water Access and Maintenance

There is a need for more public water access points including: public beaches, kayak and boat launch sites, and fishing areas/piers. Conflict often arises when people try to launch boats while people are fishing and requests have been made for some form of organizational process. There is also a desire to open Conquest Beach to the public.

Skate Parks

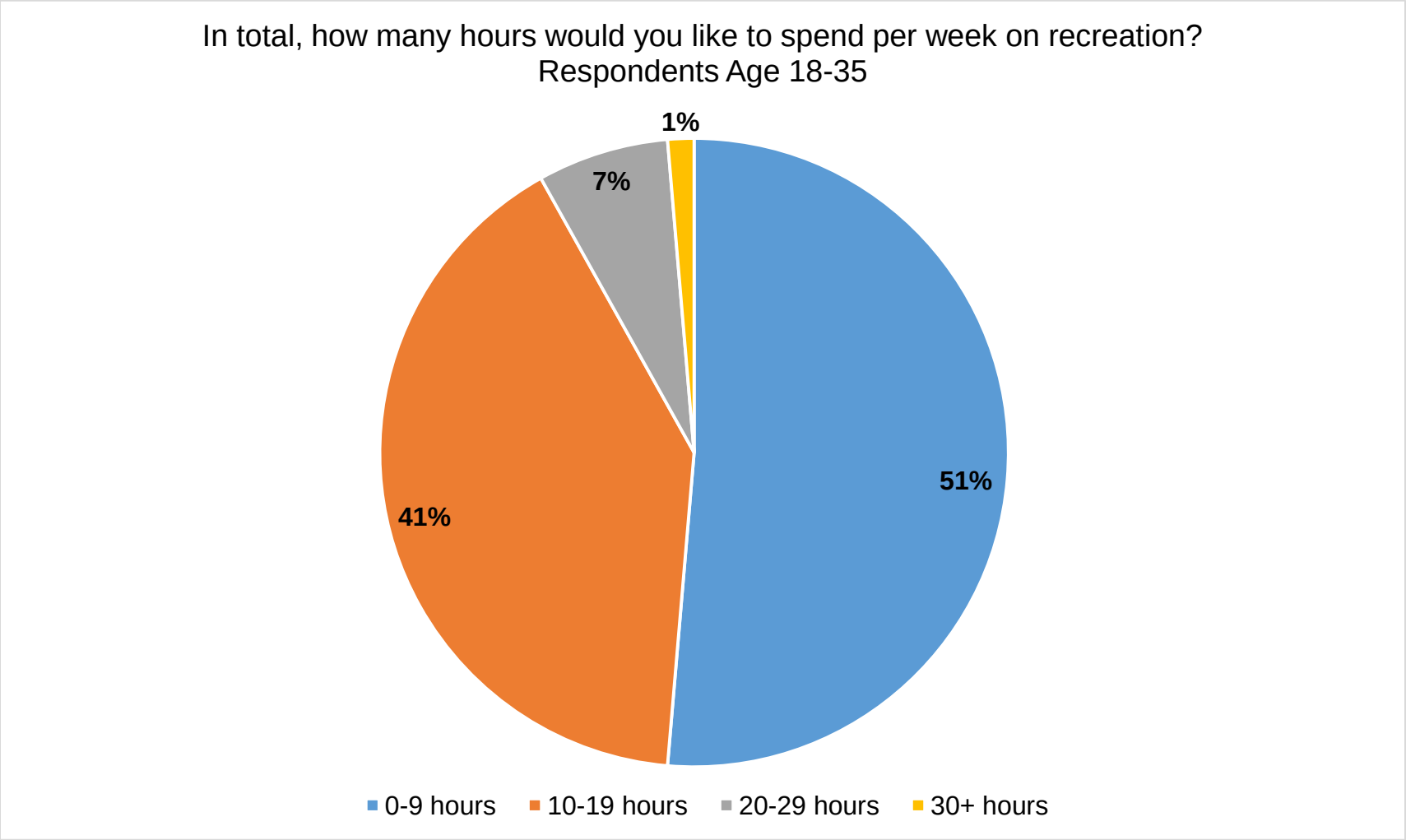
Respondents have noted a lack of public skating facilities in the county. Queen Anne's County has a considerable skateboard population and requests have been made to look into some form of concrete park, similar to that of Bowie or Laurel.

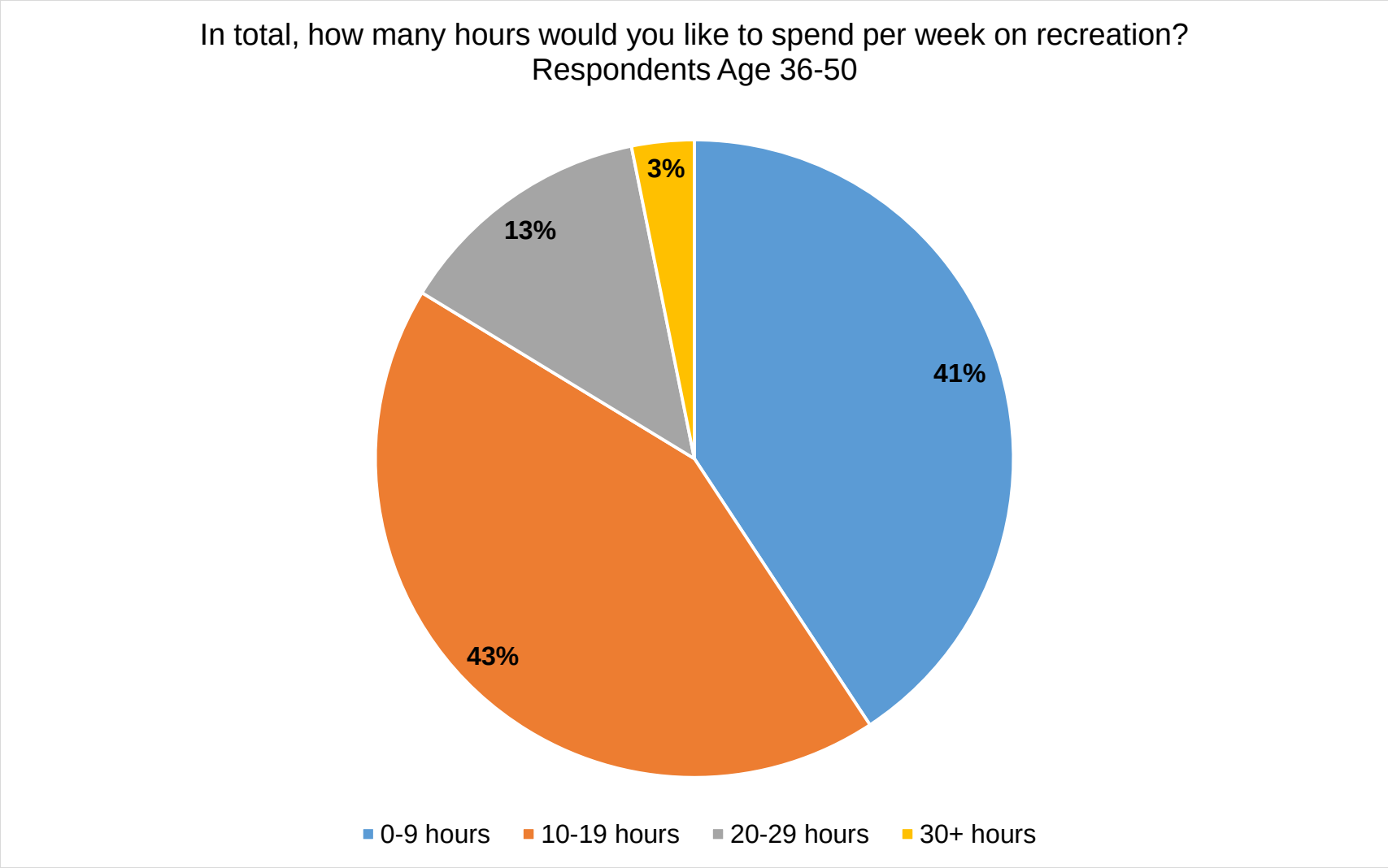
Question 3: In total, how many hours would you like to spend per week on recreation? (Response Count: 671)

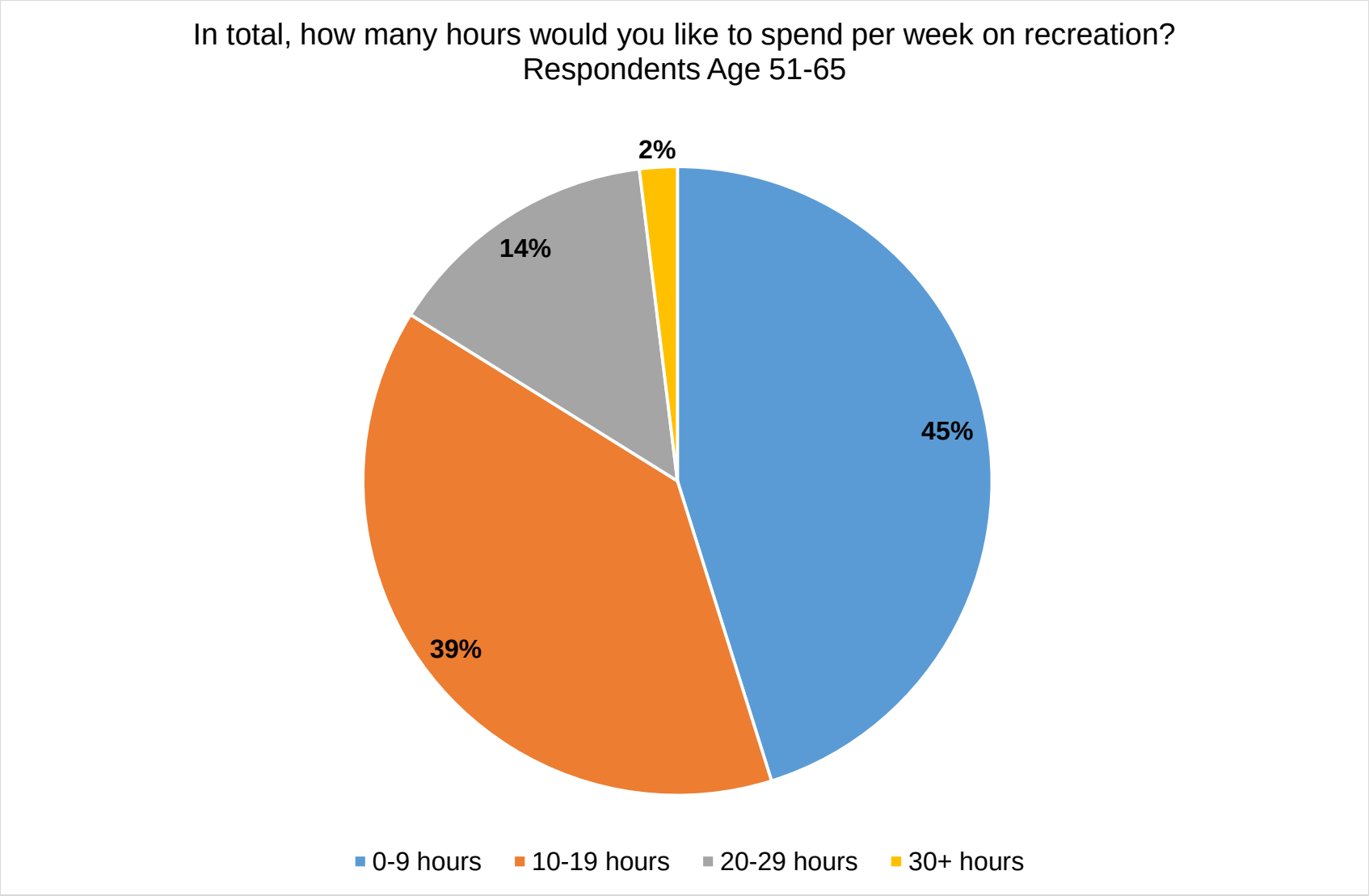


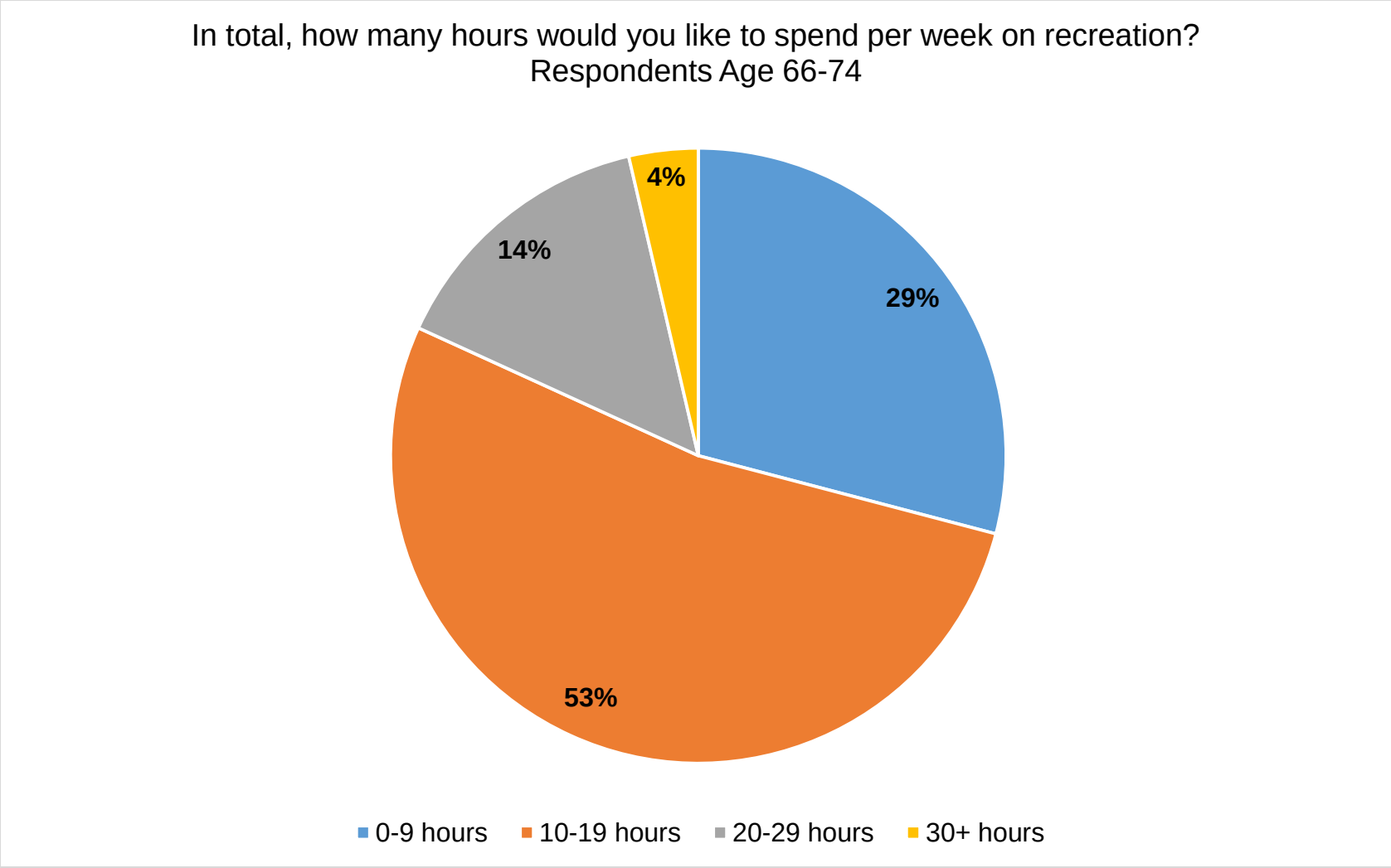
Minimum	0.5 hours
Maximum	120 hours
Average	11.4 hours

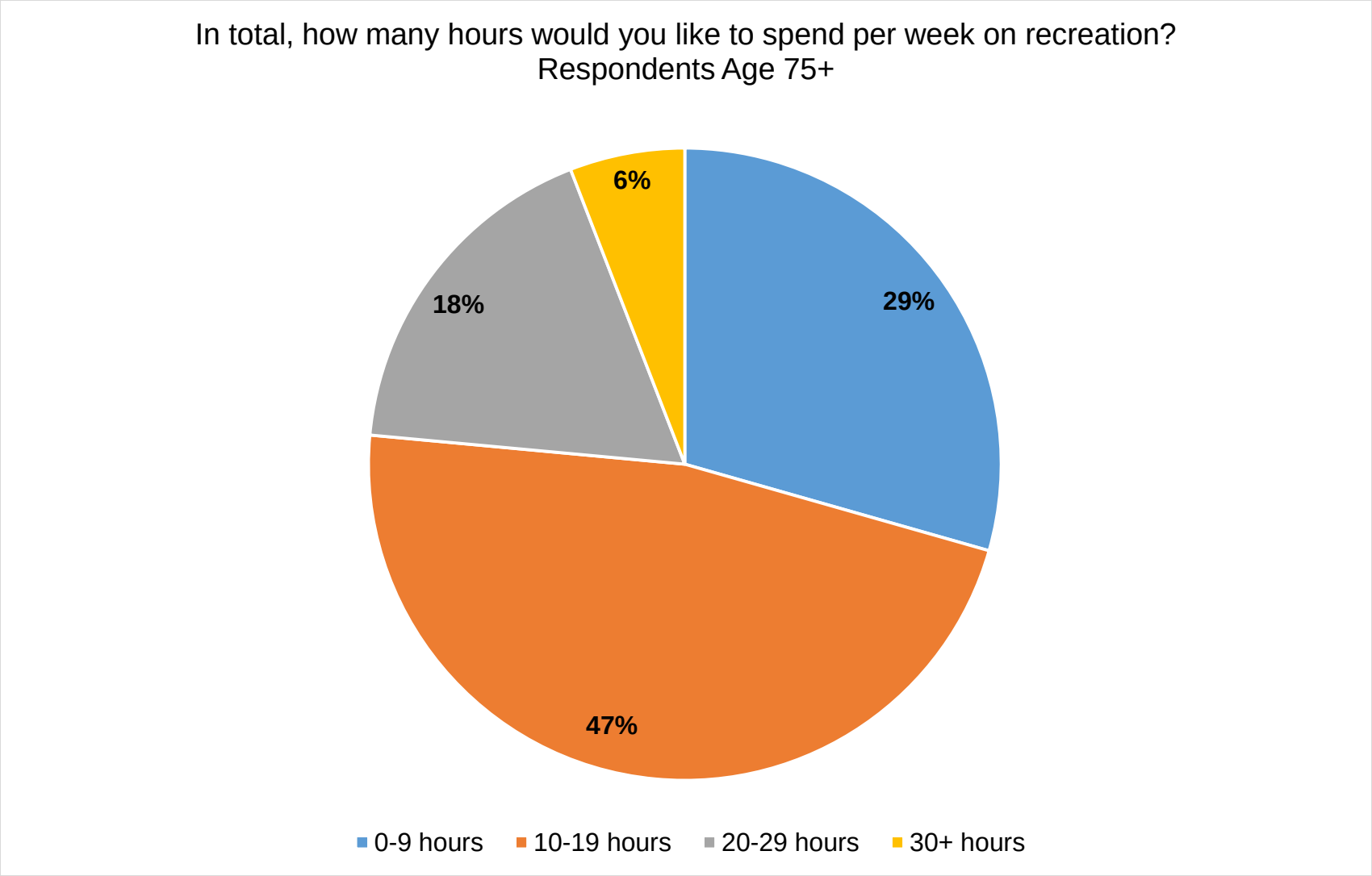
This responses to this question were cross-tabulated with respondents' age. The breakdown of response by age is provided below.




In total, how many hours would you like to spend per week on recreation?
Respondents Age 36-50
3%
13%
41%
43%
0-9 hours
10-19 hours
20-29 hours
30+ hours

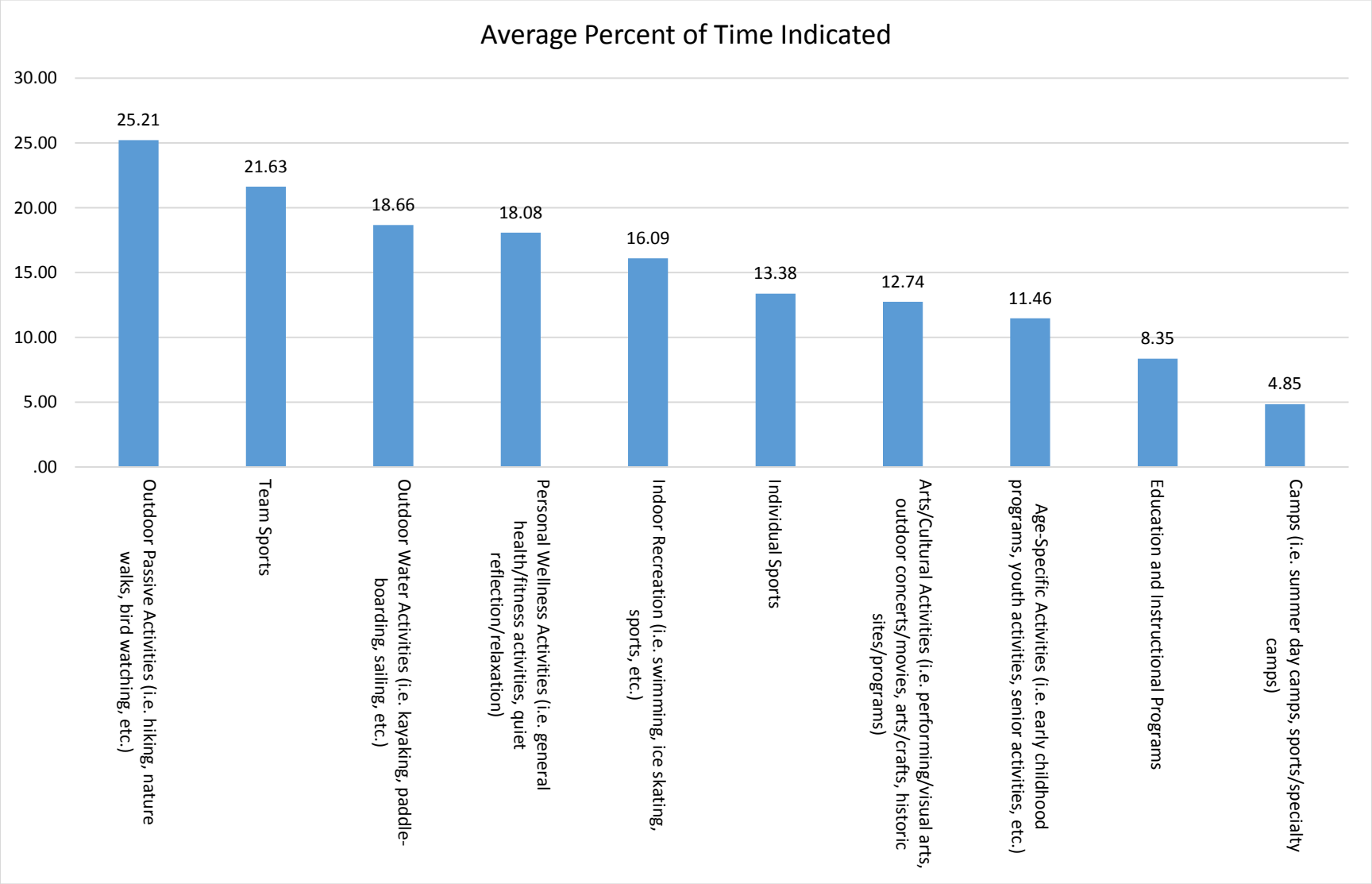

In total, how many hours would you like to spend per week on recreation?
Respondents Age 51-65
2%
14%
45%
39%
0-9 hours
10-19 hours
20-29 hours
30+ hours


In total, how many hours would you like to spend per week on recreation?
Respondents Age 66-74
4%
14%
29%
53%
0-9 hours
10-19 hours
20-29 hours
30+ hours


In total, how many hours would you like to spend per week on recreation?
Respondents Age 75+
6%
18%
29%
47%
0-9 hours
10-19 hours
20-29 hours
30+ hours

There are few significant differences in the number of hours respondents would like to spend on recreation per week when examining the responses by age. The only notable difference is for the age categories of 66 to 74 years and 75+ years. Overall, a higher percentage of individuals in these age categories would like to spend between 10 and 19 hours per week on recreation and fewer respondents in these age categories would like to spend 0-9 hours per week on recreation. In other words, respondents between the ages of 66 and 75+ years would like to spend more time on recreation each week than younger participants.

Question 4: What percentage of your recreation time would you like to dedicate to each of the following categories? (Please do not exceed 100%). (Response Count: 637)

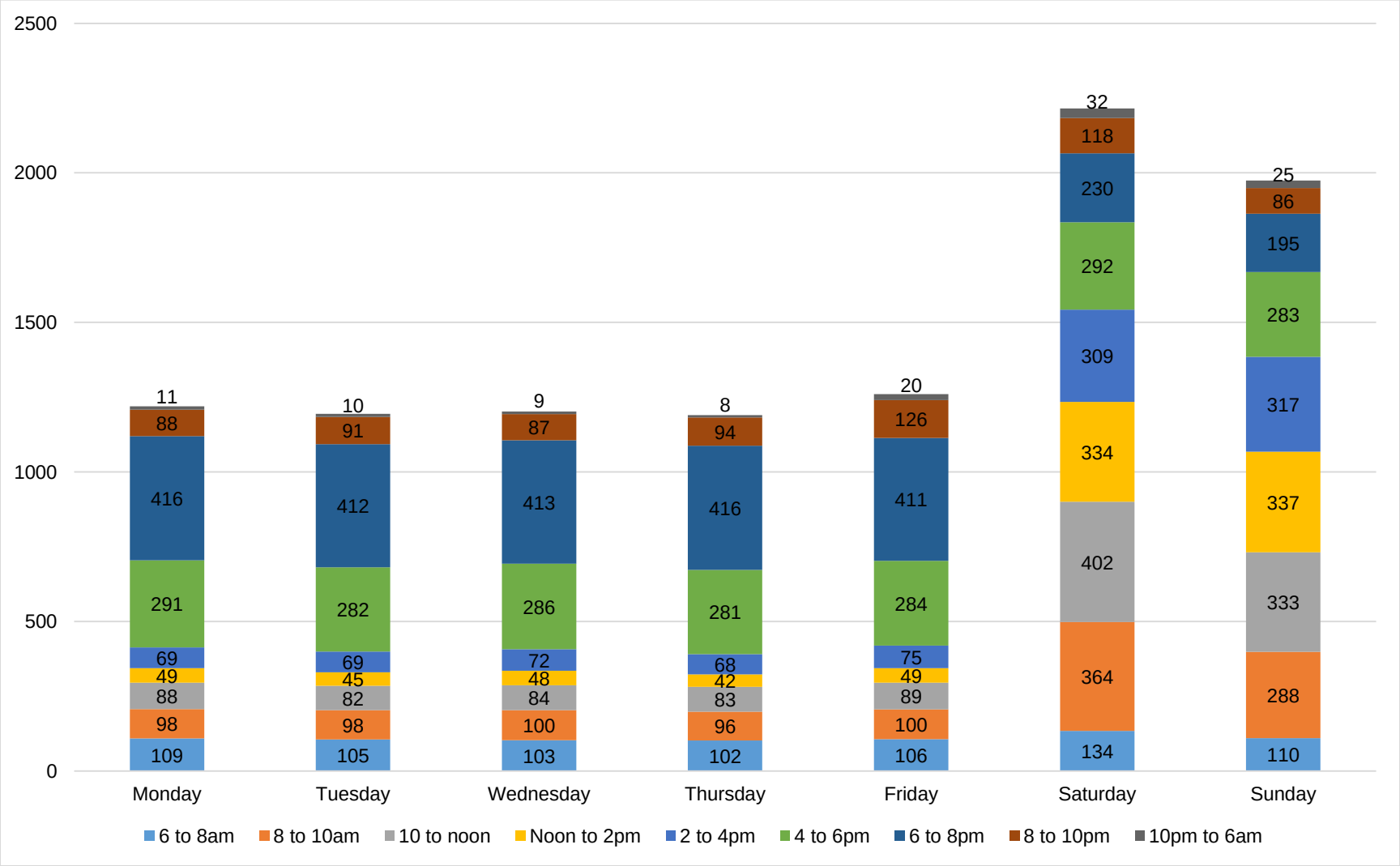


Outdoor passive activities, team sports, outdoor water activities, and personal wellness activities are the five categories of recreation in which respondents reported wishing to spend the highest percentage of their time overall. On average, respondents wish to spend less than 10% of their recreation time on camps and educational and instructional programs. The table below shows the number and percent of respondents who indicated wishing to dedicate some of their recreation time to each of the following categories:

Answer Options	Response Count	Percent of Respondents
Individual Sports	365	57%
Team Sports	397	62%
Outdoor Passive Activities (i.e. hiking, nature walks, bird watching, etc.)	521	82%
Outdoor Water Activities (i.e. kayaking, paddle-boarding, sailing, etc.)	478	75%
Indoor Recreation (i.e. swimming, ice skating, sports, etc.)	416	65%
Age-Specific Activities (i.e. early childhood programs, youth activities, senior activities, etc.)	339	53%
Arts/Cultural Activities (i.e. performing/visual arts, outdoor concerts/movies, arts/crafts, historic sites/programs)	404	63%
Camps (i.e. summer day camps, sports/specialty camps)	275	43%
Education and Instructional Programs	329	52%
Personal Wellness Activities (i.e. general health/fitness activities, quiet reflection/relaxation)	463	73%

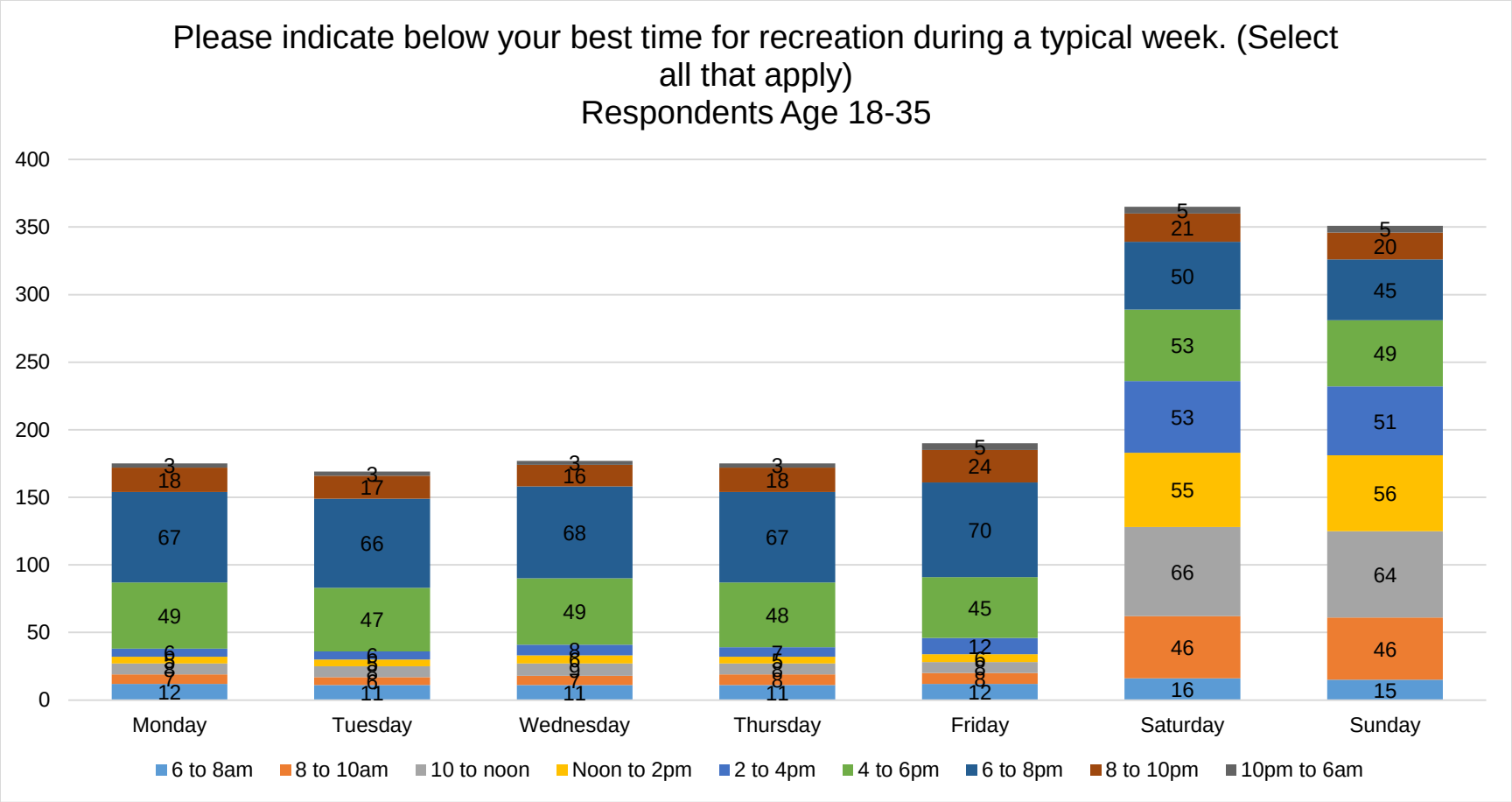
The five activities where the highest percentage of participants wish to dedicate at least some of their recreation time are outdoor passive activities (82%), outdoor water activities (75%), personal wellness activities (73%), indoor recreation (65%), and arts/cultural activities (63%). This differs slightly from where respondents report wishing to spend the highest percentage of their recreational time.

Question 5: Please indicate below your best time for recreation during a typical week. (Select all that apply). (Response Count: 719)

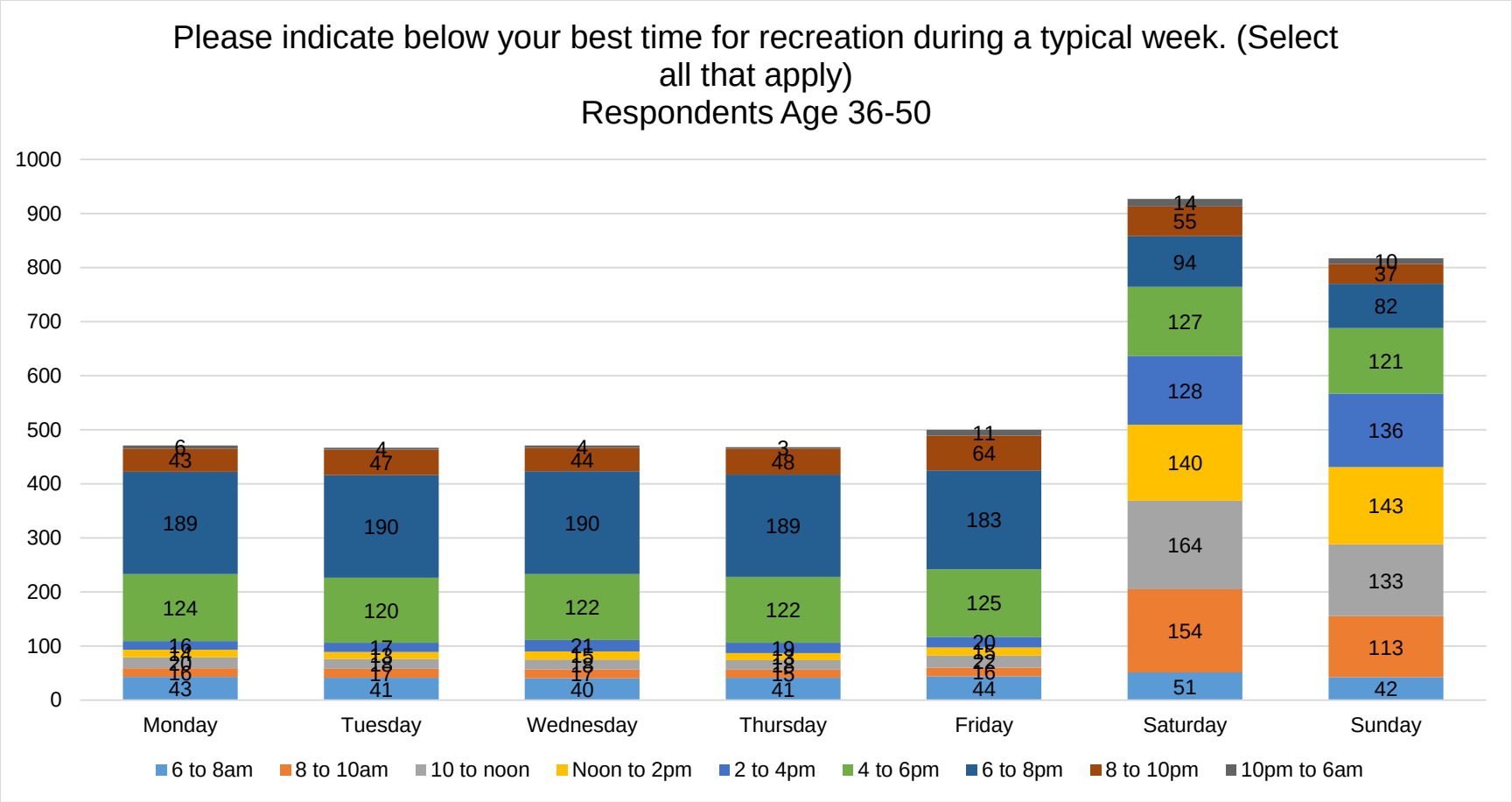


During the week, Monday through Friday, the best time for recreation for respondents is from 6:00pm to 8:00pm (62%) and from 4:00pm to 6:00pm (43%), respectively. The next best time for recreation during the week is from 6:00am to 8:00am (16%). On Saturday, the best time for recreation for respondents is from 10:00am to 12:00pm (60%) followed by 8:00am to 10:00am (54%) and 12:00pm to 2:00pm (50%). The next best times for recreation on Saturday are 2:00pm to 4:00pm (46%) and 4:00pm to 6:00pm (43%). On Sunday, the best time for recreation for respondents if either 10:00am to 12:00pm (53%) or 12:00pm to 2:00pm (53%) followed by 2:00pm to 4:00pm (50%). The next best times for recreation on Sunday are 8:00am to 10:00am (46%) and 4:00pm to 6:00pm (45%).

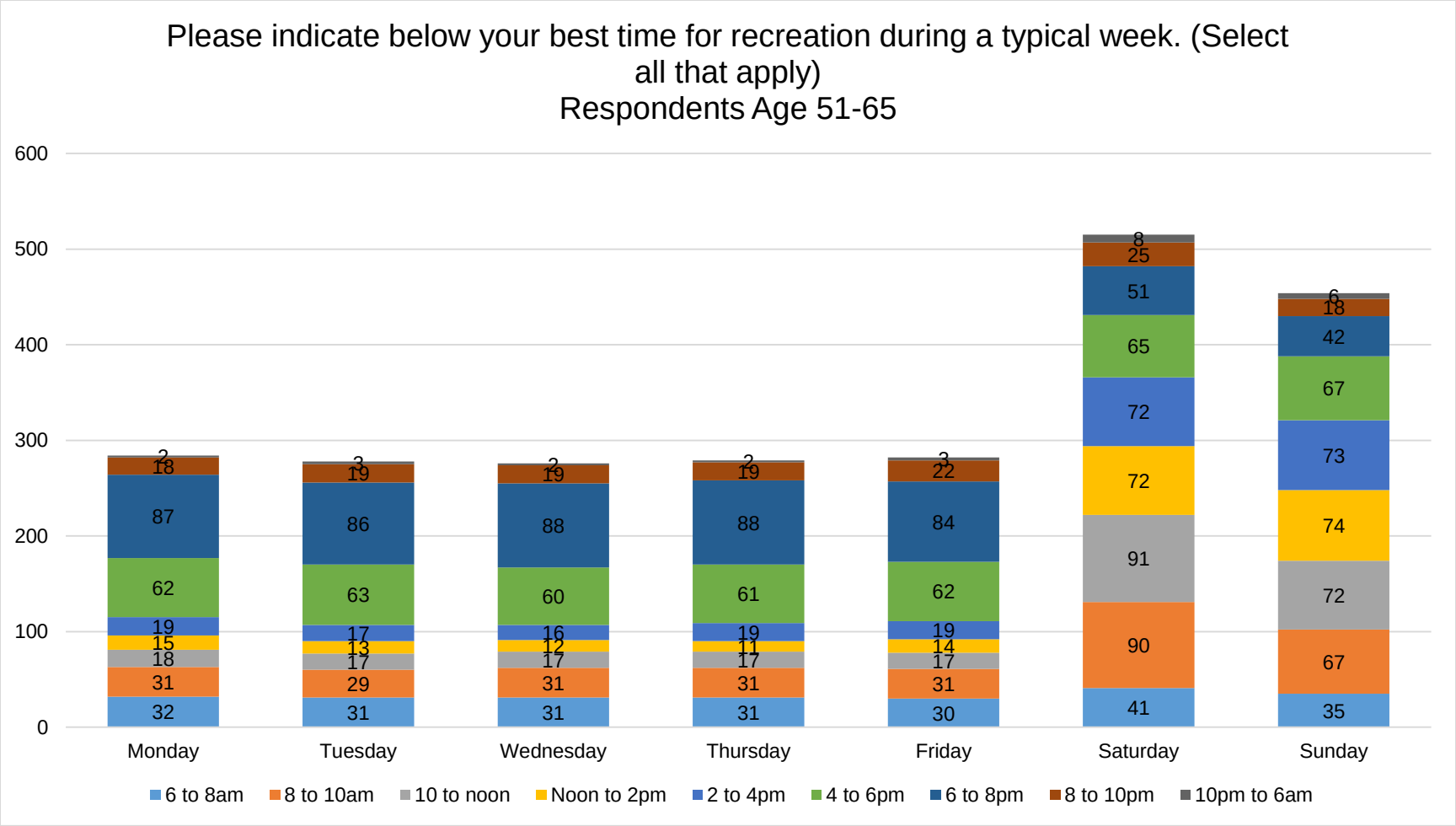
The responses to this question were cross-tabulated with respondents' age. The breakdown of response by age is provided below.



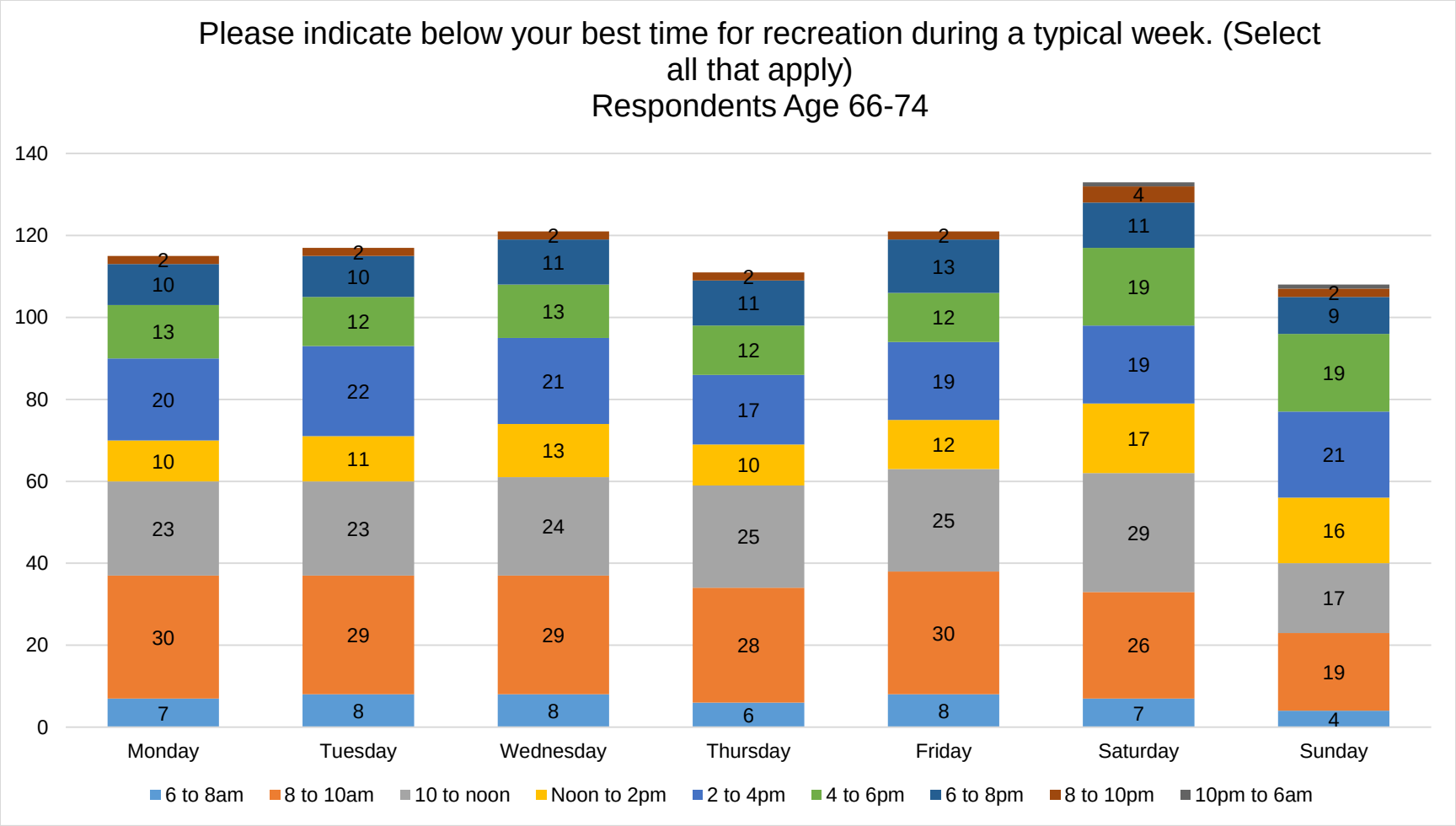
The best time for recreation Monday through Friday for those age 18-35 is from 6 to 8pm (86%) and from 4 to 6pm (62%). The next best time for recreation for this group of respondents is 8 to 10am (9%). On Saturday and Sunday, the best time for reaction for those age 18-35 is 10am to 12pm (80%) following by 12pm to 2pm (68%), 2pm to 4pm (64%), 4pm to 6pm (63%), 6pm to 8pm (59%), and 8am to 10am (57%).



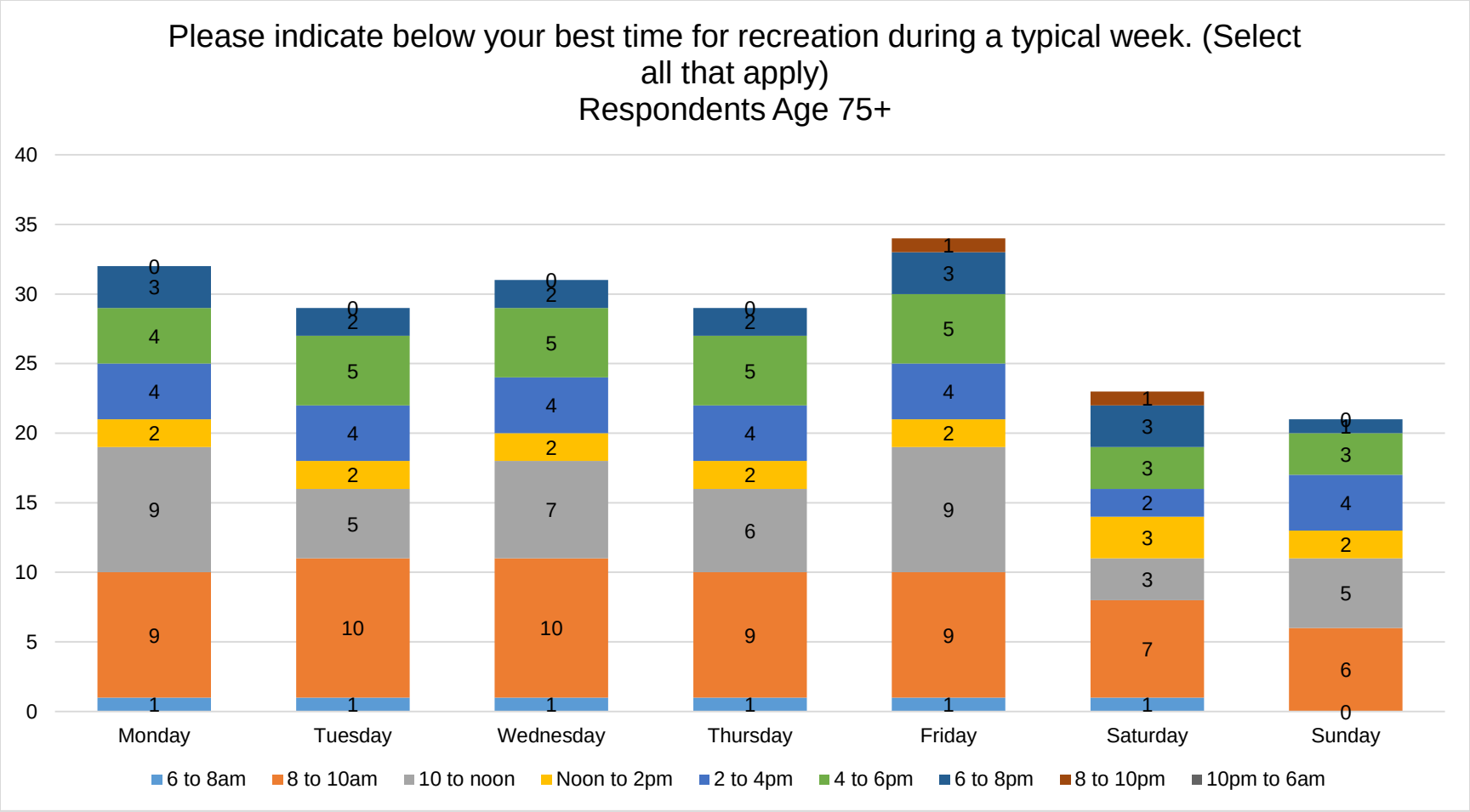
The best time for recreation Monday through Friday for those age 36-50 is from 6pm to 8pm (77%) followed by 4pm to 6pom (50%) and 8pm to 10pm (20%). On Saturday and Sunday, the best time for reaction for those age 36-50 is 10am to 12pm (61%) followed by 12pm to 2pm (59%), 2pm to 4pm (55%), 8am to 10am (55%), and 4pm to 6pm (51%).



The best time for recreation Monday through Friday for those age 51-65 is from 6pm to 8pm (51%) followed by 4pm to 6pom (37%). On Saturday and Sunday, the best time for reaction for those age 51-65 is 10am to 12pm (48%) followed by 8am to 10am (46%), 12pm to 2pm (43%), 2pm to 4pm (43%) and 4pm to 6pm (29%).



The best time for recreation Monday through Friday for those age 66-74 is from 8am to 10am (45%) followed by 10am to 12pm (37%) and 2pm to 4pm (31%). On Saturday and Sunday, the best time for reaction for those age 66-74 is 8am to 10am (38%) and 10am to 12pm (38%) followed by 2pm to 4pm (34%) and 4pm to 6pm (32%).



The best time for recreation Monday through Friday for those age 75+ is from 8am to 10am (49%) followed by 10am to 12pm (37%) and 4pm to 6pm (25%). On Saturday and Sunday, the best time for reaction for those age 75+ is 8am to 10am (42%) and 10am to 12pm (26%) followed by 2pm to 4pm (20%) and 4pm to 6pm (19%).

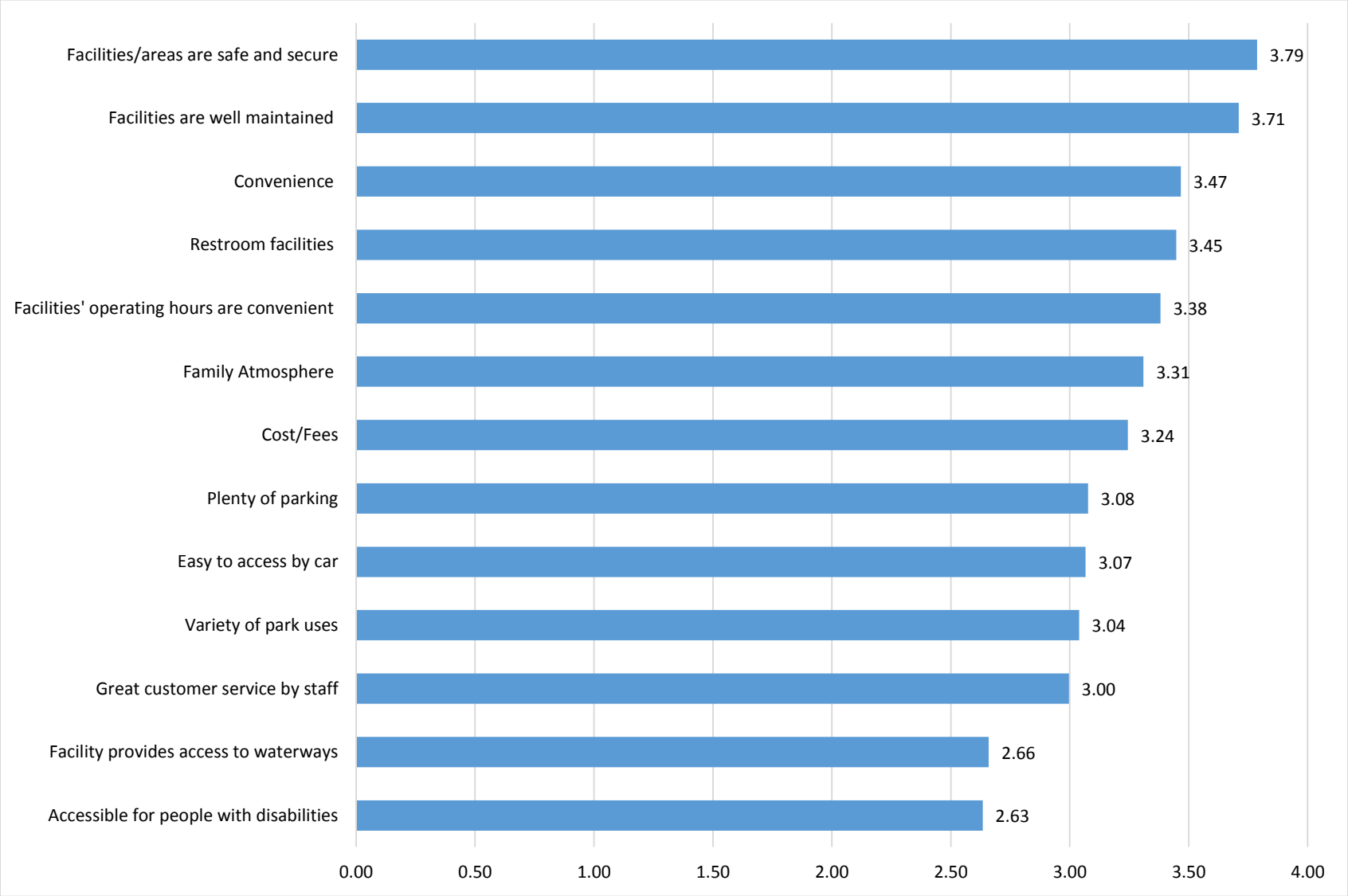
Question 6: Of the following facilities, please list the top five facilities you plan to use in order from 1-5. (Response Count: 616)

	1 (most often)		2		3		4		5 (least often)		Average Ranking (of those who ranked the identified facility)	Percent of Respondents who Ranked Facility in Top 5
	Number	% of all Respondents	Number	% of all Respondents	Number	% of all Respondents	Number	% of all Respondents	Number	% of all Respondents		
Cross Island Trail	125	20%	85	14%	69	11%	41	7%	25	4%	2.29	56%
Terrapin Nature Area	44	7%	49	8%	54	9%	60	10%	36	6%	2.98	39%
Route 18 Park	57	9%	50	8%	40	6%	30	5%	19	3%	2.51	32%
Old Love Point Park	76	12%	33	5%	35	6%	28	5%	20	3%	2.39	31%
Public Landings/Boat Launches	46	7%	26	4%	24	4%	42	7%	28	5%	2.88	27%
Matapeake Clubhouse and Public Beach	11	2%	20	3%	33	5%	37	6%	51	8%	3.63	25%
Church Hill Park	46	7%	40	6%	30	5%	17	3%	15	2%	2.42	24%
White Marsh Park	31	5%	40	6%	34	6%	26	4%	12	2%	2.63	23%
South Island Trail	25	4%	20	3%	28	5%	35	6%	25	4%	3.11	22%
Mowbray Park	18	3%	33	5%	22	4%	17	3%	16	3%	2.81	17%
Kent Island Dog Park	18	3%	29	5%	17	3%	18	3%	21	3%	2.95	17%
Conquest	13	2%	26	4%	21	3%	19	3%	21	3%	3.09	16%
Blue Heron Golf Course	14	2%	20	3%	16	3%	16	3%	33	5%	3.34	16%
Chesapeake Heritage and Visitor Center	7	1%	14	2%	24	4%	22	4%	21	3%	3.40	14%
Sudlersville Park	27	4%	18	3%	10	2%	15	2%	11	2%	2.56	13%
Batts Neck Park	12	2%	26	4%	8	1%	8	1%	21	3%	3.00	12%
Ferry Point Park	9	1%	19	3%	22	4%	15	2%	9	1%	2.94	12%
Kent Narrows Fishing Pier/Picnic Pavilion	6	1%	12	2%	17	3%	14	2%	12	2%	3.23	10%
Roundtop Park	14	2%	7	1%	12	2%	5	1%	18	3%	3.10	9%
Stevensville Pocket Park	3	0%	1	0%	6	1%	7	1%	12	2%	3.82	5%
Crumpton Park	5	1%	2	0%	6	1%	4	1%	10	2%	3.44	4%
Long Point Park	2	0%	4	1%	7	1%	6	1%	6	1%	3.40	4%
Pinkney Park	3	0%	3	0%	2	0%	2	0%	5	1%	3.20	2%
Ewing Pond Park	1	0%	2	0%	4	1%	2	0%	4	1%	3.46	2%
Roosevelt Park	2	0%	1	0%	1	0%	2	0%	4	1%	3.50	2%

The table above shows the number of individuals that ranked each facility as one of the top five facilities that they plan to use and the corresponding ranking category. Also displayed is the corresponding percentage of all respondents that ranked the facility in each of the five rankings. The average ranking is a composite ranking score based on the rankings of all respondents who identified that facility in their top five facilities. A lower score indicates that the facility is used more often, a score closer to five indicates that the facilities is used less often within the top five categories.

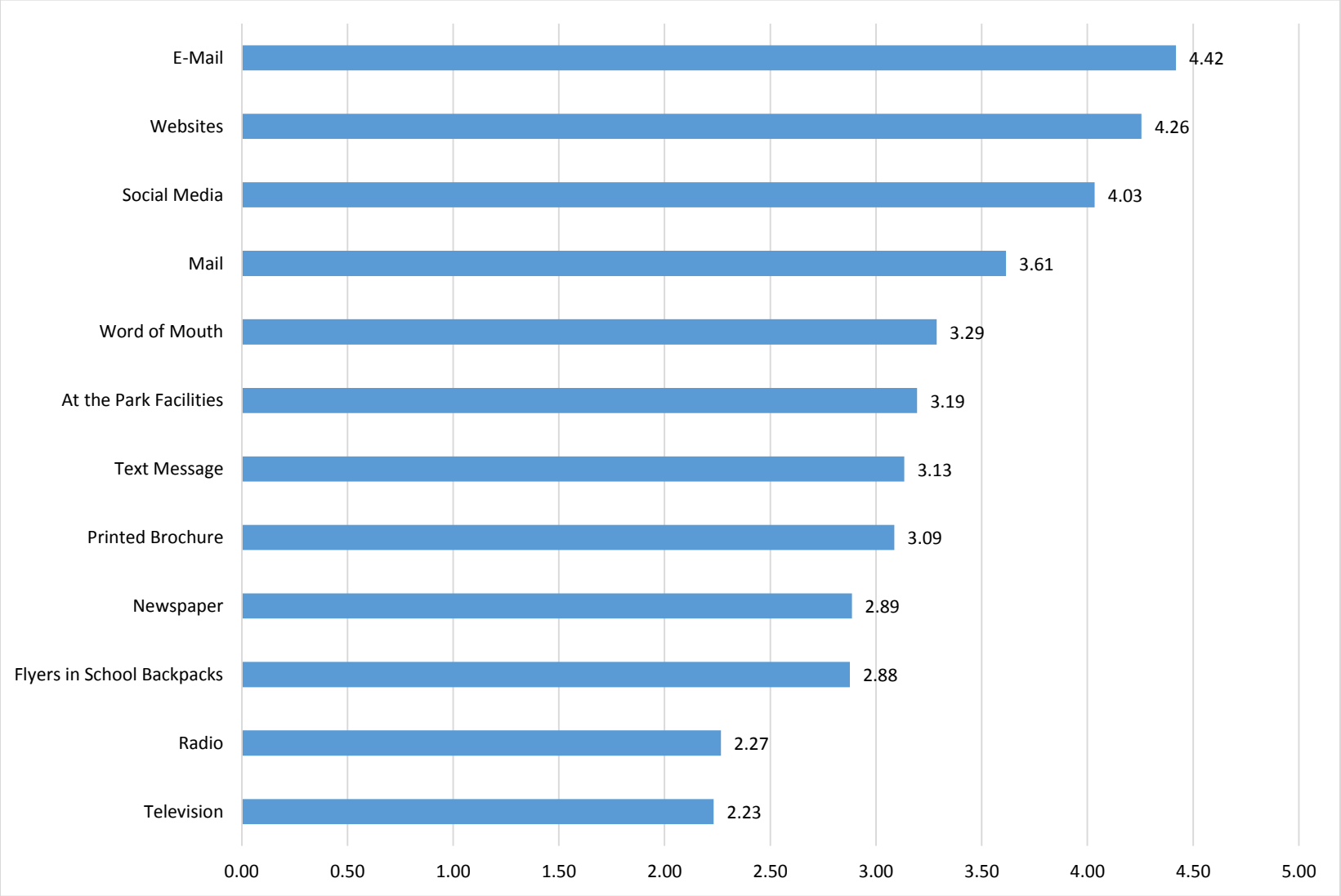
The following ten facilities, in rank order, were identified by the highest percent of respondents as being within the top five facilities that they plan to use: Cross Island Trail (56%), Terrapin Nature Area (39%), Route 18 Park (32%), Old Love Point Park (31%), Public Landings/Boat Launches (27%), Matapeake Clubhouse and Public Beach (25%), Church Hill Park (24%), White Marsh Park (23%), South Island Trail (22%), and Kent Island Dog Park (17%).

Question 7: When choosing to visit or use a park facility or area, what criteria would you identify as being most important to you? (Response Count: 659)



A higher ranking indicates a higher level of importance in respondents' criteria for choosing to visit or use a park facility or area. The top five identified criteria are (in rank order): facilities/areas are safe and secure (3.79), facilities are well maintained (3.71), convenience (3.47), facilities' operating hours are convenient (3.38), and family atmosphere (3.31). The five least important criteria as ranked by respondents are: accessible for people with disabilities (2.63), facility provides access to waterways (2.66), great customer service by staff (3.00), variety of park uses (3.04), and easy to access by car (3.07). With the exception of providing access to waterways and accessibility for people with disabilities, all other criteria, on average, rank above 3.00 indicating that they are "important" or "very important" in respondents' decision criteria.

Question 8: What is the most effective way to inform you about parks facilities, services, and programs? (Response Count: 658)



Higher rating means more effective (5-Most Effective, 1-Least Effective)

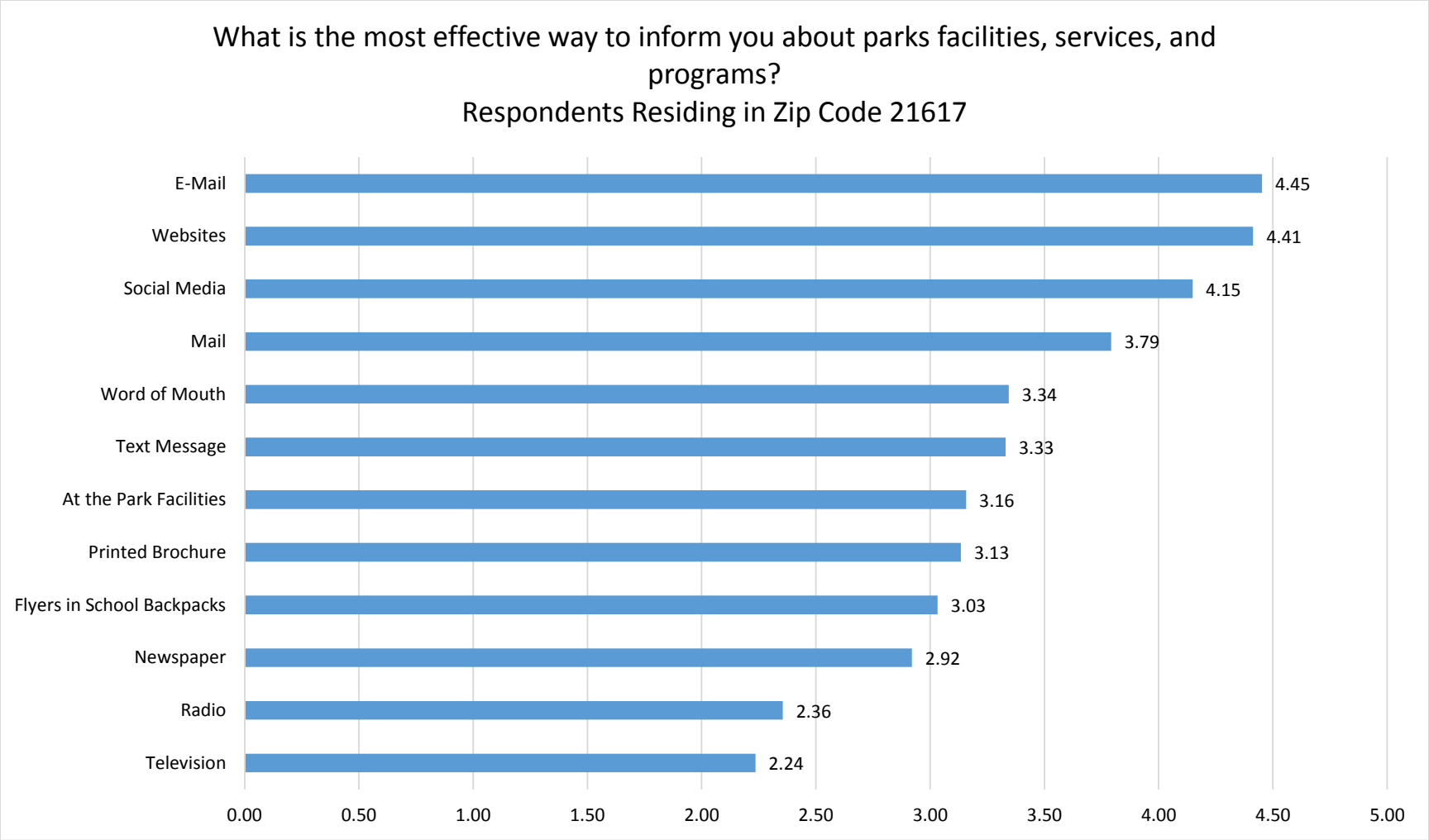
On average, the most effective way to inform respondents about parks facilities, services, and programs are (in rank order): e-mail (4.42), websites (4.26), social media (4.03), mail (3.61), and word of mouth (3.29). The least effective way to inform respondent is through television (2.23), radio (2.27), flyers in school backpacks (2.88), newspaper (2.89), and text message (3.13).

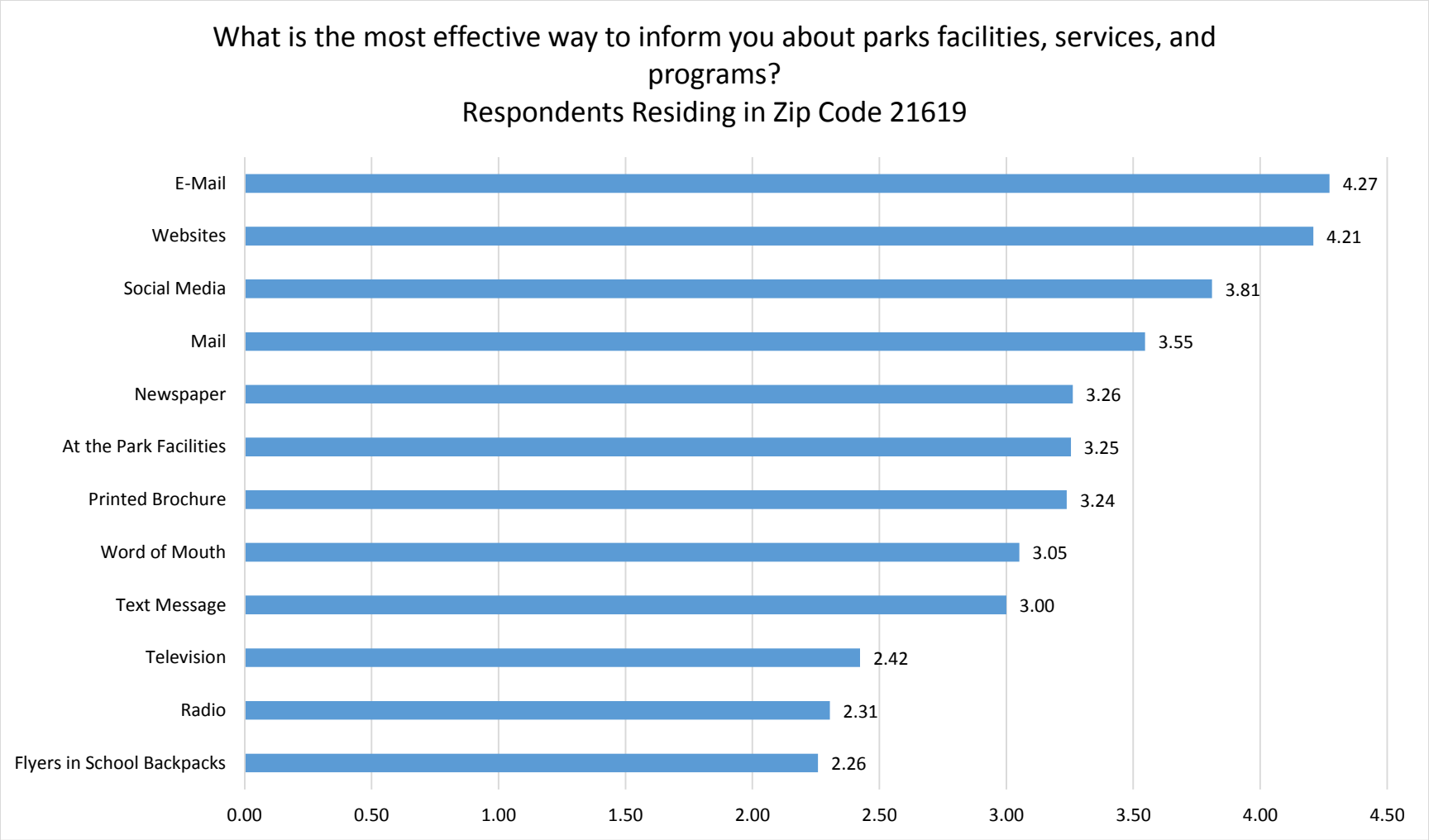
Open-ended response summary:

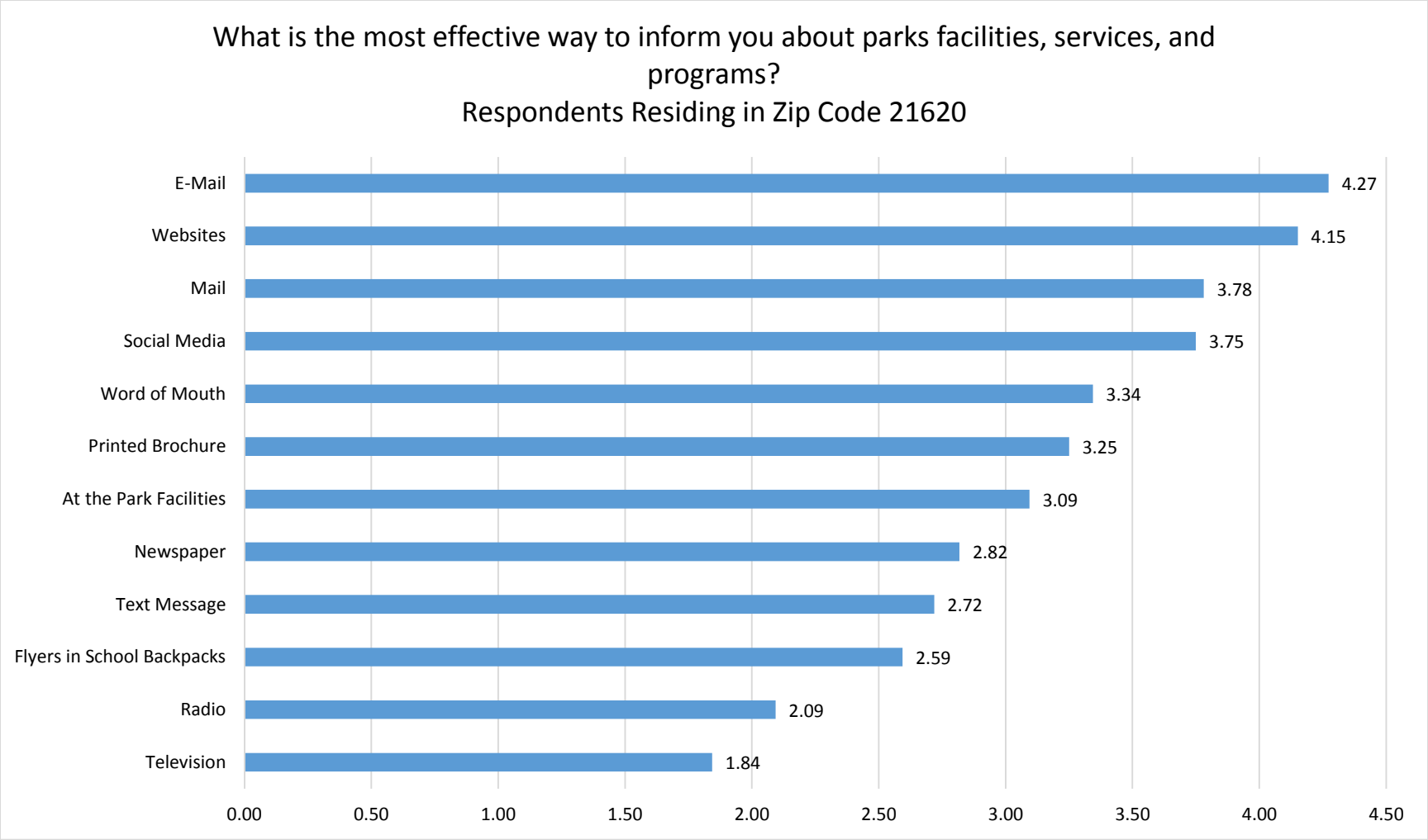
- Email
  - For those with school age children, information can be included in the weekly emails from the schools
  - For those without school age children, email from the county
- Social media (including Facebook)
- QAC.org website
- Printed brochures
  - Available at visitor's center and local shops
  - Direct mailers to residents
- Posting signs on billboards along the Cross Island Trail

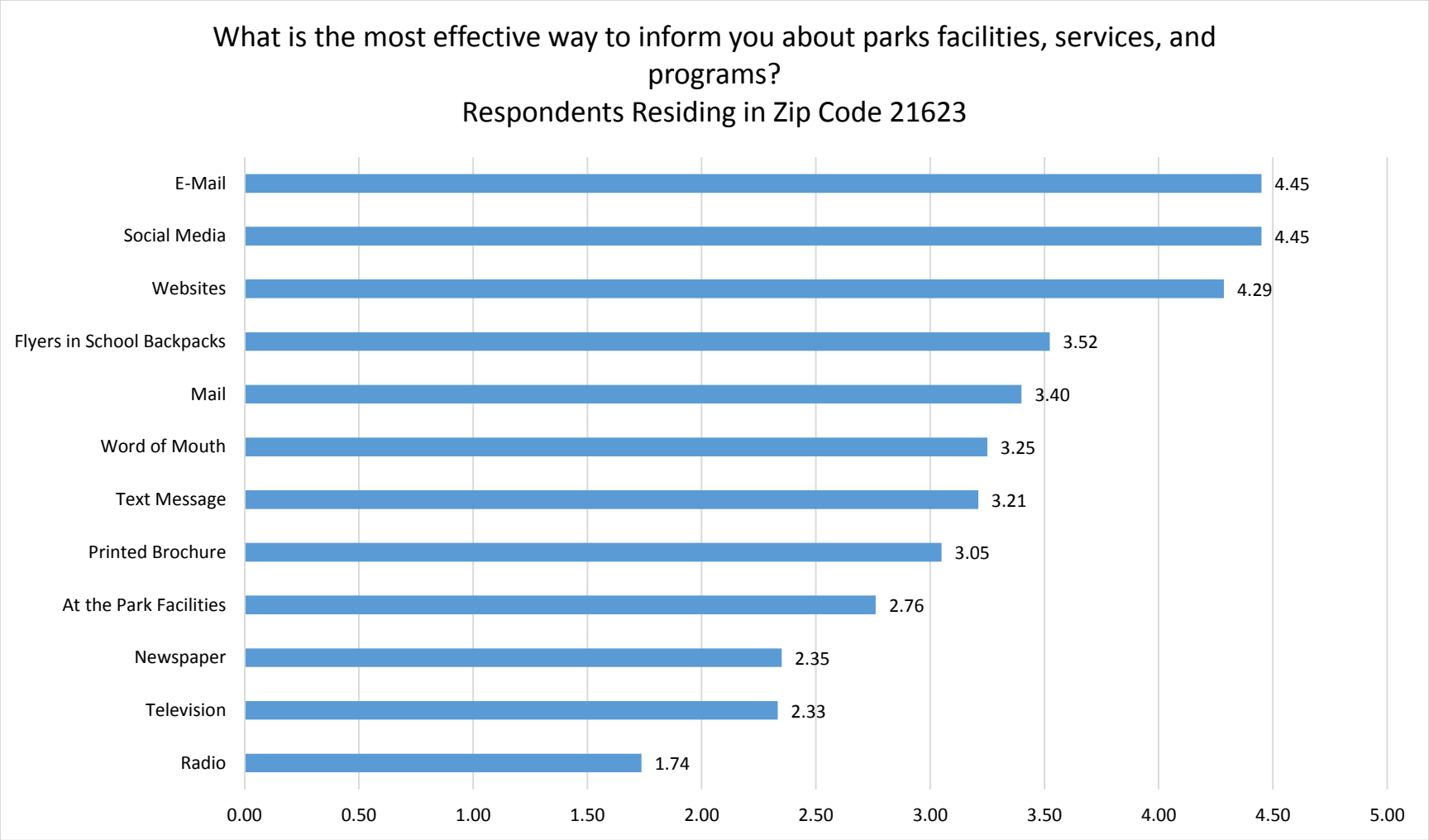
Responses to Question 8 were cross-tabulated with the zip code in which respondents reside. The breakdown of response by zip code is provided below. Overall, email and websites consistently ranked in the top three most effective ways to inform respondents about parks facilities, services and programs. Social media was also ranked in the top three most effective ways to inform respondents with the exception of those in zip code 21620 for which social media was ranked fourth (while mail was ranked third). The fourth and fifth preferences vary by zip code and are as follows:

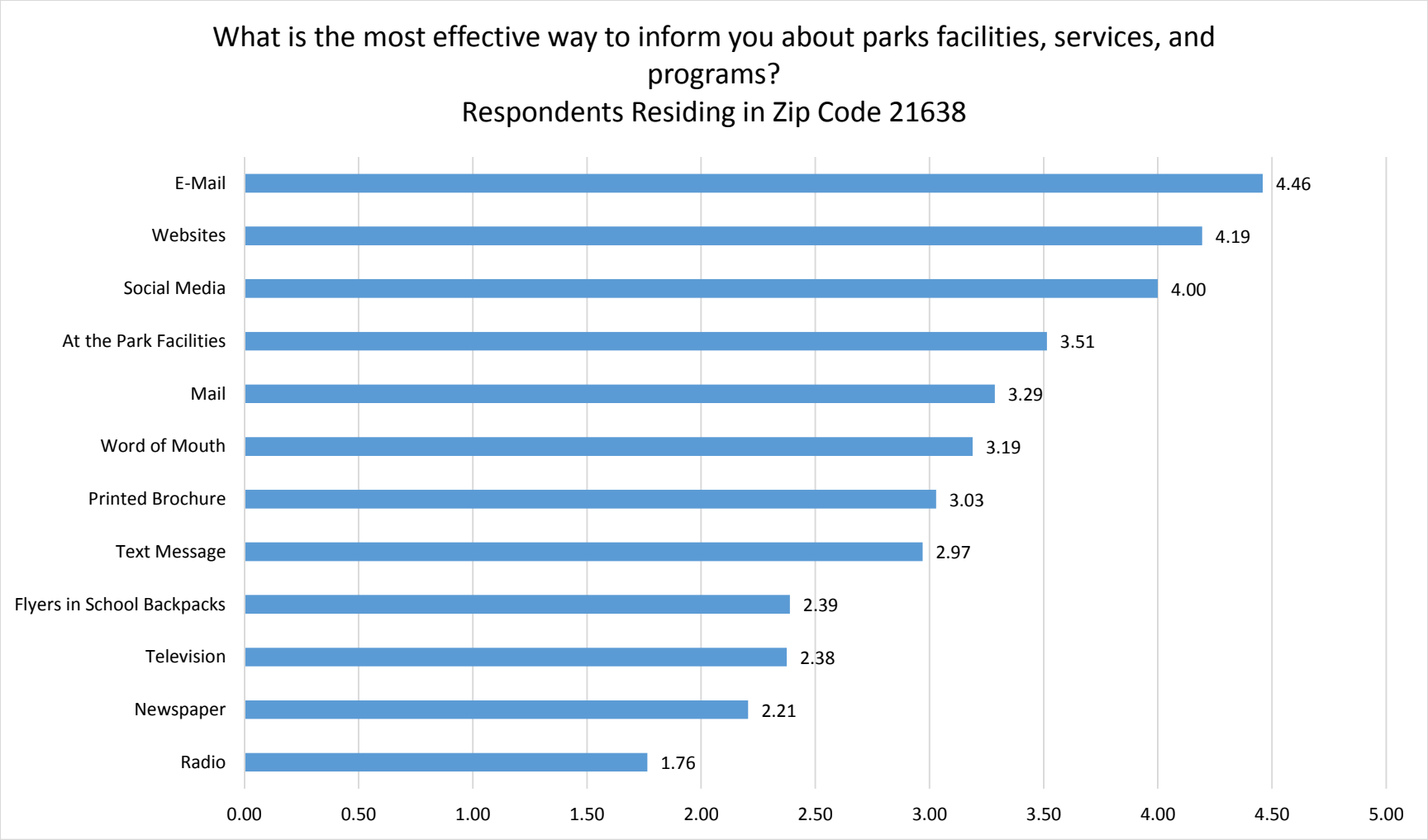
	21617	21619	21620	21623	21638	21658	21666
Fourth	Mail	Mail	Social Media	Flyers in School Backpacks	At the Park Facilities	Word of Mouth	Mail
Fifth	Word of Mouth	Newspaper	Word of Mouth	Mail	Mail	Mail	Word of Mouth

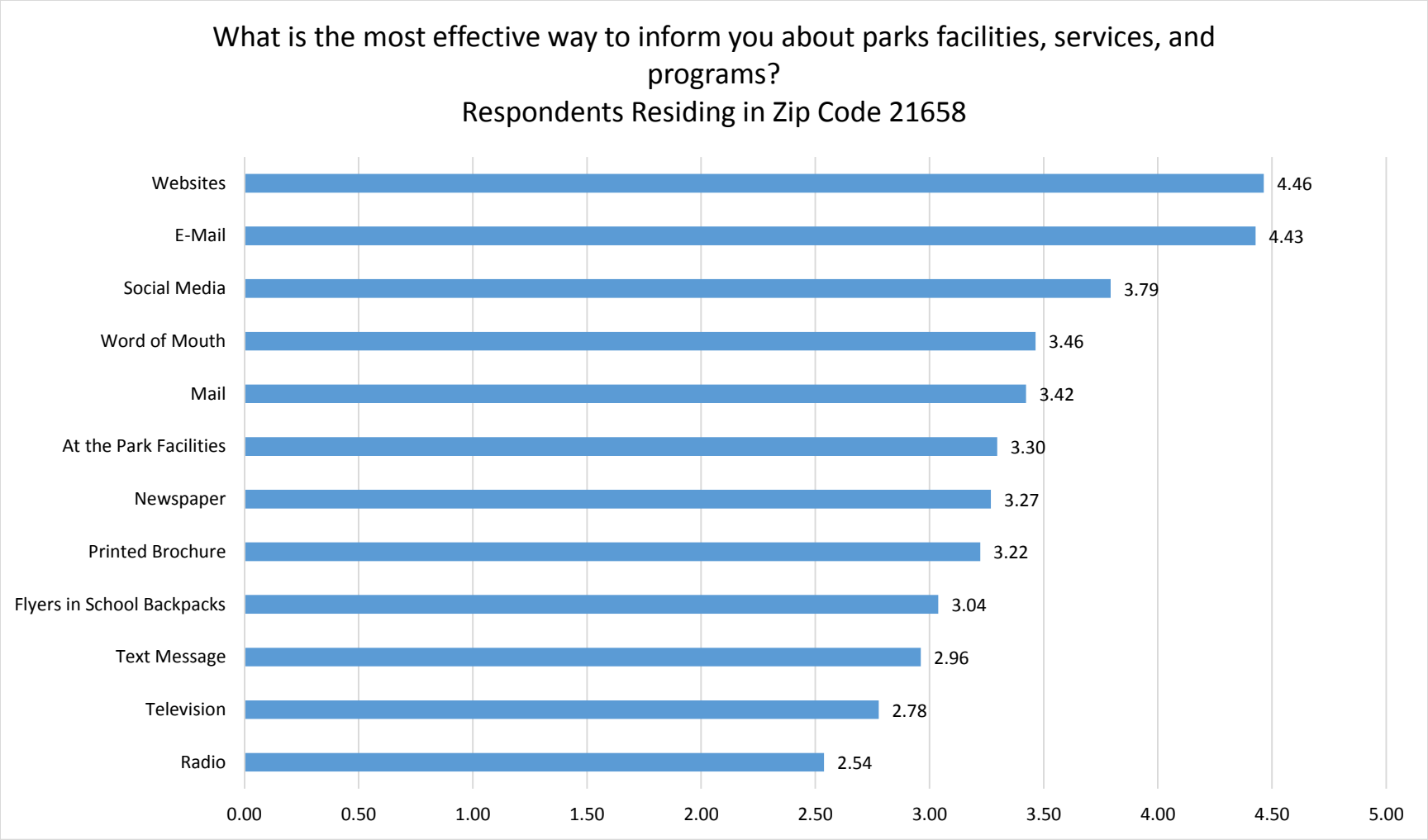

What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21617
E-Mail
4.45
Websites
4.41
Social Media
4.15
Mail
3.79
Word of Mouth
3.34
Text Message
3.33
At the Park Facilities
3.16
Printed Brochure
3.13
Flyers in School Backpacks
3.03
Newspaper
2.92
Radio
2.36
Television
2.24
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00

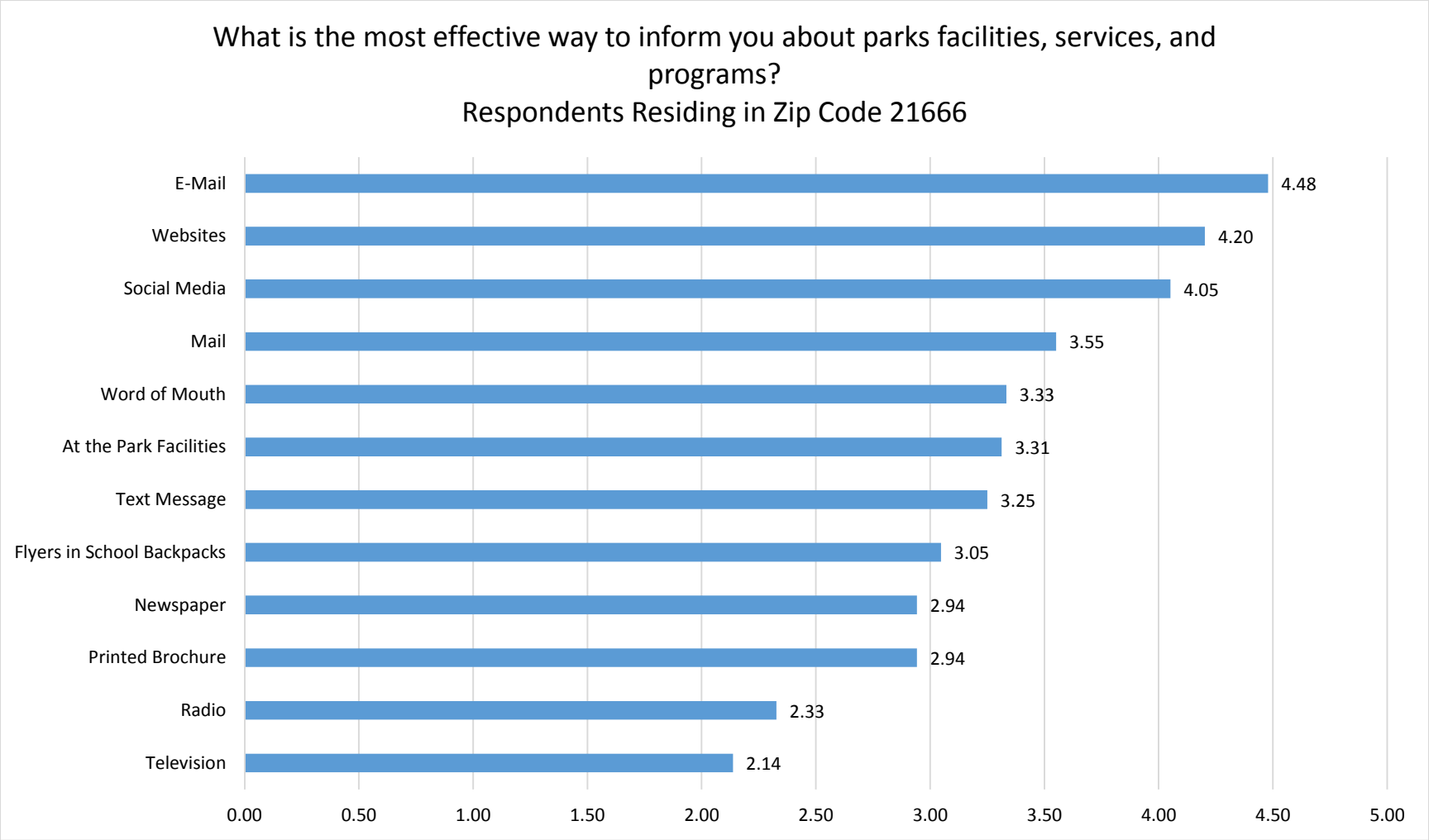

What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21619
E-Mail
4.27
Websites
4.21
Social Media
3.81
Mail
3.55
Newspaper
3.26
At the Park Facilities
3.25
Printed Brochure
3.24
Word of Mouth
3.05
Text Message
3.00
Television
2.42
Radio
2.31
Flyers in School Backpacks
2.26
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50


What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21620
E-Mail
4.27
Websites
4.15
Mail
3.78
Social Media
3.75
Word of Mouth
3.34
Printed Brochure
3.25
At the Park Facilities
3.09
Newspaper
2.82
Text Message
2.72
Flyers in School Backpacks
2.59
Radio
2.09
Television
1.84
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50

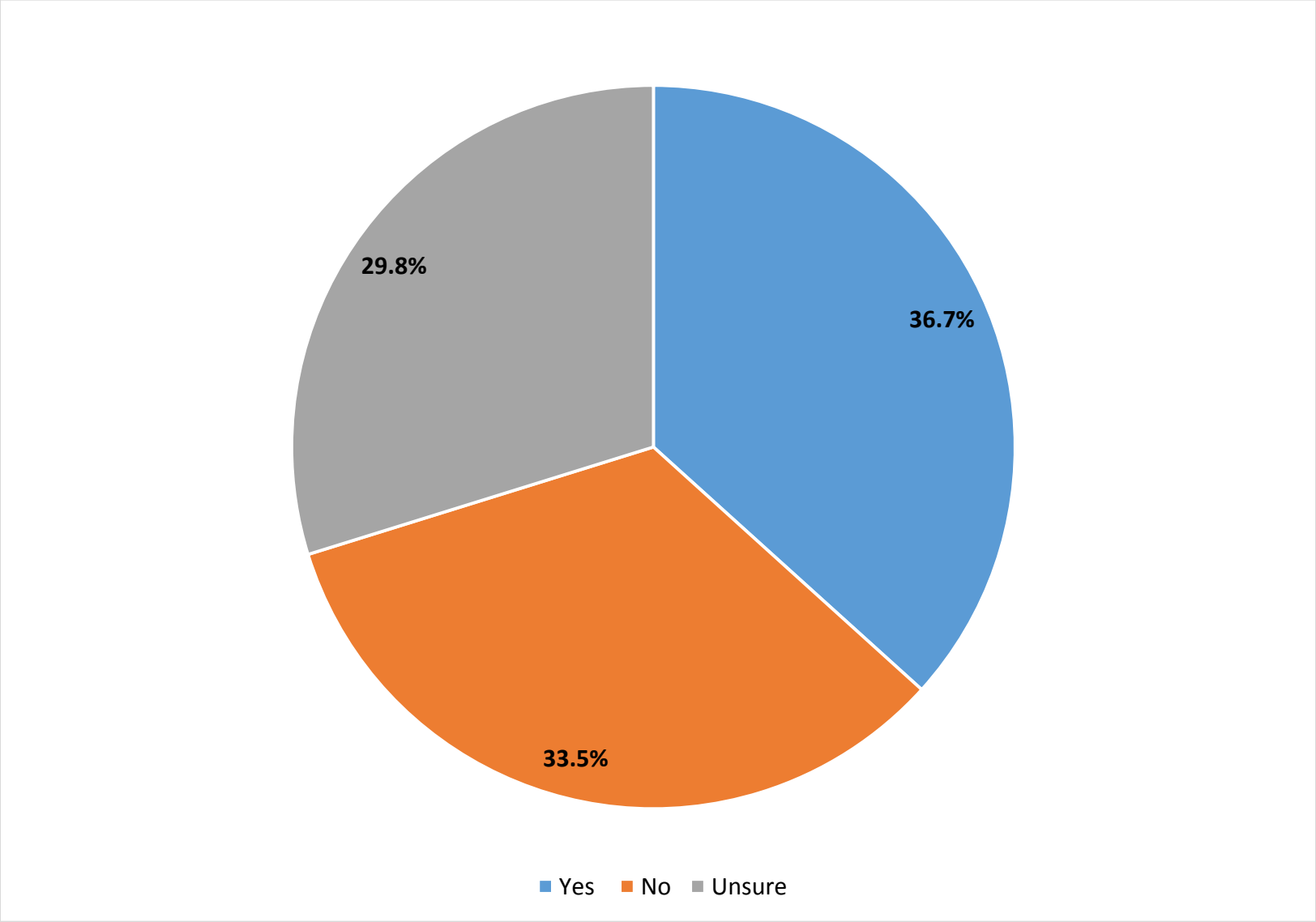

What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21623
E-Mail
4.45
Social Media
4.45
Websites
4.29
Flyers in School Backpacks
3.52
Mail
3.40
Word of Mouth
3.25
Text Message
3.21
Printed Brochure
3.05
At the Park Facilities
2.76
Newspaper
2.35
Television
2.33
Radio
1.74
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00


What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21638
E-Mail
Websites
Social Media
At the Park Facilities
Mail
Word of Mouth
Printed Brochure
Text Message
Flyers in School Backpacks
Television
Newspaper
Radio
4.46
4.19
4.00
3.51
3.29
3.19
3.03
2.97
2.39
2.38
2.21
1.76
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00

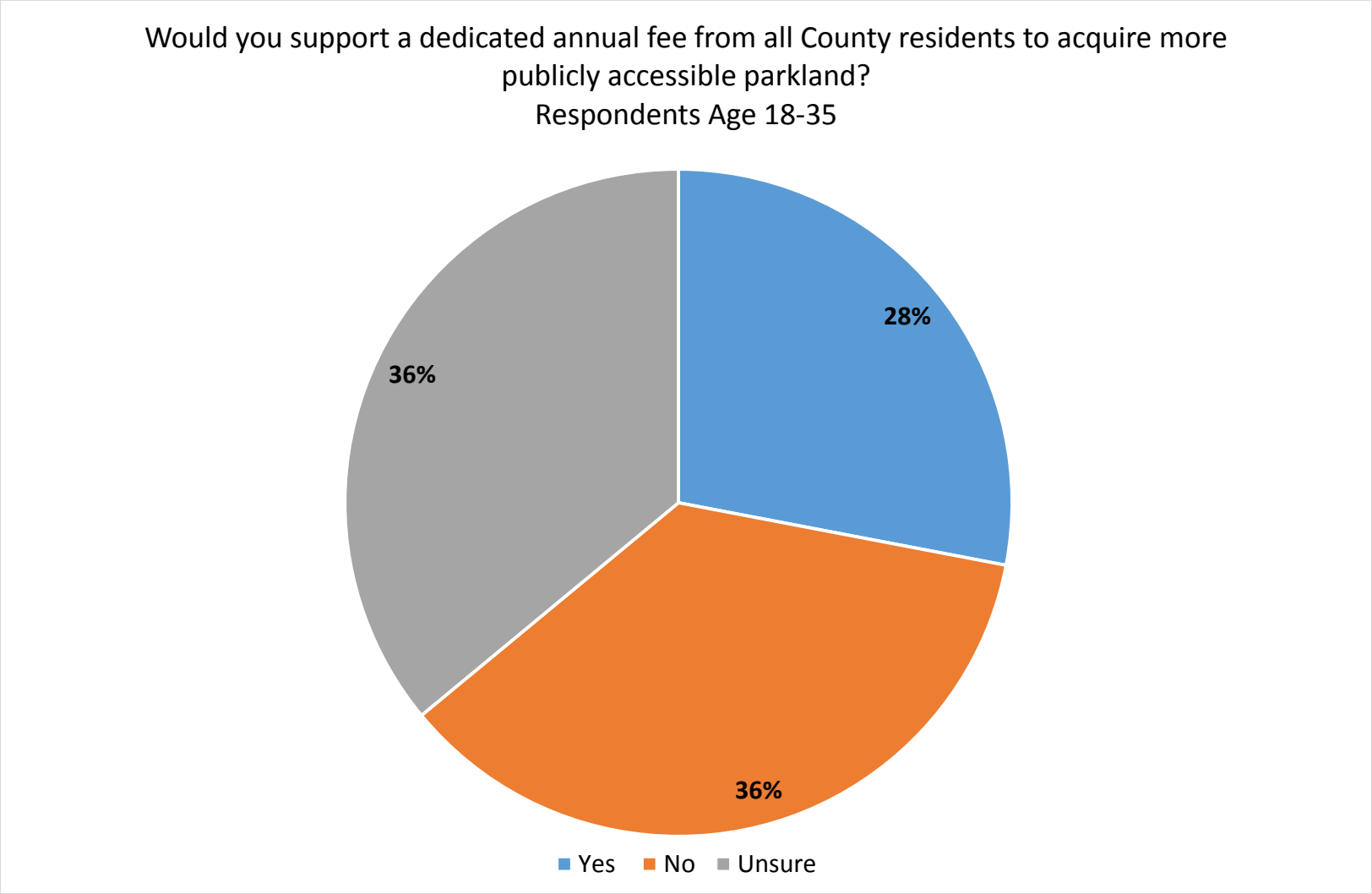

What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21658
Websites
4.46
E-Mail
4.43
Social Media
3.79
Word of Mouth
3.46
Mail
3.42
At the Park Facilities
3.30
Newspaper
3.27
Printed Brochure
3.22
Flyers in School Backpacks
3.04
Text Message
2.96
Television
2.78
Radio
2.54
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00

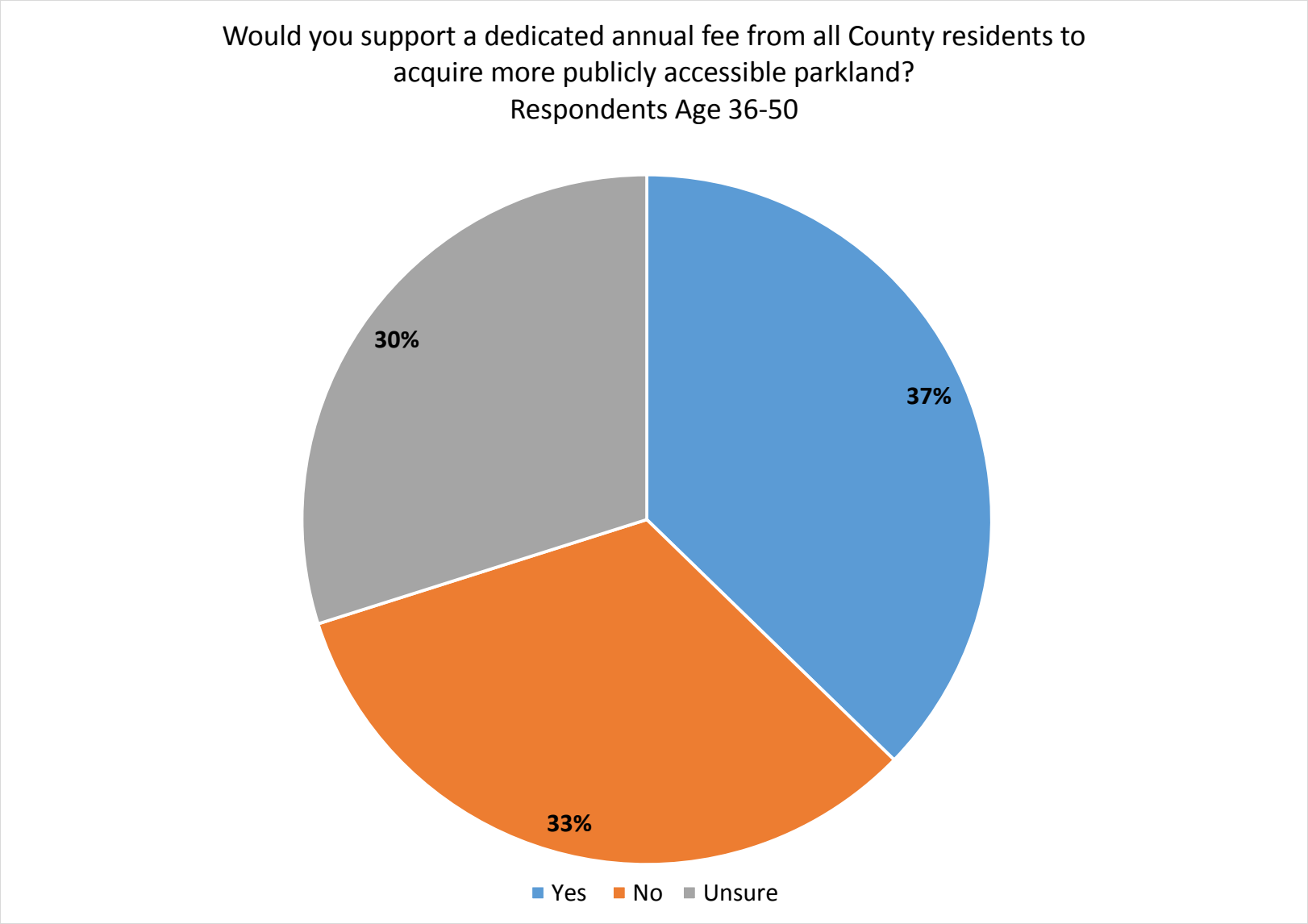

What is the most effective way to inform you about parks facilities, services, and programs?
Respondents Residing in Zip Code 21666
E-Mail
4.48
Websites
4.20
Social Media
4.05
Mail
3.55
Word of Mouth
3.33
At the Park Facilities
3.31
Text Message
3.25
Flyers in School Backpacks
3.05
Newspaper
2.94
Printed Brochure
2.94
Radio
2.33
Television
2.14
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
4.00
4.50
5.00

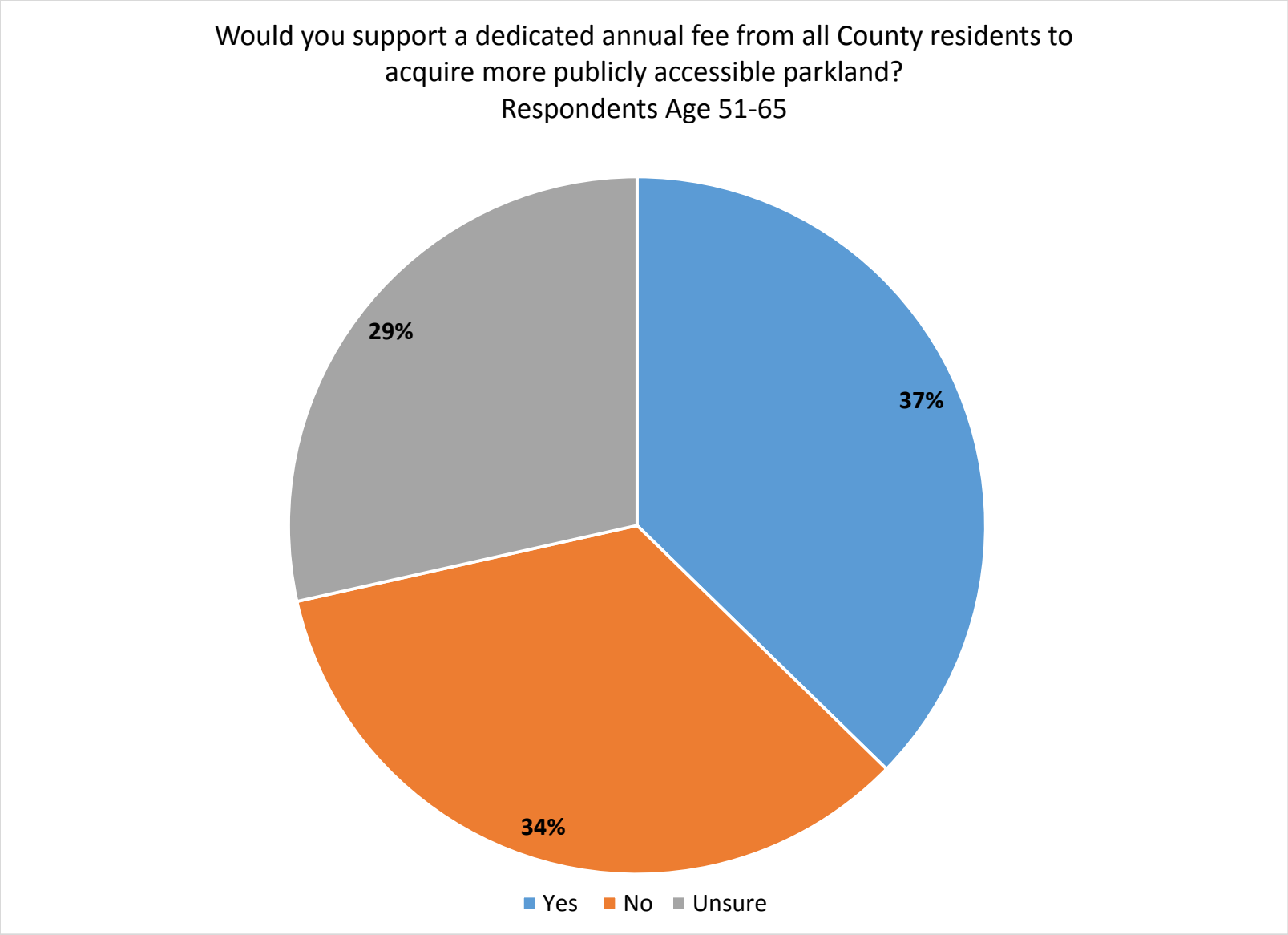
Question 9: Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland? (Response Count: 671)

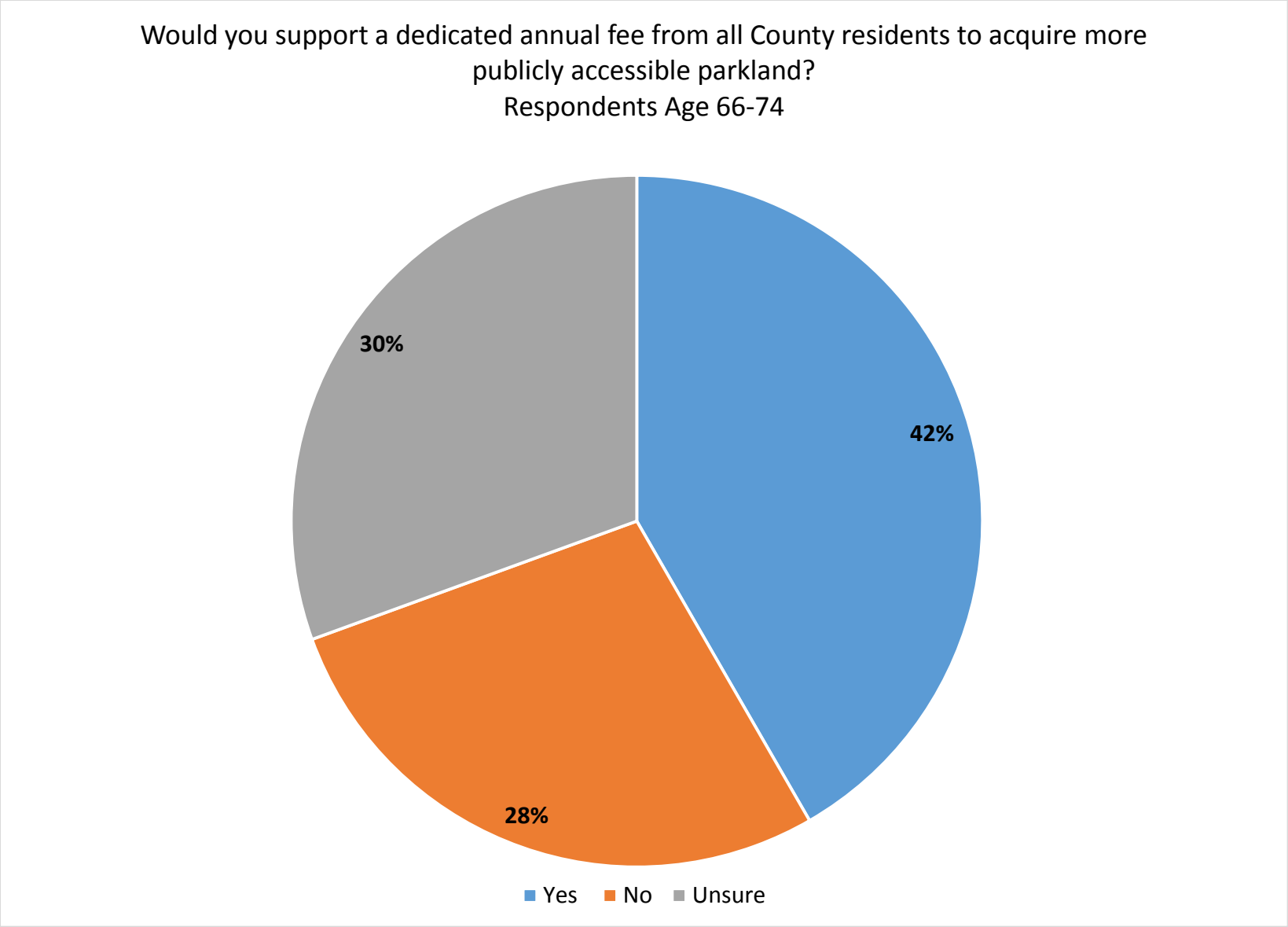


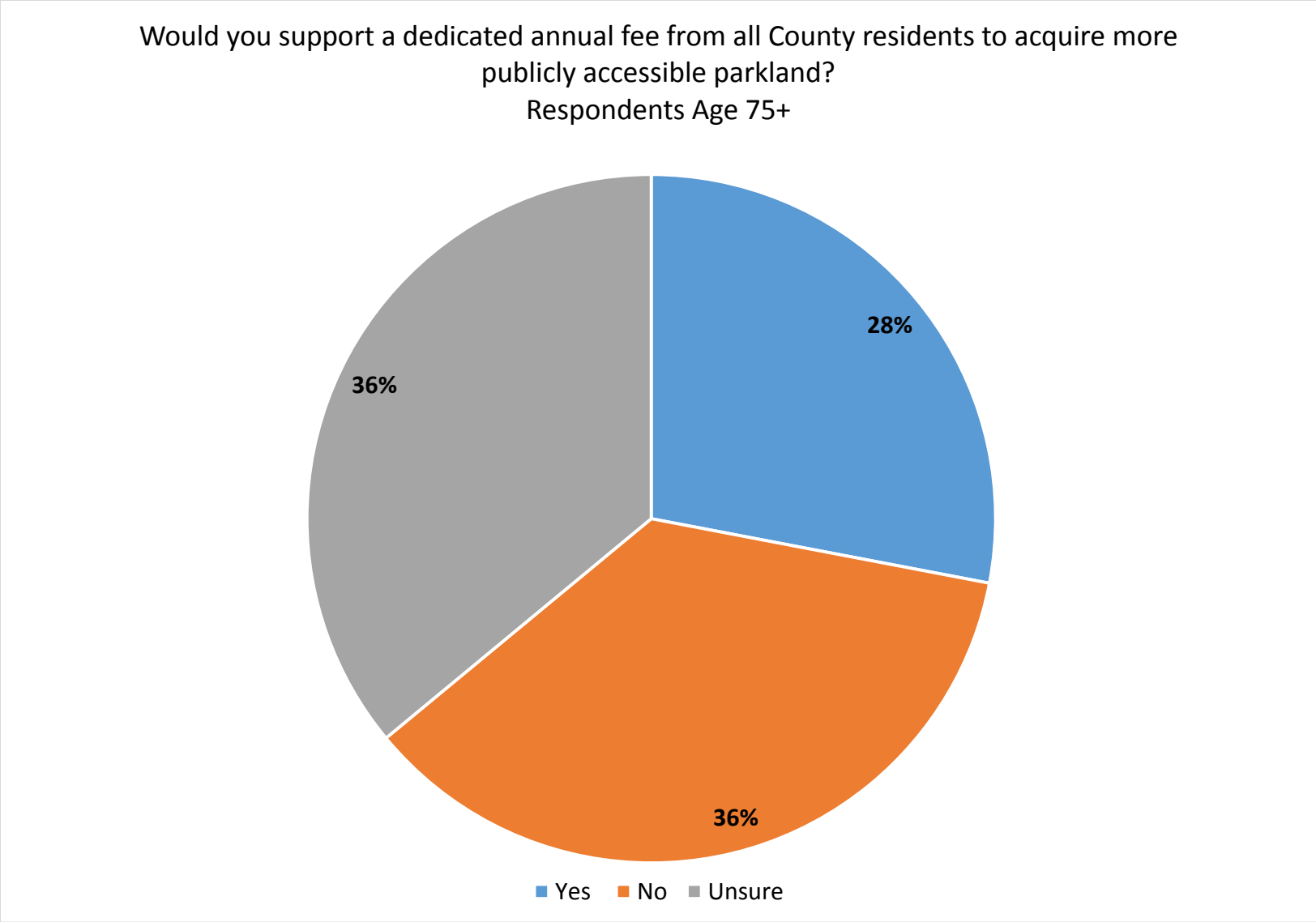
The responses to Question 9 were cross-tabulated with respondents' age and household income. The breakdown of response by age is provided below. The only age categories for which a higher percentage of respondents are willing to support a dedicated annual fee from all County residents to acquire more publicly accessible parkland is the 66-74 year old cohort. A higher percentage of respondents in the 18-35 year old cohort and the 75+ year old cohort are unwilling to support such a fee.



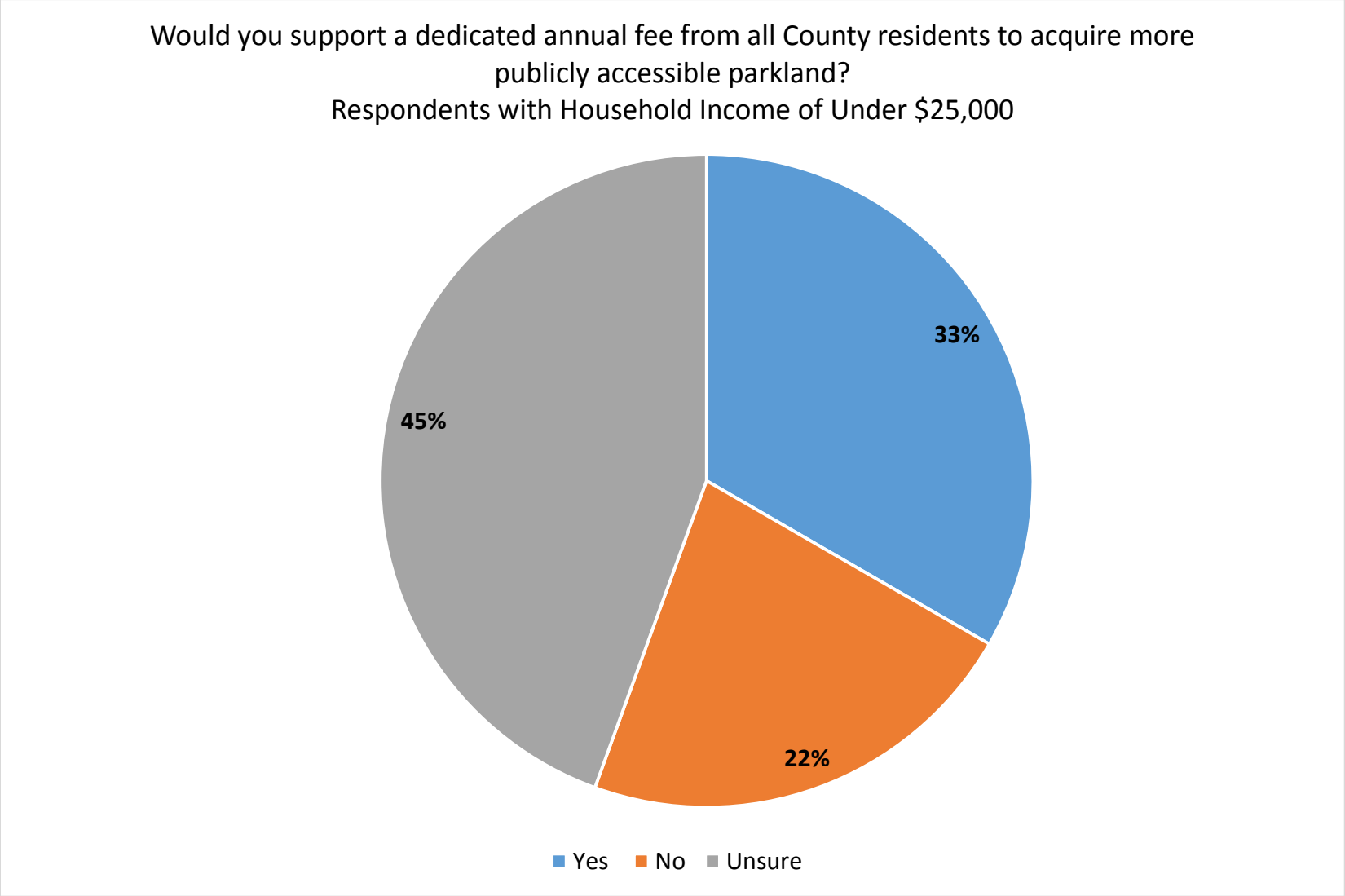

Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents Age 36-50
30%
37%
33%
Yes
No
Unsure

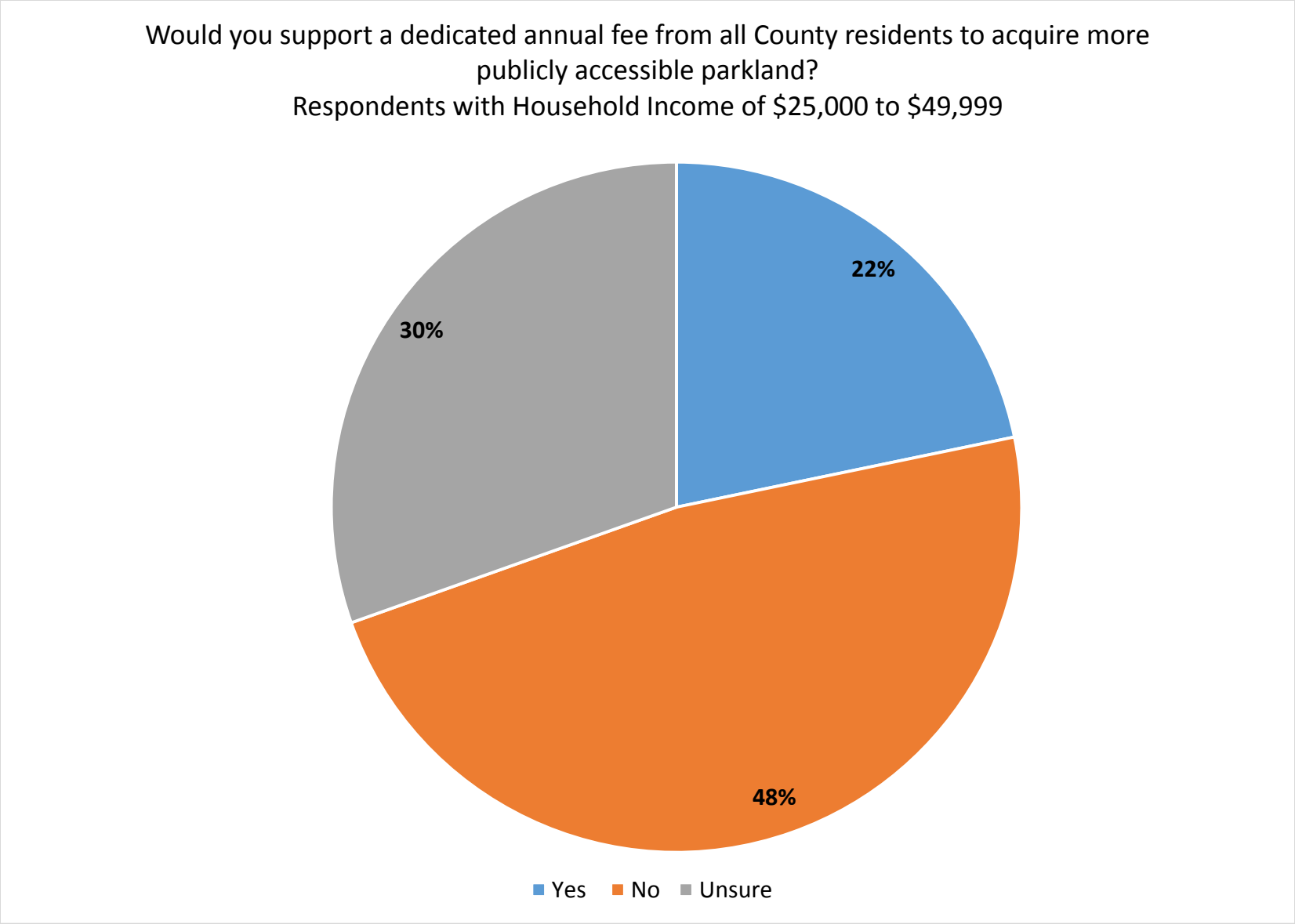

Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents Age 51-65
29%
37%
34%
Yes
No
Unsure

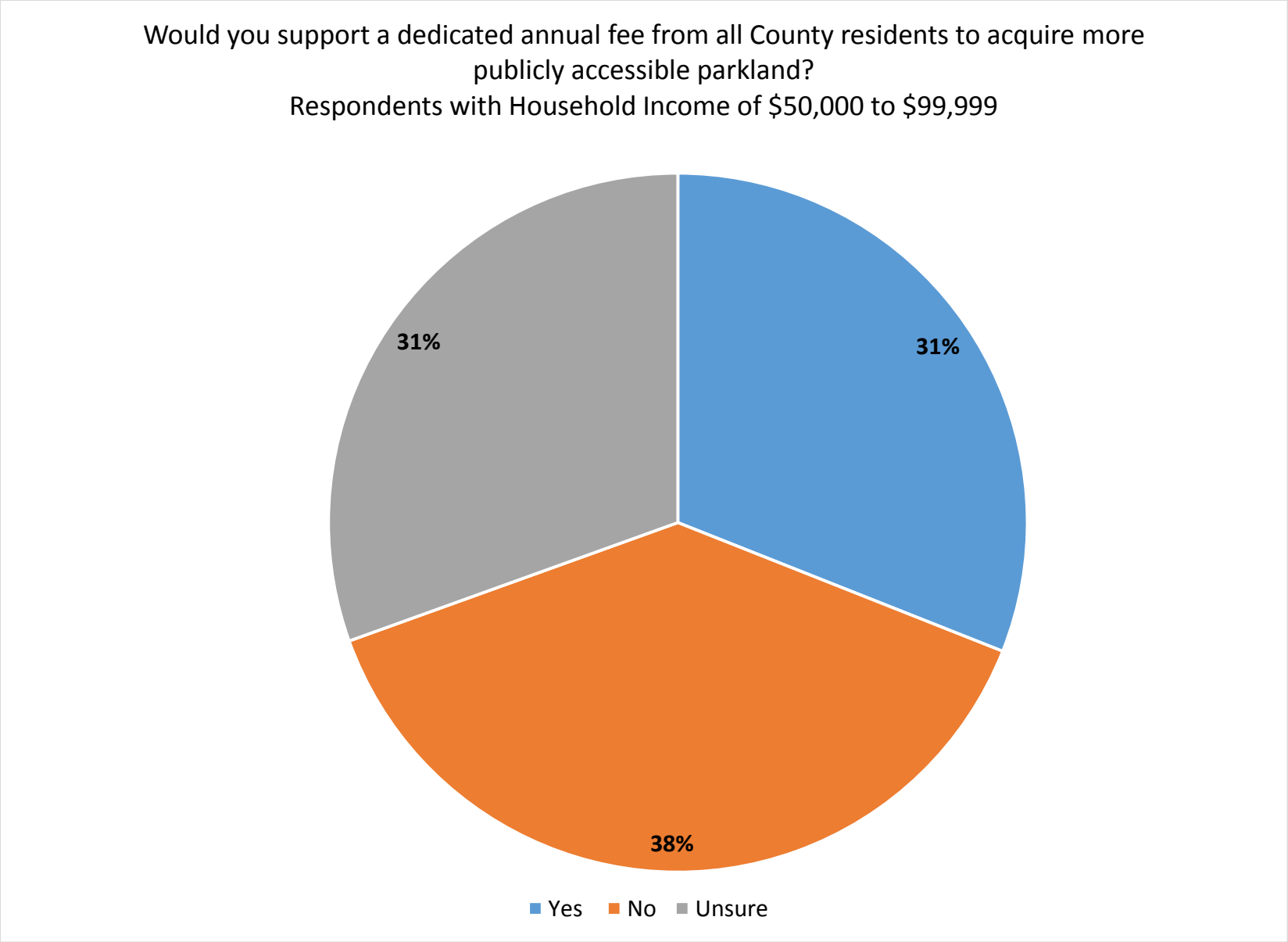

Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents Age 66-74
30%
42%
28%
Yes
No
Unsure

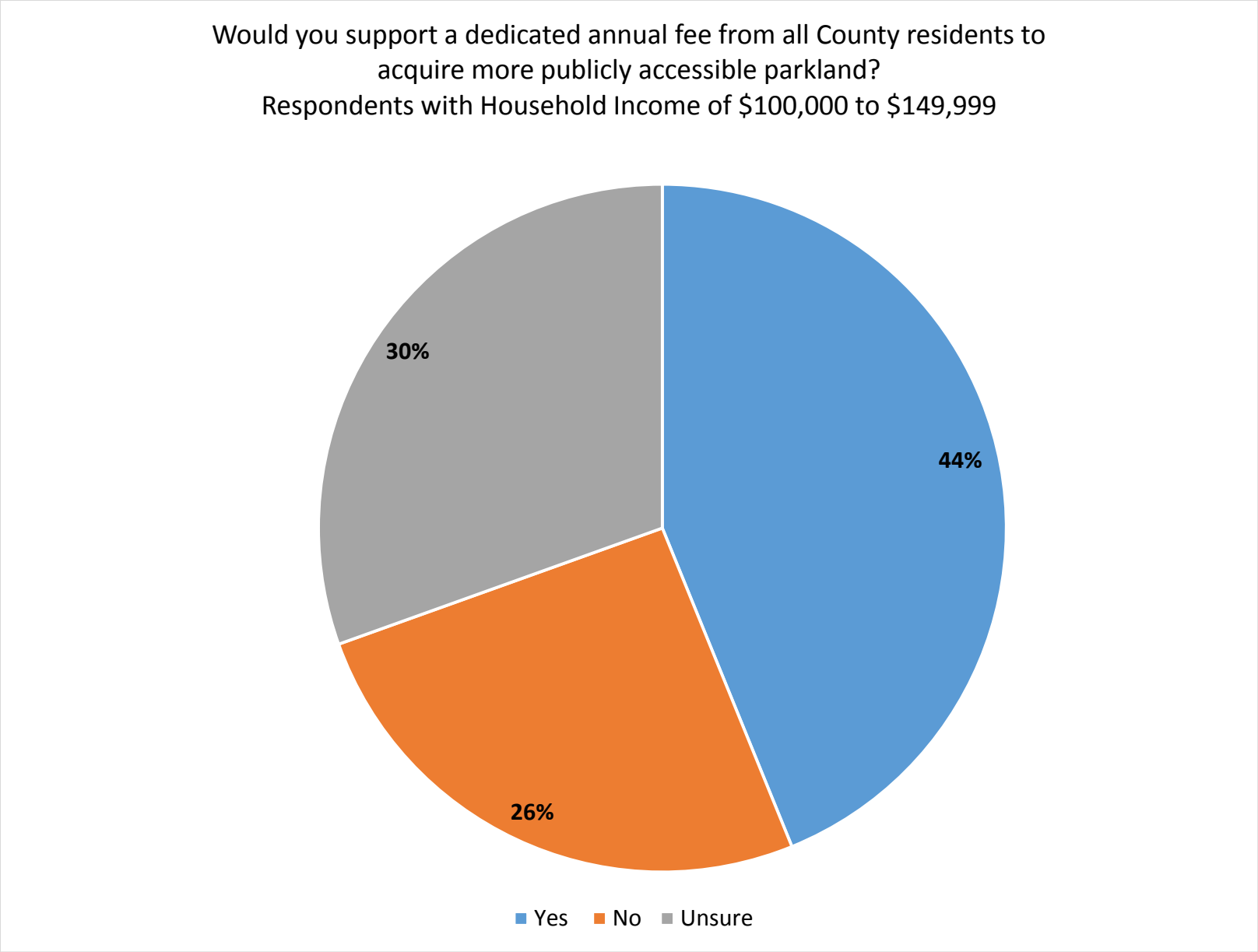

Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents Age 75+
28%
36%
36%
Yes
No
Unsure

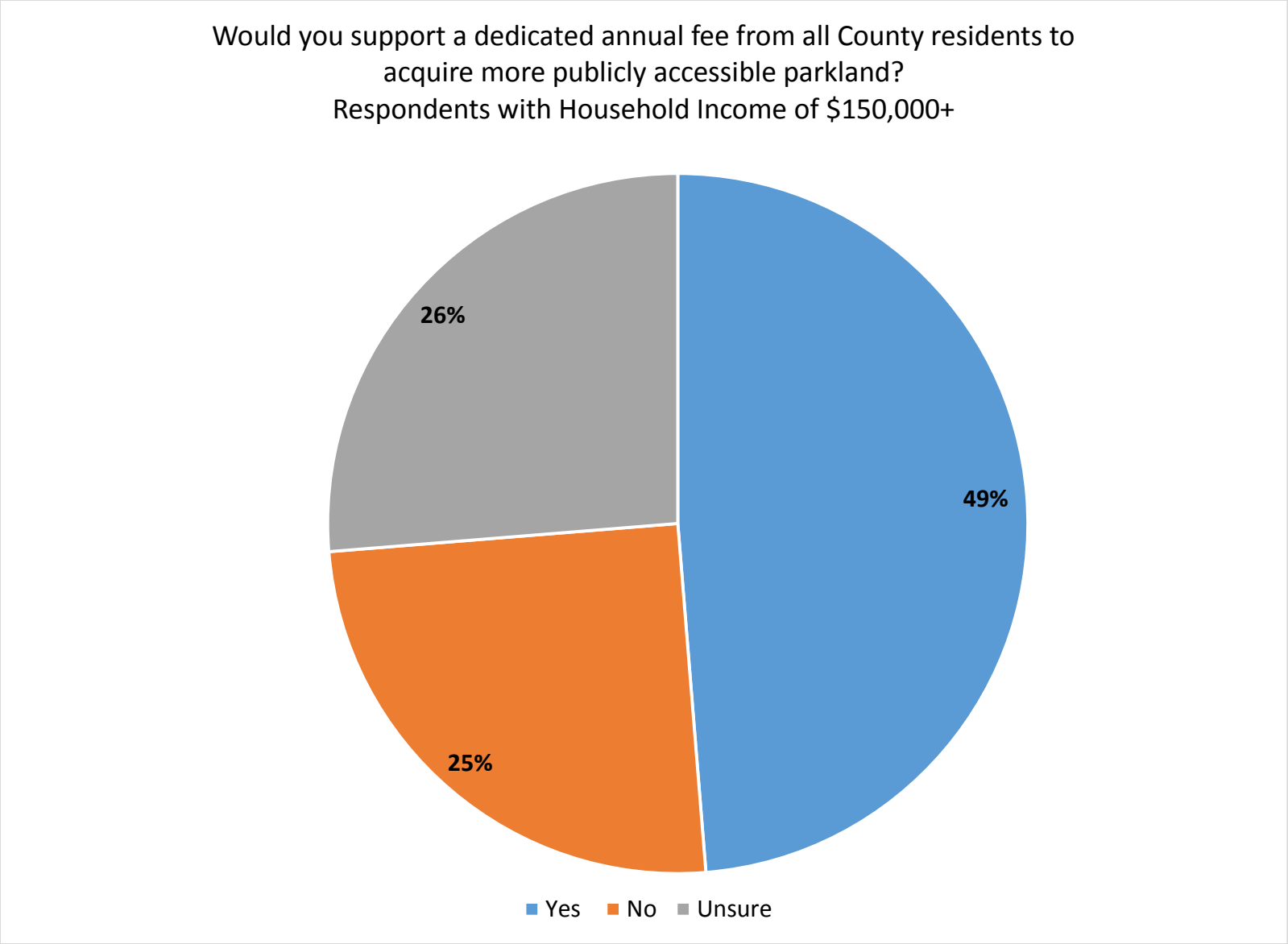
The breakdown of response by household income is provided below. As household income increases, the willingness to support a dedicated annual fee from all County residents to acquire more publicly accessible parkland increases.




Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents with Household Income of $25,000 to $49,999
22%
48%
30%
Yes
No
Unsure

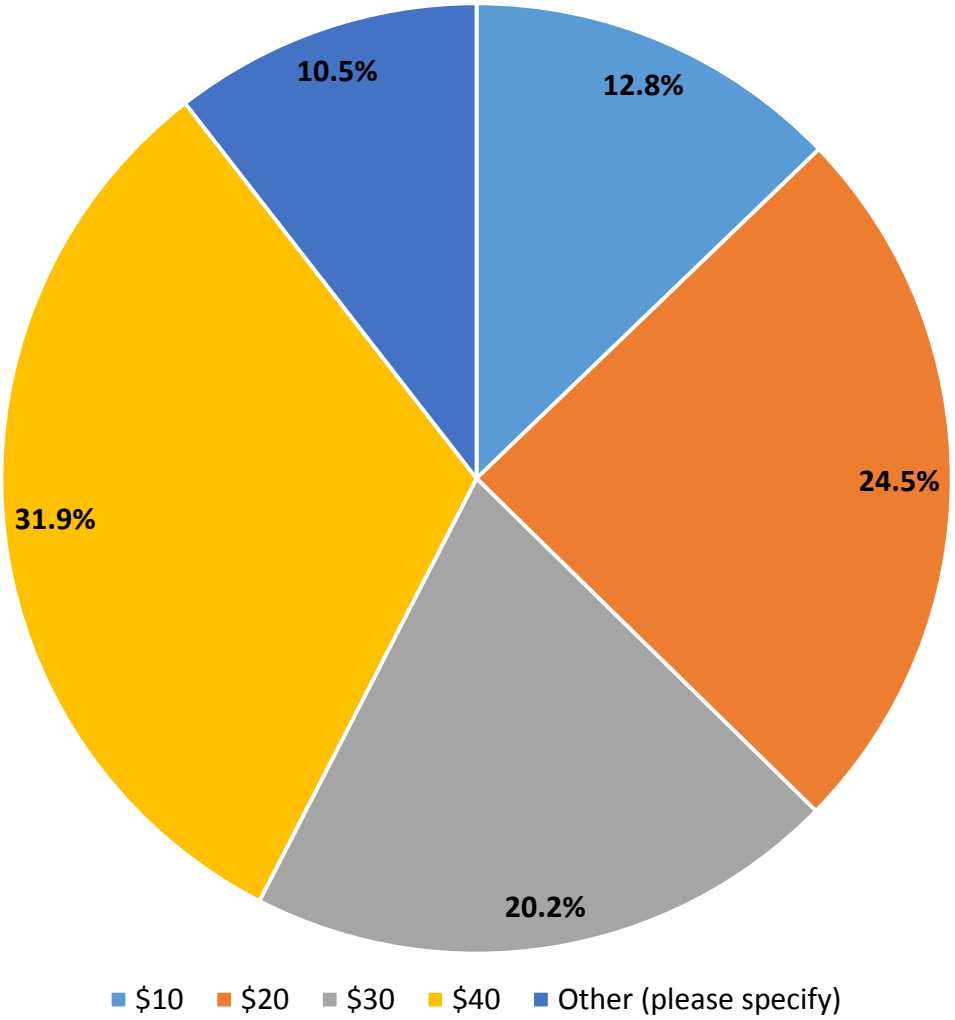

Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents with Household Income of $50,000 to $99,999
31%
31%
38%
Yes
No
Unsure


Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents with Household Income of $100,000 to $149,999
30%
44%
26%
Yes
No
Unsure


Would you support a dedicated annual fee from all County residents to acquire more publicly accessible parkland?
Respondents with Household Income of $150,000+
26%
49%
25%
Yes
No
Unsure

Question 10: How much would you be willing to spend annually to acquire more publicly accessible parkland? (Response Count: 257)

*This question was asked only of those who responded "yes" to question 9 or skipped question 9 in the survey logic.

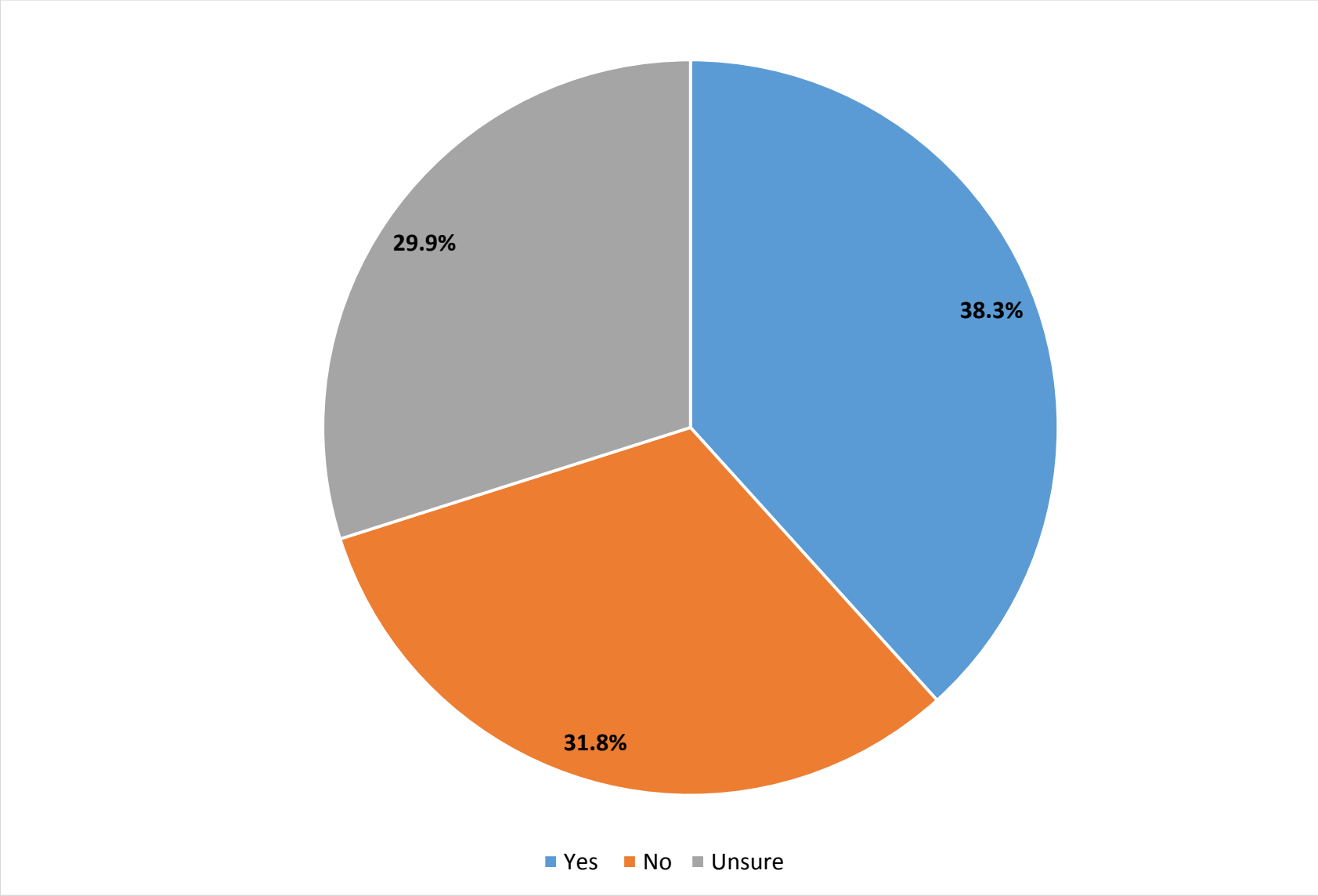


Other (please specify):

27 participants identified another amount that they would be willing to spend annually to acquire more publicly accessible parkland. These additional responses are as follows:

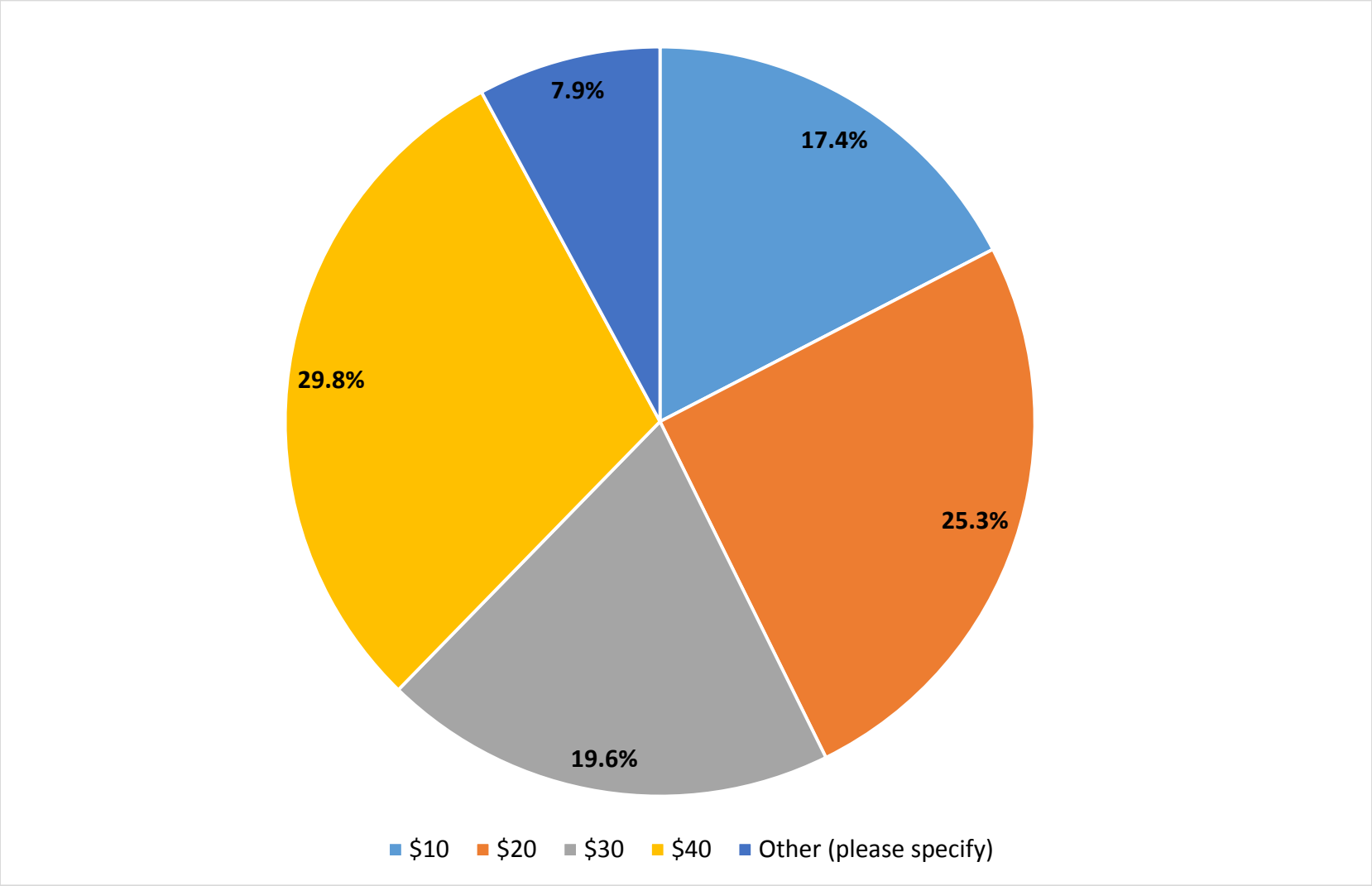
Minimum	$0
Maximum	$500
Average	$90

Question 11: Would you support a dedicated annual fee from all residents to develop more publicly accessible recreation facilities? (Response Count: 666)



Question 12: How much would you be willing to spend annually to develop more publicly accessible recreation facilities? (Response Count: 265)

*This question was asked only of those who answered "yes" to question 11 or skipped question 11 in the survey logic.

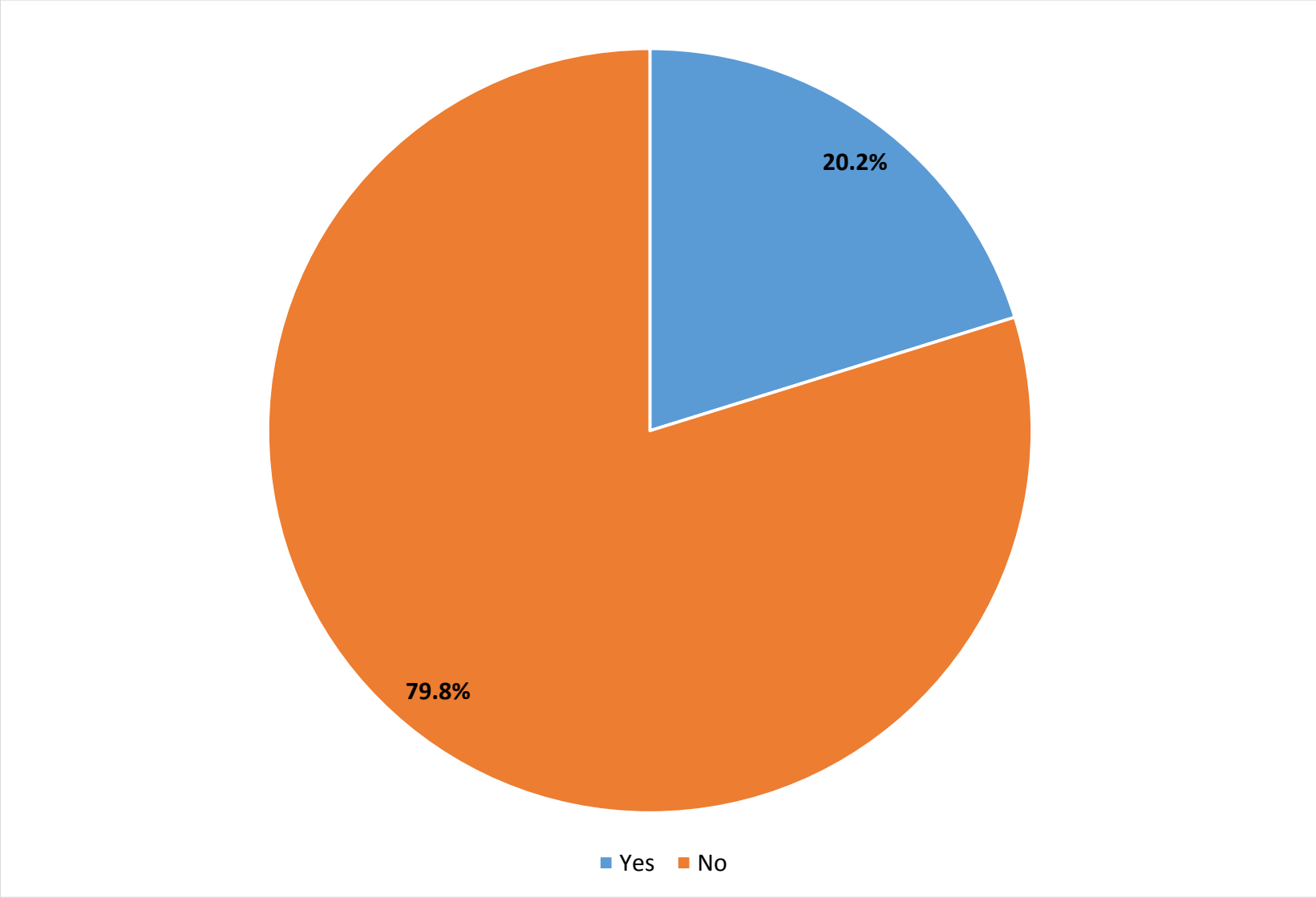


Other (please specify):

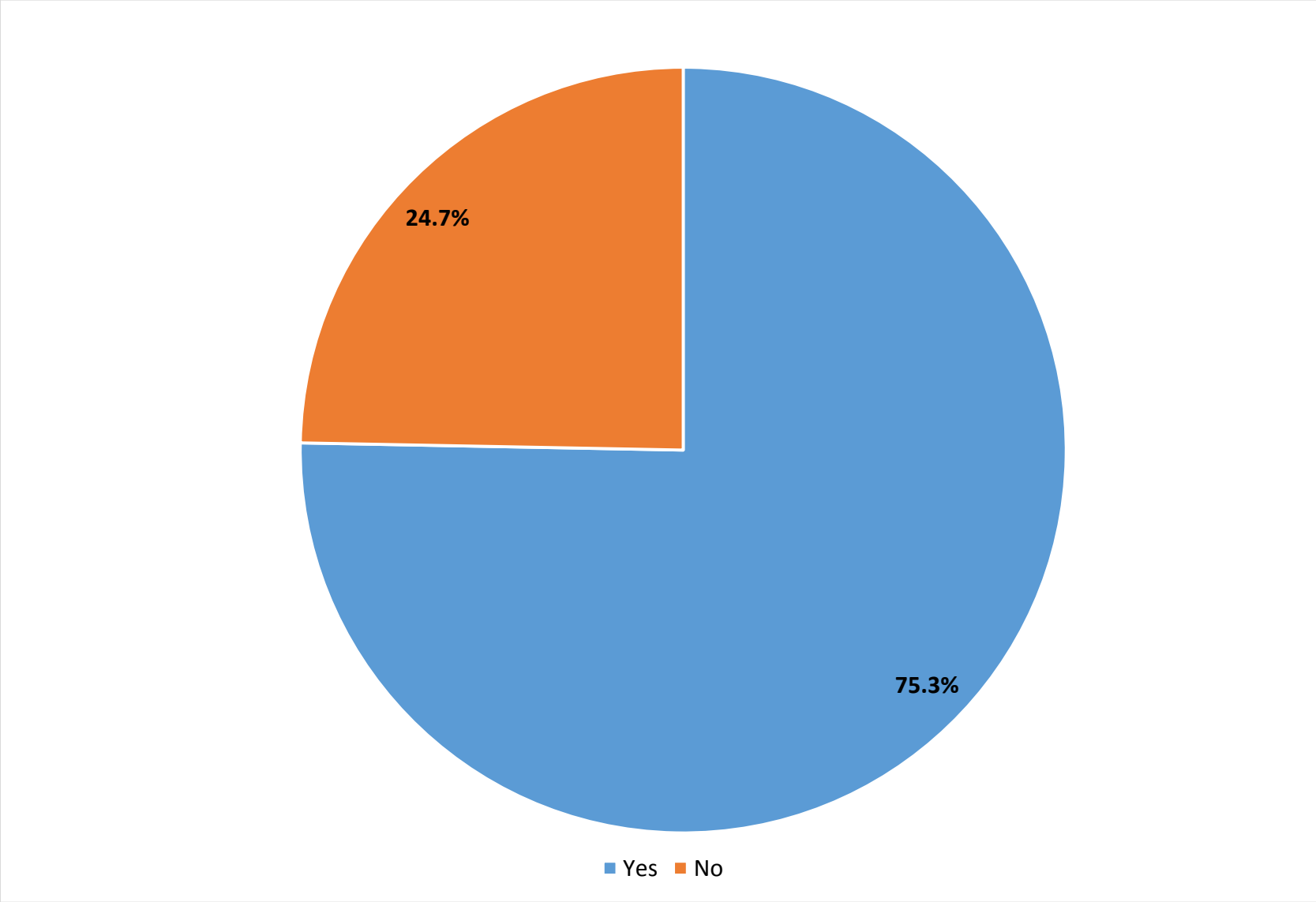
21 participants identified another amount that they would be willing to spend annually to acquire more publicly accessible parkland. These additional responses are as follows:

Minimum	$1
Maximum	$500
Average	$111

Question 13: Would you support admittance fees for use of specific park system facilities/sites by county residents? (Response Count: 665)



Question 14: Would you support admittance fees for use of specific park system facilities/sites by non-county residents? (Response Count: 667)



Question 15: If you have a specific amenity or facility request that you would like to see in Queen Anne's County, please list or describe your request here (be specific, where in the county would you like to see this amenity or facility?). (Response Count: 293)

A summary of the responses received is provided below:

Facility/amenity requests with no specific location noted:

- Restrooms at all parks and landings/plumbed restrooms at facilities with high traffic volume
- Swimming pool
- Public beach for family swimming
    - Outside of Kent Island
- Large area nature preserve (on the Bay)
    - With multi-use trails
- Gymnastics and martial arts center
- More bike trails
- Acquire and preserve historic sites for public use
- Additional disc golf course in the northern end of the county
- Adequate lighting at parks and fields
- Centrally located community center
- Adult sports league
- Tennis courts
- More dog parks
- Food services at sports fields
- Boat and kayak launch areas
- Additional sports fields and turf fields
- Equestrian trails and horseback riding (one suggested location was the northern part of the county)
- Better trash removal at all county parks
- Skateboard park
- Centrally located indoor athletic facility with multi-use fields, pool, track, and multi-use courts
- Dog training facility
- Water park

- Climbing facility
- Indoor gym facility that includes volleyball courts
- A beach refreshment stand
- Yoga and exercise on the beach
- Driving range
- More golf in other areas of the county
- Movie theater
- Activities for kids and teens/youth recreational facility
- Lighted walking trails
- Security cameras to monitor illicit activities that occur at piers and parks
- Accessible, well-maintained public restrooms
- Archery/gun ranges
- More open space-parks
- Water fountains along the trails
- Restrooms at dog parks
- More pocket parks for quiet reflection at various locations
- Use of sports fields during summer
- More unpaved nature trails
- Handicapped accessible swimming in any location
- Walking trails without hunting on the same land
- Rugged hiking trails with hills, walls, obstacles, etc.
- More bike/walking trails with water views
- More beach areas that you could reach by boat
- Ice skating rink
- Neighborhood parks with facilities
- More activities with the Bay Bridge Airport
- Boat slips, boat related events, and boat related services and facilities
- North county public trails for hiking
- More facilities outside of Kent Island
- Handicapped parking spaces for trailers at all county landings
- Dedicated turf field for lacrosse only
- Outdoor fitness park

- North county trails and nature opportunities, preferably near the river
- The County already does too much. Do less so taxes can be lowed.
- Better scheduling of sports fields
- Boat rentals at certain accessible parks
- Add more fishing piers
- Splash pad/splash park
- More parks such as Terrapin Park and Matapeake Beach
- Outdoor batting cage
- Indoor gymnasium
- Campgrounds
- Equipment rental

Facility/amenity requests for Kent Island:

- Fitness/indoor basketball court
- Dog park amenities needed: lighting, year-round water, and bathrooms
- Indoor/outdoor swimming pool
- Bike trail connecting Kent Island and Centreville
- Protected beach/kayak/sailing access areas
- Yoga on the beach
- Indoor community entertainment venue/performing arts center (Kent Island/Grasonville)
- Movie theater
- More boat launches
- Security/patrolling of the Cross Island Trail
- Signage to keep people from cutting through school properties to get to the dog park
- Multi-sports field complex
- Indoor tennis facility
- Community center/youth recreational facility
- County park “open houses” to highlight the amenities of each park to locals to increase awareness and usage
- More soccer fields
- Additional dedicated bike/walking trails
- Nature trails
- A free gym and outdoor park

- More senior citizen activities
- Ice skating rink

Facility/amenity requests for Centreville:

- Bike/walking trails
- Skate park (indoor/outdoor)
- Swimming pool
- Public access at Conquest Beach
- More tennis facilities
- Skate park
- Bike park
- More recreational activities for teens (Centreville or Kent Island)
- Handicapped parking for a boat trailer at Centreville Landing
- Public beach access
- More parking at the landing
- Dog park
- Sports complex for indoor practice
- Trail system
- Turf sports fields
- Tennis courts
- A trail from the end of Centreville Town along Hope Road and Tanyard Road
- Open the concession stand for soccer games
- Larger youth sport outdoor facility with lights
- Tennis courts and backboard at 4H Park and other local parks
- Community center with multiple swimming pools

Facility/amenity requests for Stevensville:

- Skateboard park (Stevensville or Chester)
- More sports fields
- Community pool (indoor/outdoor)
- Better publicize existing facilities

Facility/amenity requests for White Marsh Park:

- Plumbed bathrooms
- Hiking/walking trails
- Tarp or sun shades connecting backstops on baseball fields (protection from foul balls)
- Concessions/snack stand
- Playground
- Lacrosse fields
- Public pool at the park

Facility/amenity requests for Terrapin Park:

- Plumbed bathrooms
- More trash cans
- More parking

Facility/amenity requests for Love Point Park:

- Volleyball court with adjustable net
- Repair/upgrade playground
- Skateboard park
- Small boat launch beach area
- Picnic area with shelters
- Baseball field improvements
- Update the bathrooms and snack shacks
- Shaded areas
- Security at the park
- Better signage at the crosswalk

Facility/amenity requests for Pinkney Park:

- Volleyball net
- Walking/bike trail
- Bigger playground
- Sports field maintenance

Facility/amenity requests at other specified locations:

- Walking/biking trail in Grasonville
- YMCA/community center near Queenstown
- Bike park near access to the Cross Island Trails and parks
- Kayak for people with disabilities
- Basketball courts and skateboard park next to Romancoke pier
- Support for Blue Heron Golf Course maintenance
- Bennett Point, Bryantown, and Cabin Creek Landings need some upgrades. Floating docks and a small launch ramp for kayaks and small boats would be nice.
- Public playground in Chester
- Clean up the landing at Old Bridge Road
- Picnic tables at the park land between 213 and Old Bridge Road
- Rental facility for kayaks and paddleboards
- Annual passes for county residents for the Romancoke and Matapeake piers rather than daily fees
- Public boat ramp in Queenstown
- Completion of Cross Island Trail from Kent Narrows to Long Point Park
- Bike/walking trail to connect Terrapin to Matapeake
- Open Conquest Beach to the public all summer for use of beach and bath houses
- Walking trails at roundtop
- Church Hill dog park (minimal fenced site)
- Hiking trails and small pier at Nemo Park
- Aquatic facility near Queenstown (centrally located)
- Kingstown board/canoe
- Dog park with dog bag dispensers and trash cans at Sudlersville Park
- Indoor sports facility at Wye Mill
- Connect South Island Trail and Cross Island Trail
- Dog park at Route 18 park
- Walking trails in Queenstown
- Walking path/riding trail in Crumpton area closer than Sudlersville
- Extending the Cross Island Trail system

- Biking/walking trail south of Route 50 in the Chester area from Cox Neck Road to Kent Narrows that would connect with the Cross Island Trail at the Narrows

Question 16: Do you have any additional comments or suggestions you would like to offer regarding facilities, amenities and programs provided by Queen Anne's County Parks Department? (Response Count: 170)

A summary of the responses received is provided below:

- Keep up the good work
- Thank you for all you have done and all your provide
- This is a great place to live
- Focus on maintaining and improving the facilities that the county currently has
- Proper maintenance of the fields is needed
- Regarding additional annual fees:
    - Some respondents would support the fee to improve county parks and amenities but feel that the admittance fee at the parks will be a deterrent for many residents when considering using the parks
    - Some would support a fee for a dedicated project if they could be sure the funds would go to that project
    - Many feel that taxes are already too high and would prefer the county do less in order to lower taxes
    - Several respondents feel that there should be no fees of any kind for residents to enjoy the parks and amenities of the county
    - Some respondents will not support fees without systems in place to ensure non-residents do not utilize facilities without also paying fees
    - There is concern about mandatory fees for all residents when there is a significant amount of poverty in the region
    - Some suggest that taxes are a more equitable way to fund additional needs
    - Some would support fees if the facilities were for resident only
    - Some expressed an interest in being able to charge non-residents fees for use of facilities
- Put recreation back with parks
- The county needs a community center/indoor recreational facility
    - Look at examples in other counties and states to design a comparable top notch center
    - The youth and teens need a safe space for recreational opportunities
- The county needs a swimming/aquatic center
    - Should provide activities for senior citizens
- Conquest Beach should be open to the residents on a regular basis
    - Resident tax money is invested in the property and residents feel they should have access to an amenity their tax dollars support
- The county offers a fantastic amount of summer programs for kids!

- QA has fantastic access and parks.
- Clean up and repair Love Point Park, including the playground
- More patrolling of parks for security
- While some respondents feel more parks and fields are needed, others feel the county already has enough parks and some feel the county has too many parks and should divest itself of some
- More water access, boat slips, and boat ramps are needed
- Parks would be utilized more if different events were occurring regularly
- Provide equal services to northern county and southern county. Consider all residents equally in planning.
- Need to better advertise what the county already has
- More summer camps and programs for children
- Need more programs for youth and adults
- The upgrades at Terrapin park have been fantastic!
- Cross Island Trail is wonderful!
    - Cross Island trail pavement needs repair--- cracks, bumps and humps rapidly overtaking the smooth path we once had.
    - Continue Cross Island Trail to Love Point
    - Cross island trail is great for biking - not so much for walking
    - Expand the trail using existing revenue
- Easier online registration system
- Parking is limited
    - Corsica Landing boat ramp has limited parking
    - More trailer parking is needed at the Centreville wharf
- Better management, staffing, and scheduling of the fields is needed
- Increase collaboration with organization county agencies and outside organizations
- Additional recreational opportunities noted:
    - Volleyball
    - Softball
    - Swimming
    - Hockey
    - Golf (northern part of county)
    - Ice skating
    - Special events (ex. 5K races)
    - Road cycling-make roadways cyclist-friendly

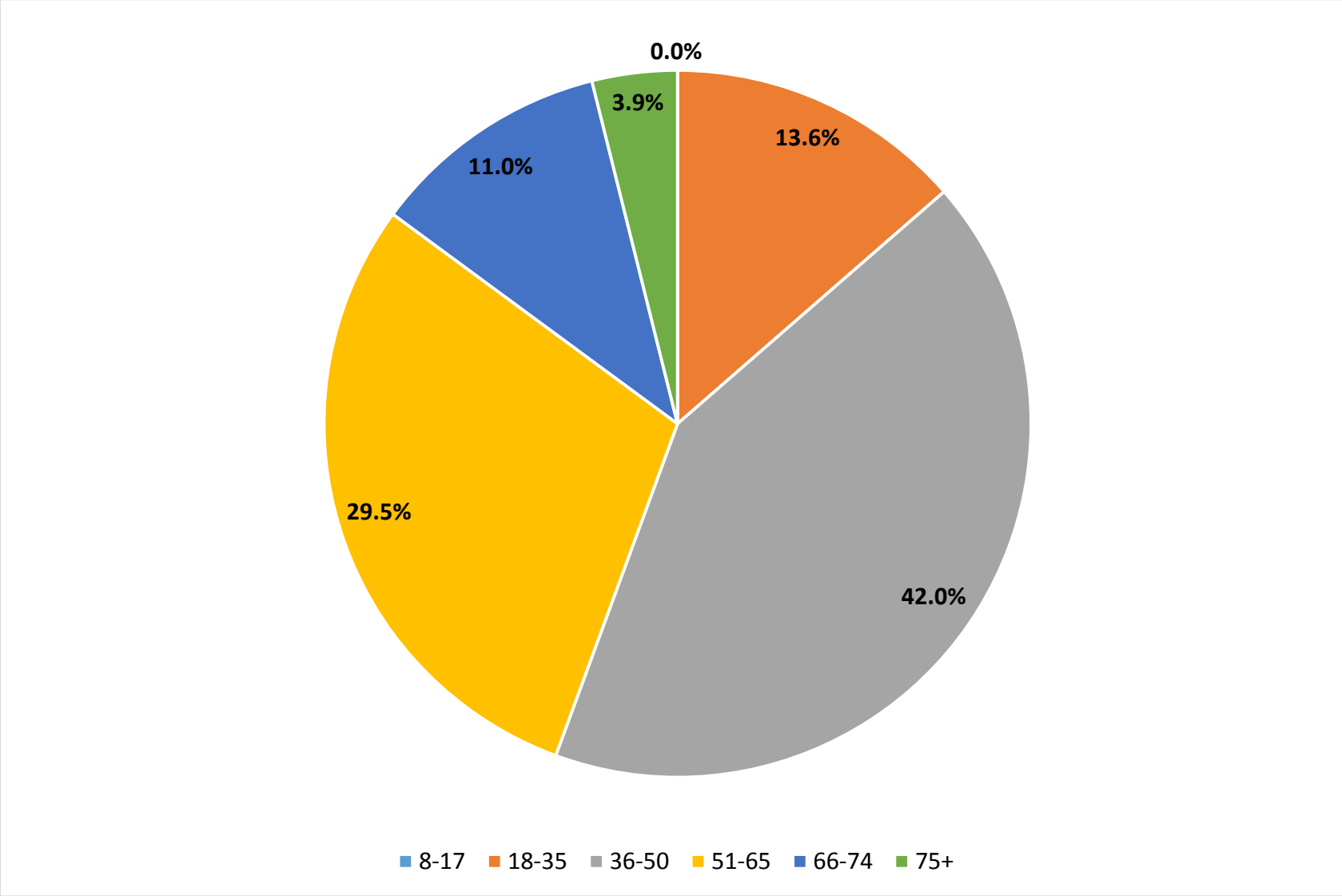
    - Movie theater
    - Bowling
    - Skateboard park
- Additional and improved bathroom facilities at all parks and fields, including Batts Neck
- The county could use additional campgrounds
- More funding and staff is needed for Parks and Recreation to sufficiently fill the needs of the county

Question 17: What is the zip code of your primary residence? (Response Count: 621; 3 invalid responses)

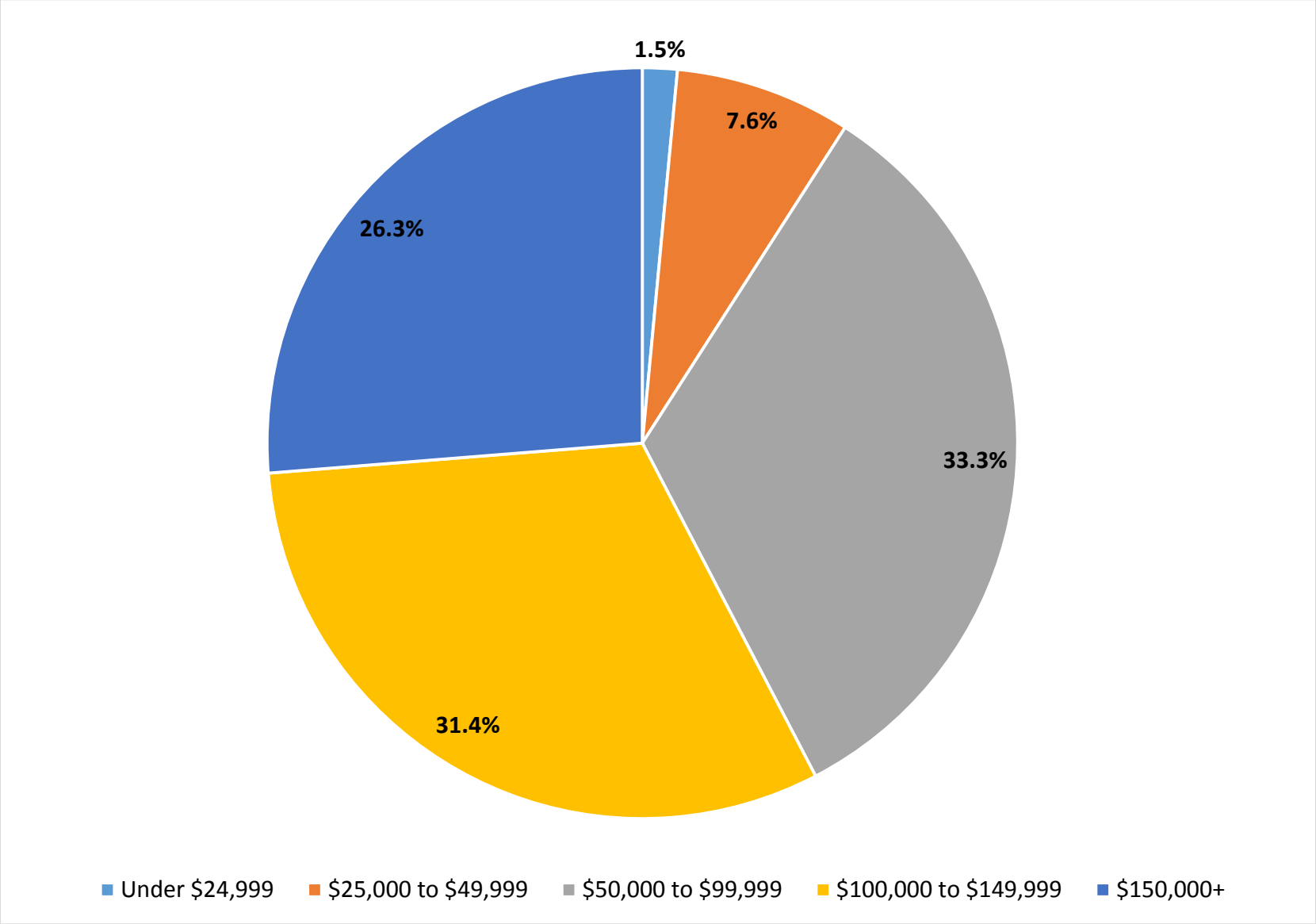
Zip Code	Count	Percent
21076	ND	0%
21228	ND	0%
21601	ND	0%
21607	ND	1%
21609	ND	0%
21617	147	24%
21619	73	12%
21620	32	5%
21623	22	4%
21628	ND	1%
21629	ND	0%
21638	44	7%
21639	ND	0%
21640	ND	0%
21649	ND	1%
21651	11	2%
21657	6	1%
21658	33	5%
21660	ND	0%
21666	205	33%
21667	ND	0%
21668	15	2%
21766	ND	0%
21777	ND	0%
22617	ND	0%

Response counts under 6 are Not Disclosed (ND)

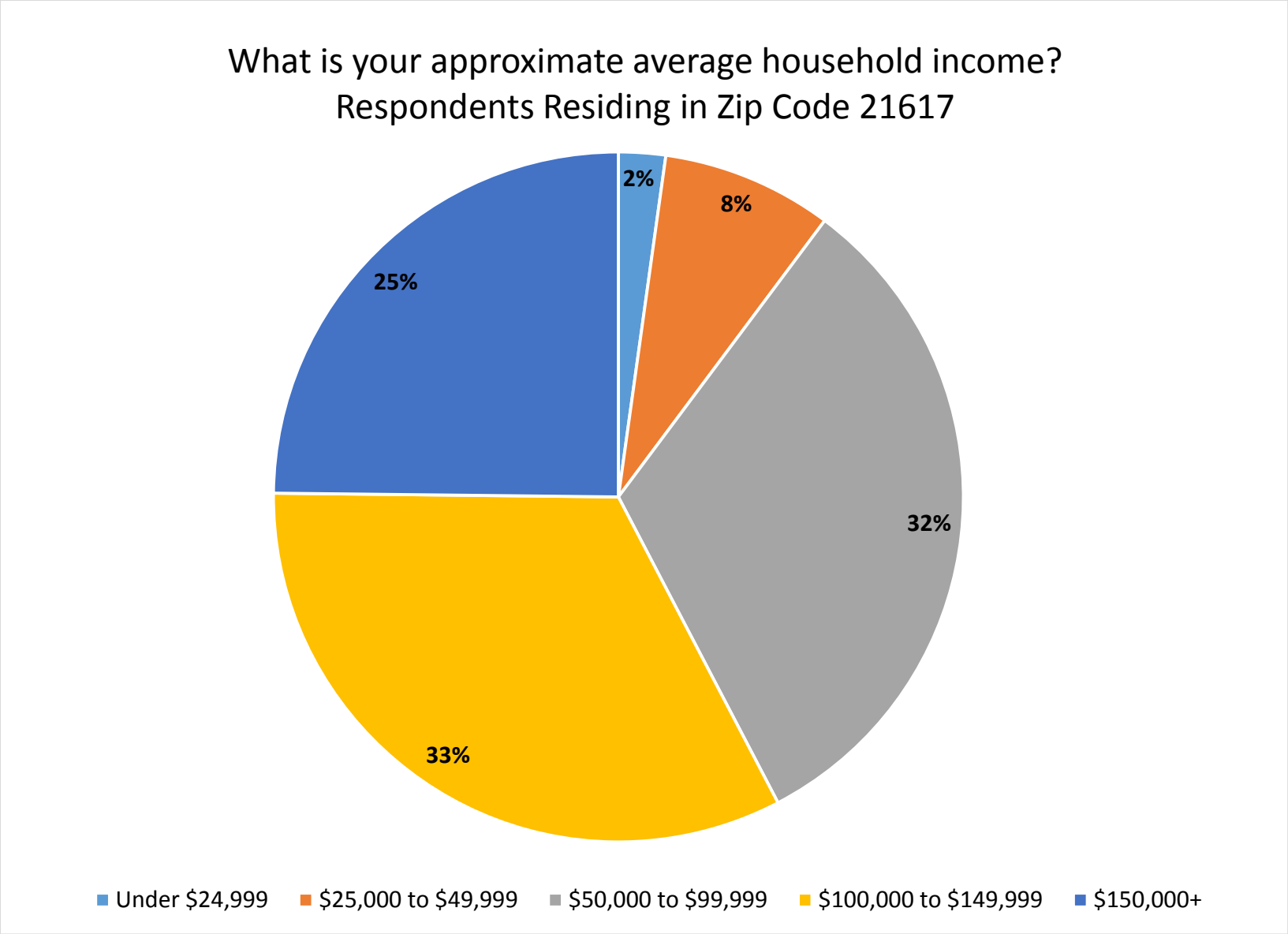
Question 18: What is your age? (Response Count: 664)

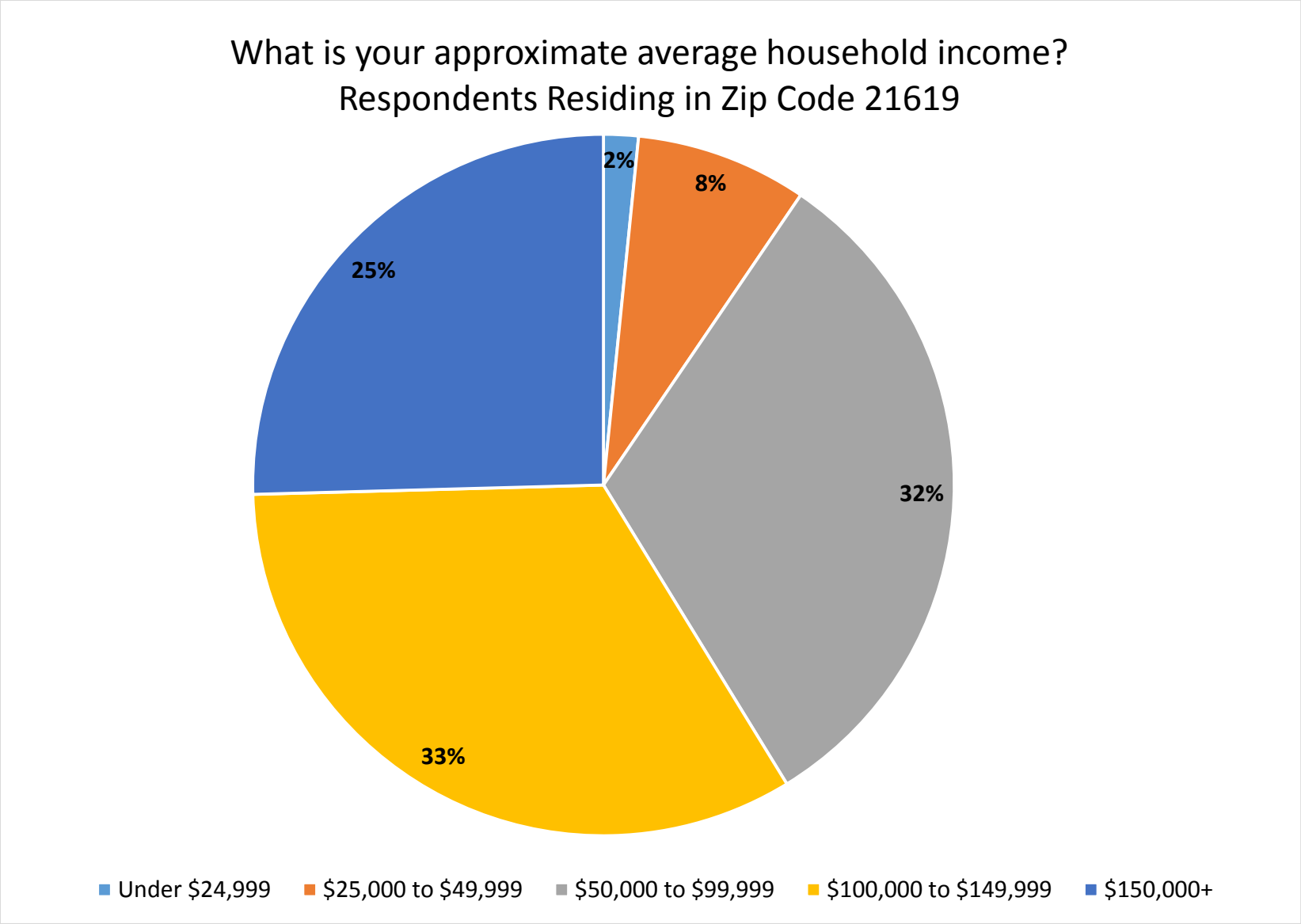


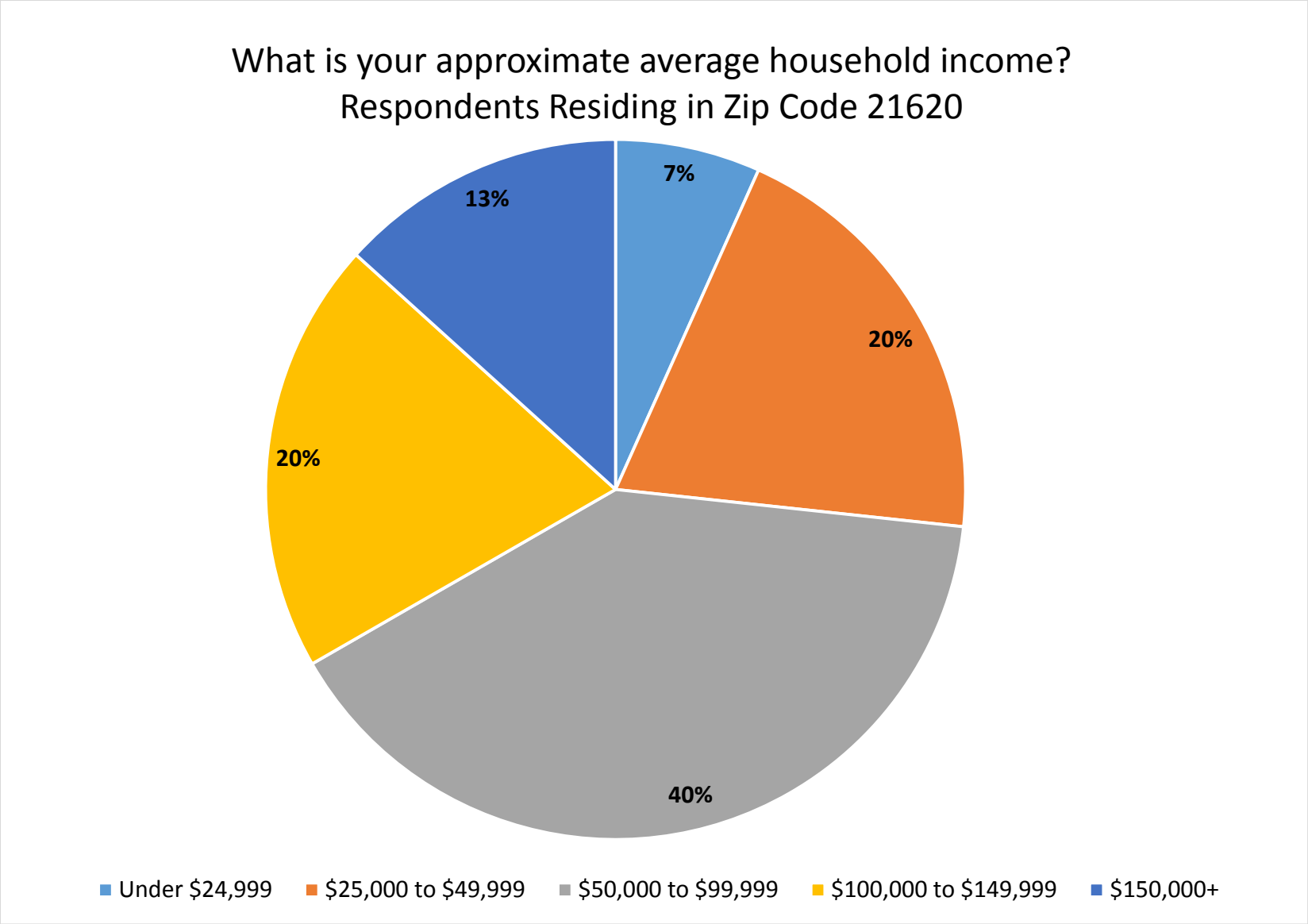
Question 19: What is your approximate average household income? (Response Count: 609)

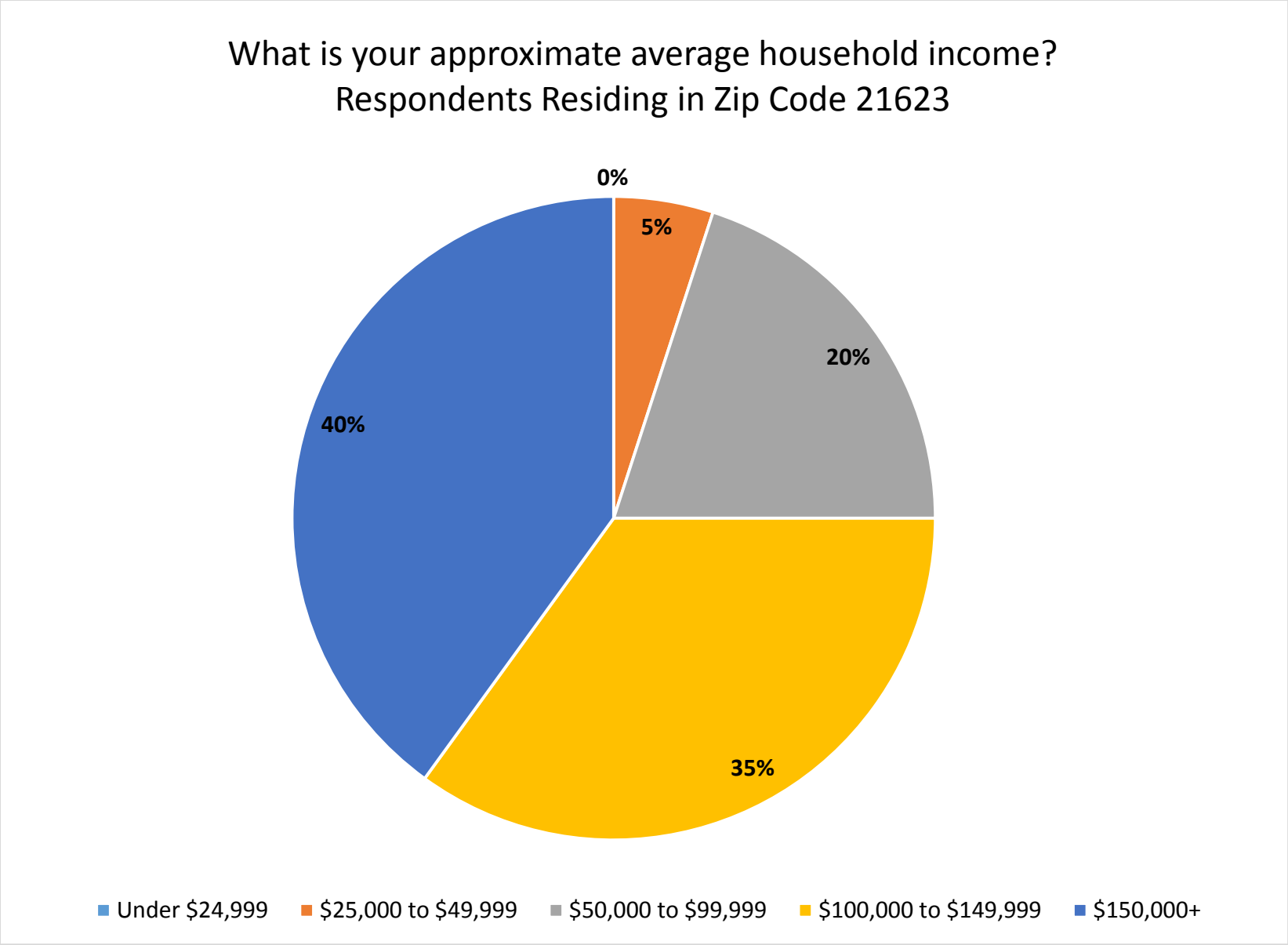


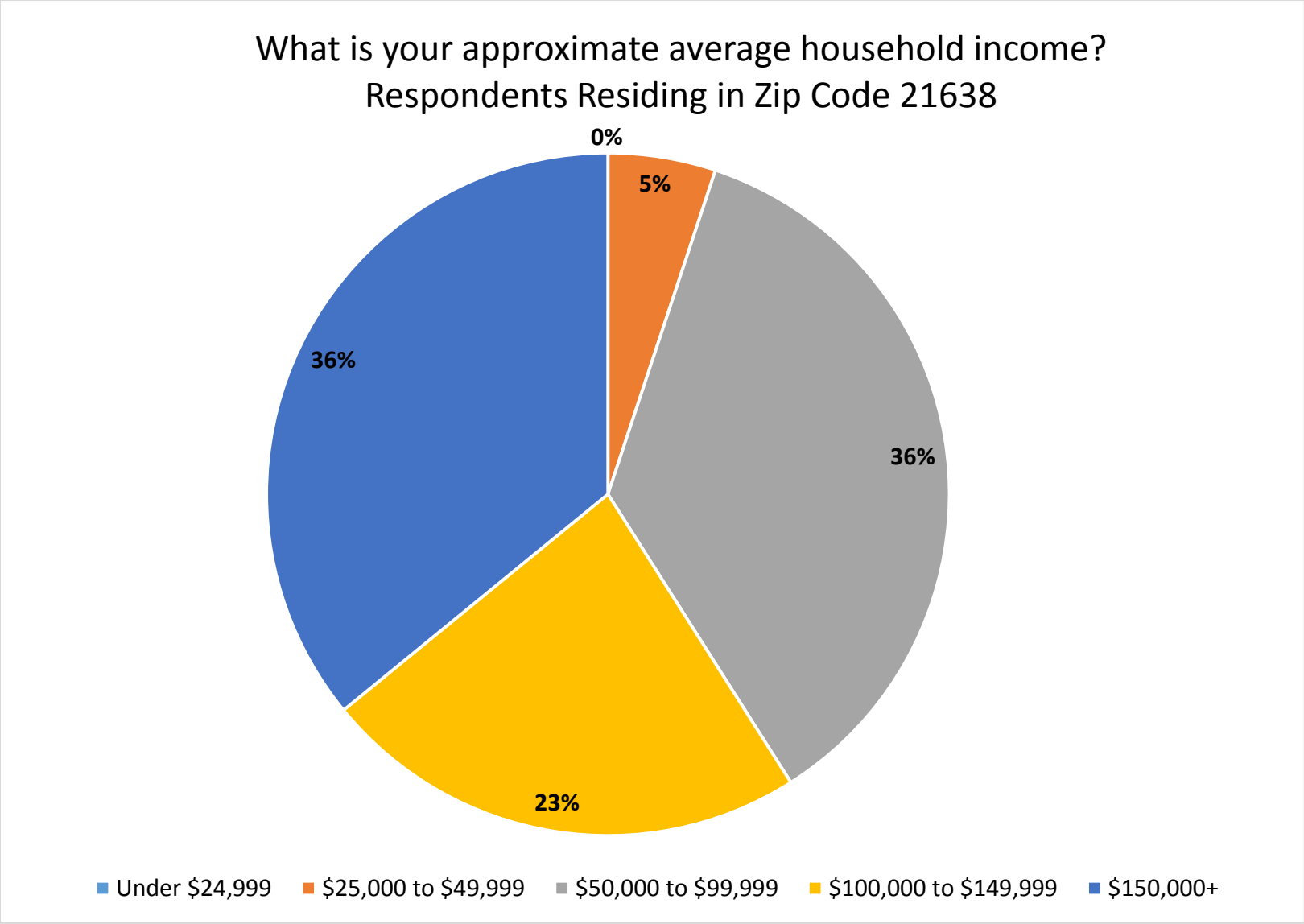
The results of Question 19 were cross-tabulated with zip code. A breakdown of the household income of respondents by zip code is provided below.

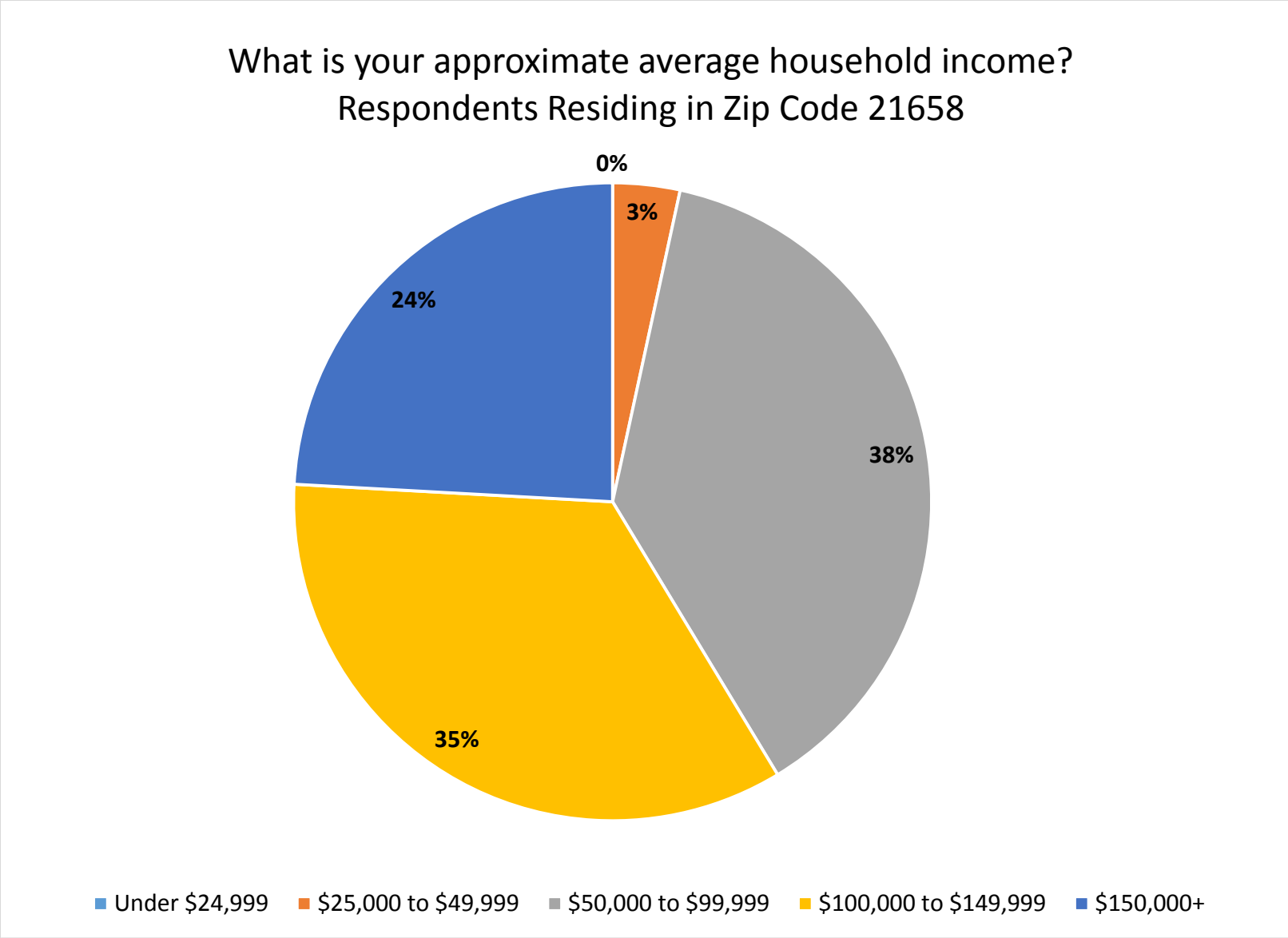

What is your approximate average household income?
Respondents Residing in Zip Code 21617
2%
8%
32%
33%
25%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+

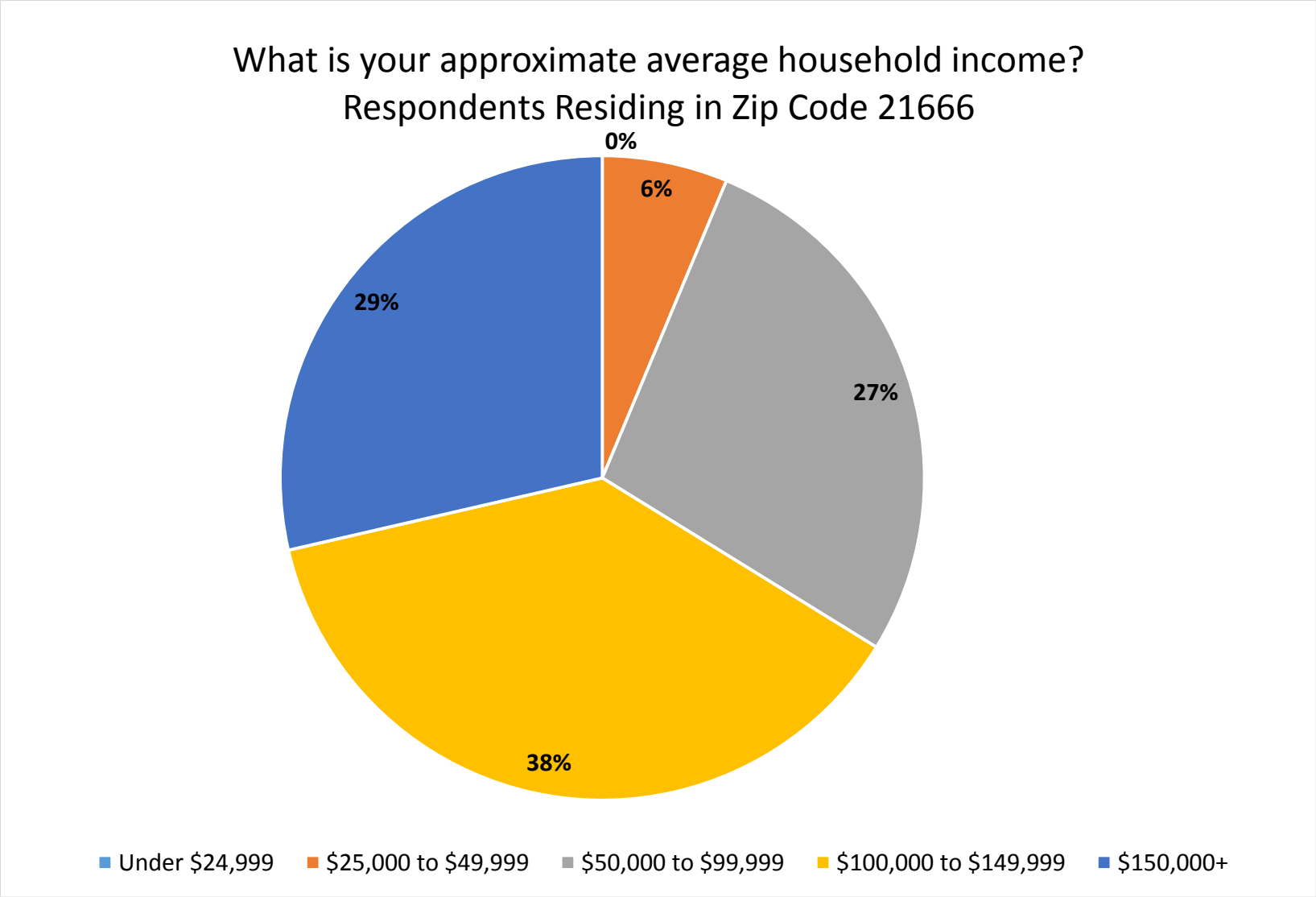

What is your approximate average household income?
Respondents Residing in Zip Code 21619
2%
8%
32%
33%
25%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+


What is your approximate average household income?
Respondents Residing in Zip Code 21620
7%
20%
40%
20%
13%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+


What is your approximate average household income?
Respondents Residing in Zip Code 21623
0%
5%
20%
40%
35%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+


What is your approximate average household income?
Respondents Residing in Zip Code 21638
0%
5%
36%
36%
23%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+

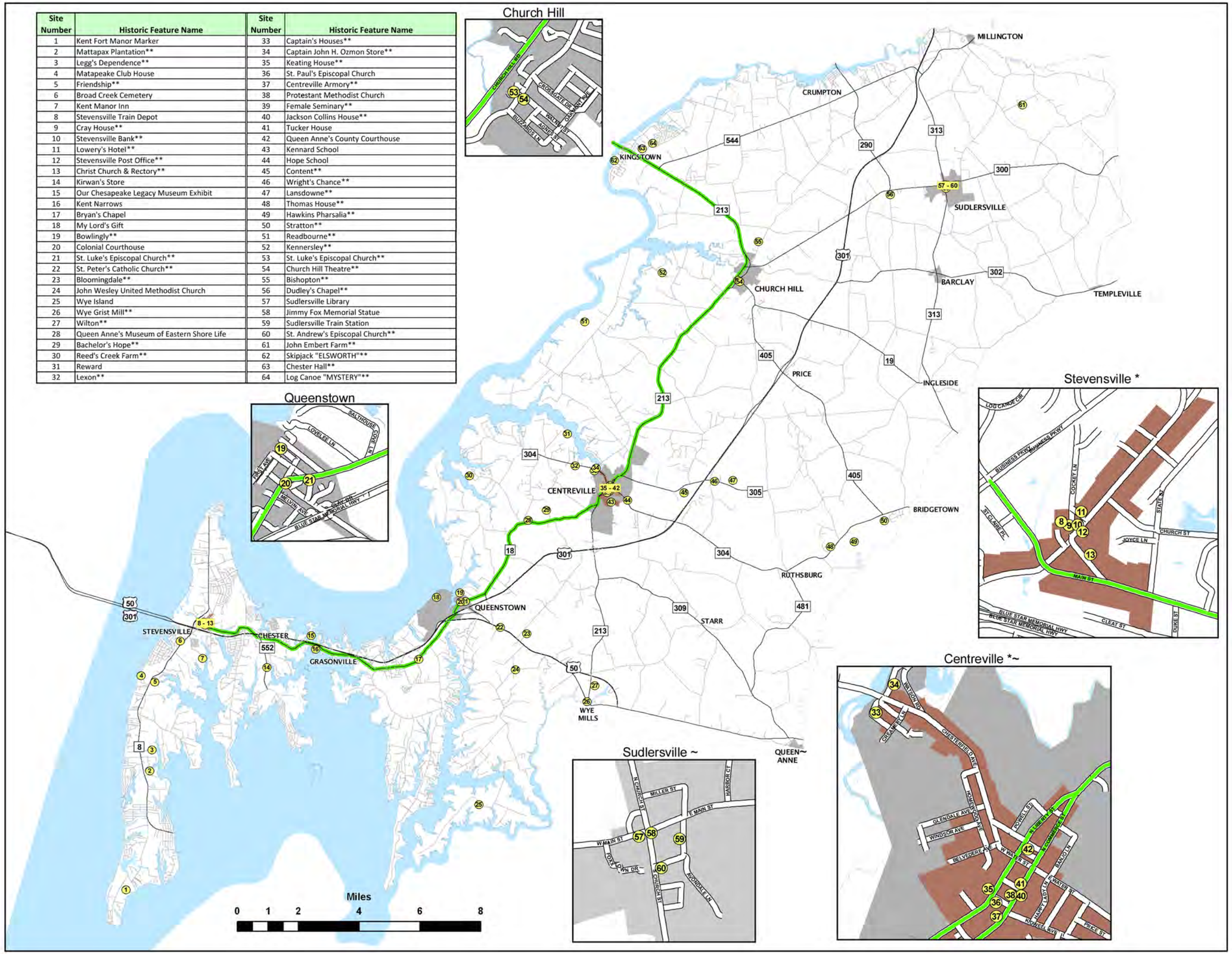

What is your approximate average household income?
Respondents Residing in Zip Code 21658
0%
3%
38%
35%
24%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+


What is your approximate average household income?
Respondents Residing in Zip Code 21666
0%
6%
27%
38%
29%
Under $24,999
$25,000 to $49,999
$50,000 to $99,999
$100,000 to $149,999
$150,000+

APPENDIX C

Relevant Maps / GIS Data Sharing

Site Number	Historic Feature Name	Site Number	Historic Feature Name
1	Kent Fort Manor Marker	33	Captain's Houses**
2	Mattapax Plantation**	34	Captain John H. Ozmon Store**
3	Legg's Dependence**	35	Keating House**
4	Matapeake Club House	36	St. Paul's Episcopal Church
5	Friendship**	37	Centreville Armory**
6	Broad Creek Cemetery	38	Protestant Methodist Church
7	Kent Manor Inn	39	Female Seminary**
8	Stevensville Train Depot	40	Jackson Collins House**
9	Cray House**	41	Tucker House
10	Stevensville Bank**	42	Queen Anne's County Courthouse
11	Lowery's Hotel**	43	Kennard School
12	Stevensville Post Office**	44	Hope School
13	Christ Church & Rectory**	45	Content**
14	Kirwan's Store	46	Wright's Chance**
15	Our Chesapeake Legacy Museum Exhibit	47	Lansdowne**
16	Kent Narrows	48	Thomas House**
17	Bryan's Chapel	49	Hawkins Pharsalia**
18	My Lord's Gift	50	Stratton**
19	Bowlingly**	51	Readbourne**
20	Colonial Courthouse	52	Kennersley**
21	St. Luke's Episcopal Church**	53	St. Luke's Episcopal Church**
22	St. Peter's Catholic Church**	54	Church Hill Theatre**
23	Bloomingdale**	55	Bishopton**
24	John Wesley United Methodist Church	56	Dudley's Chapel**
25	Wye Island	57	Sudlersville Library
26	Wye Grist Mill**	58	Jimmy Fox Memorial Statue
27	Wilton**	59	Sudlersville Train Station
28	Queen Anne's Museum of Eastern Shore Life	60	St. Andrew's Episcopal Church**
29	Bachelor's Hope**	61	John Embert Farm**
30	Reed's Creek Farm**	62	Skipjack "ELSWORTH"**
31	Reward	63	Chester Hall**
32	Lexon**	64	Log Canoe "MYSTERY"**



Queen Anne's County

Comprehensive Plan Update

Maryland

Historic & Cultural Resources

Legend

- Historic Sites
- Historic Districts**
- Scenic Byway
- Highways
- Other Roadways
- Incorporated Towns

Notes:

* Stevensville and Centreville are Target Investment Zones of the Maryland Heritage Areas Program.

~ Queen Anne, Sudlersville, Centreville, and Queenstown are Certified Towns of the Stories of the Chesapeake Heritage Area as recognized by the Maryland Heritage Areas Authority.

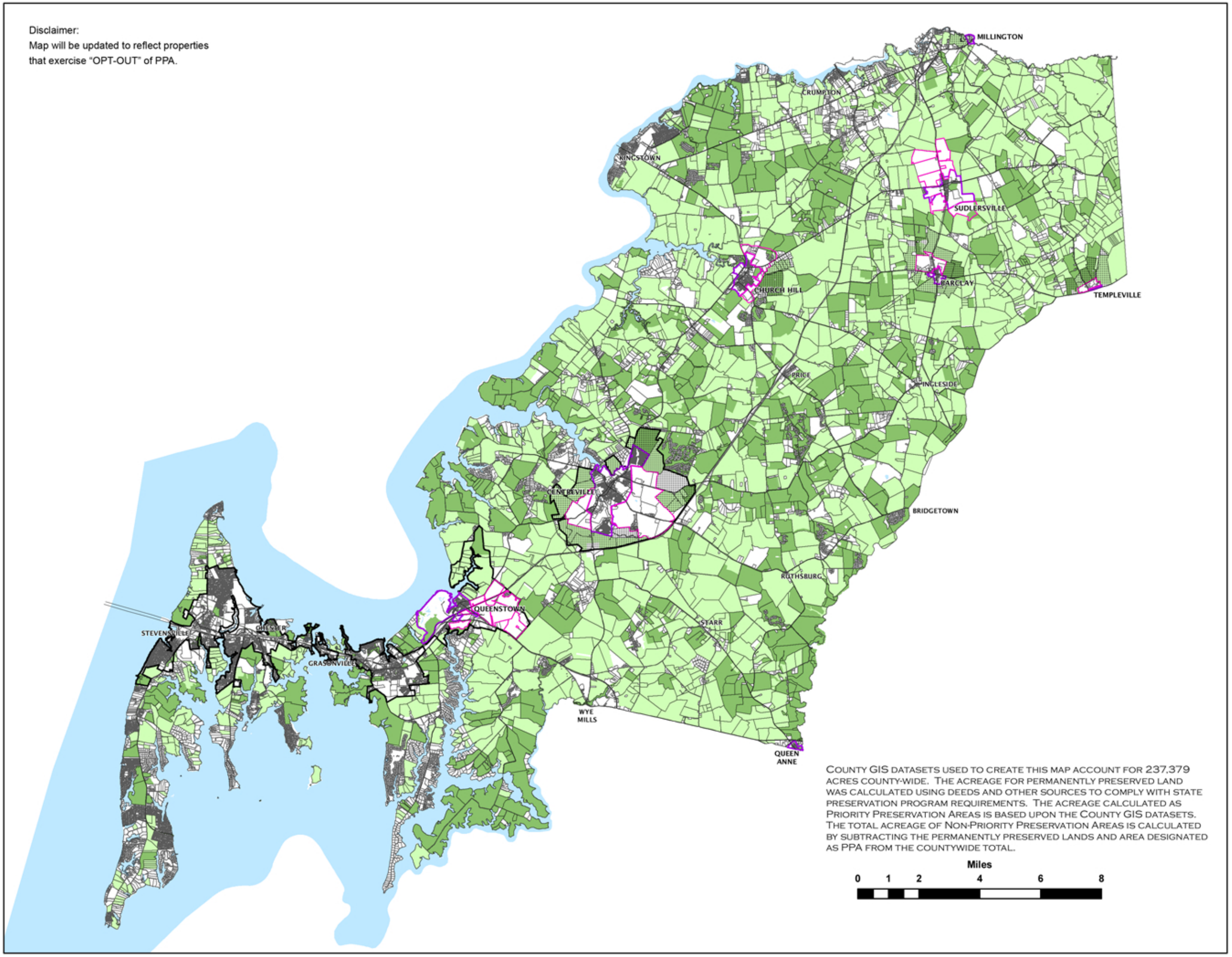
** Federally designated - listed on the National Register of Historic Places

Source: Queen Anne's County Department of Land Use, Growth Management & Environment, National Register of Historic Places, Maryland Historic Trust, Maryland Department of Planning

March 2010

MAP ESA-11

Disclaimer:
Map will be updated to reflect properties that exercise "OPT-OUT" of PPA.



County GIS datasets used to create this map account for 237,379 acres county-wide. The acreage for permanently preserved land was calculated using deeds and other sources to comply with state preservation program requirements. The acreage calculated as Priority Preservation Areas is based upon the County GIS datasets. The total acreage of Non-Priority Preservation Areas is calculated by subtracting the permanently preserved lands and area designated as PPA from the countywide total.

Miles
0 1 2 4 6 8

Queen Anne's County
Comprehensive Plan Update

Maryland

Priority Preservation Areas

Legend
- County Boundary
- Roadways
- Parcels
- Town Future Annexation Areas
- Incorporated Towns
- County / Town Planning Areas
- Greenbelts
- Permanently Preserved Lands
- Priority Preservation Areas*
- Non-Priority Preservation Areas**
- Water

Notes:
*Priority Preservation Areas do not include existing permanently preserved lands.

Permanently Preserved Land: 69,093 acres

Total area designated as Priority Preservation Area (PPA): 119,004 acres

PPA Preservation Goal (80 percent of lands available for preservation): 95,203 acres

**Non-Priority Preservation Areas:
49,282 acres
Areas Include:
- Planning areas, incorporated Town Boundaries and future annexation areas;
- Common areas within subdivisions;
- Public and private properties exempt from taxes such as churches and schools;
- Major and minor subdivision approved from January 2002 to April 2009;
- Lots that are less than or equal to 5 acres;
- Lots improved with a residence 20 acres or less; and
- All properties not zoned Agriculture and Countryside.

Source: Maryland Department of Planning, Queen Anne's County Department of Land Use, Growth Management & Environment (LGE). Satellite Imagery 2007-2008, and 2010 Tax Parcels as compiled by LGE.

March 2010

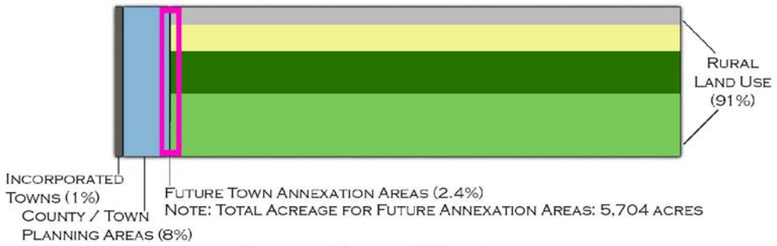
MAP ESA-10

Queen Anne's County
Comprehensive Plan Update

Maryland

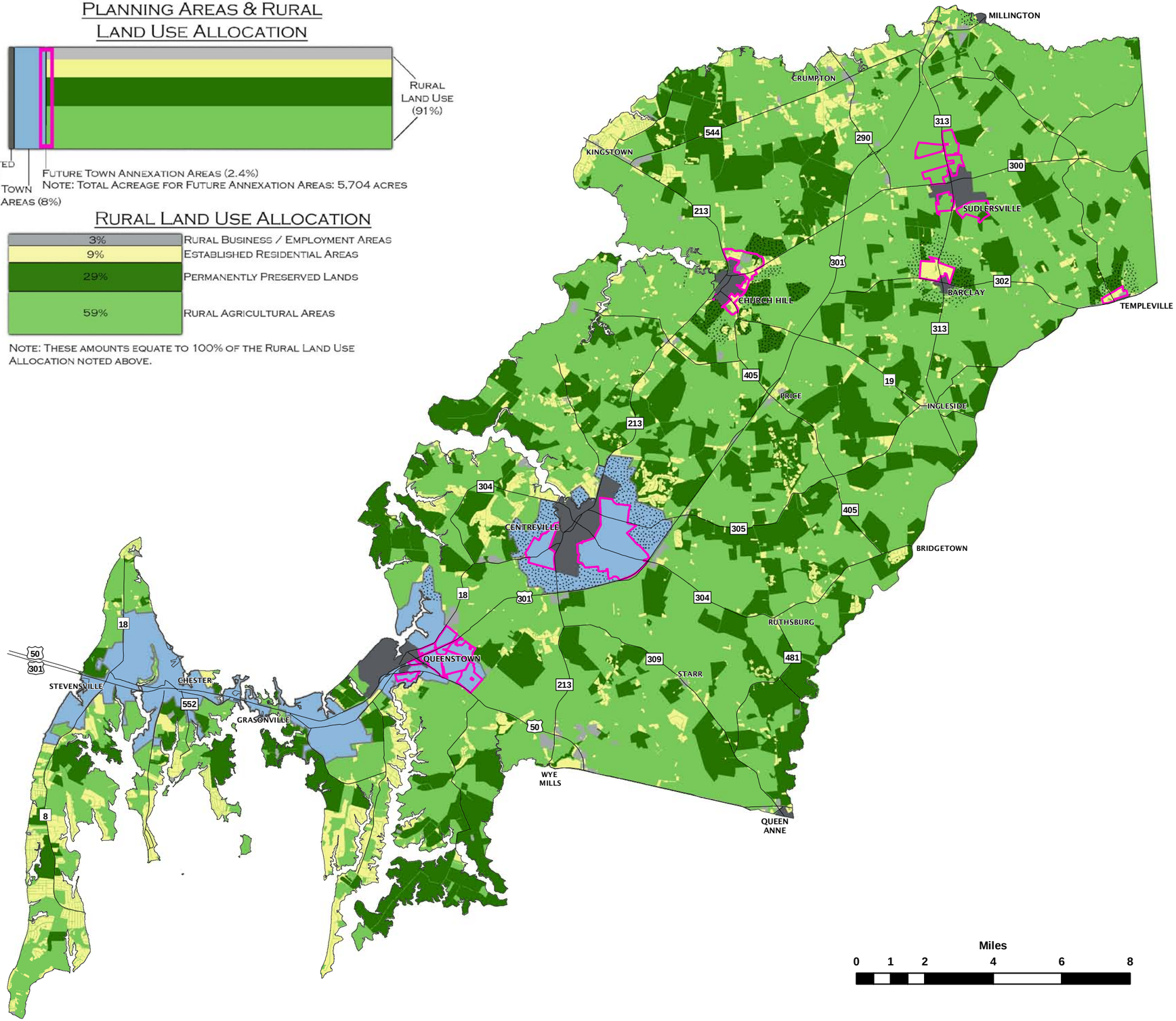
Comprehensive Plan Map: Countywide Land Use

Planning Areas & Rural Land Use Allocation



Rural Land Use Allocation

Note: These amounts equate to 100% of the Rural Land Use Allocation noted above.



Rural Land Use

- Established Residential Areas
- Rural Business Employment Areas
- Rural Agricultural Areas
- Permanently Preserved Lands
- Greenbelts

Planning Areas

- County / Town Planning Areas*
- Incorporated Towns
- Town Future Annexation Areas

Note:
This map is to be used in conjunction with the comprehensive plan text and other plan maps.

Refer to Table 1-4 for Land Use Allocations.

*Detailed Land Use Classifications see Map LU-7B.

Source: Queen Anne's County Department of Land Use, Growth Management and Environment and Maryland Department of Planning.

March 2010

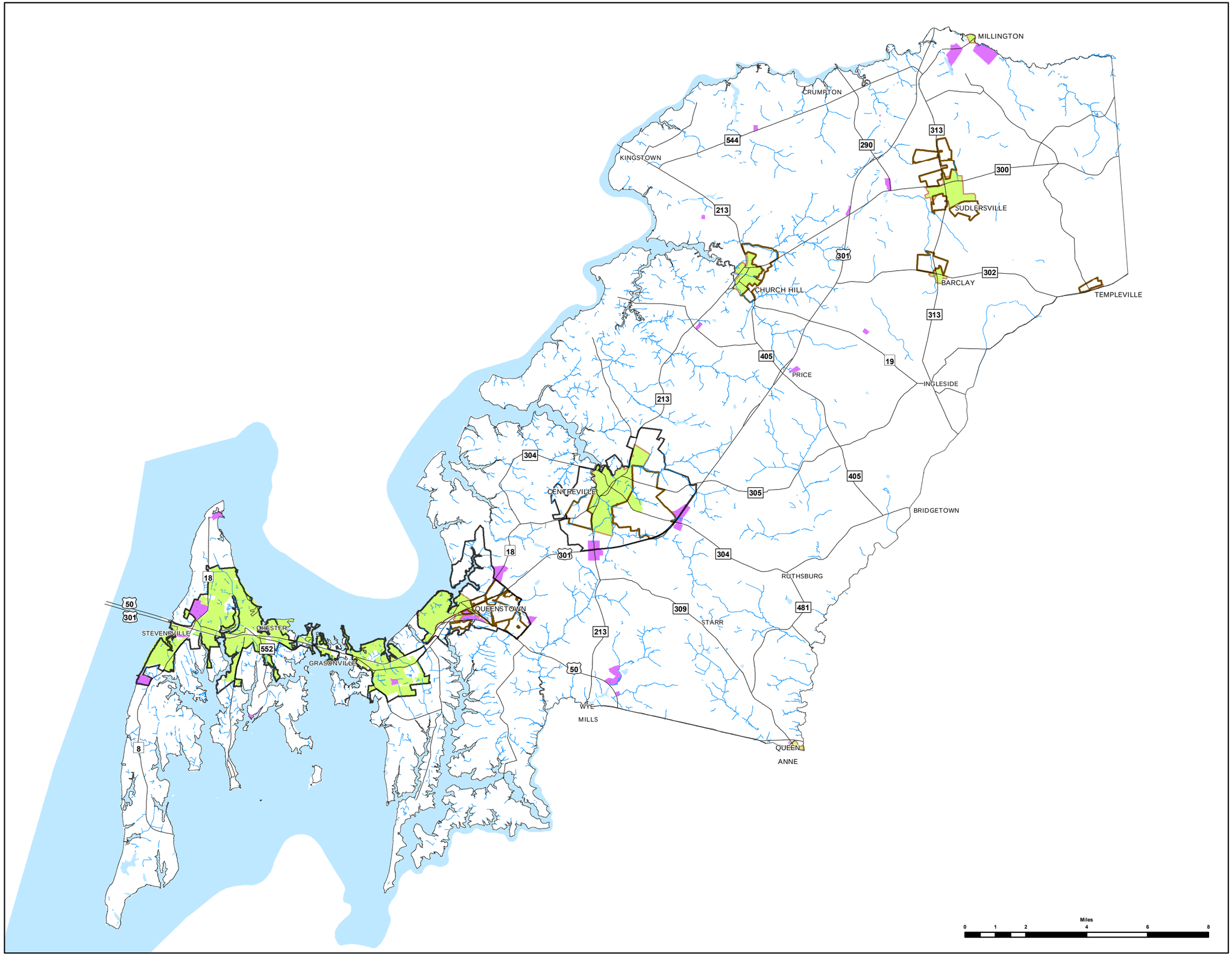
MAP LU-7A

Queen Anne's County

LPPRP

Maryland

County / Town Planning Areas and Priority Funding Areas



County Boundary
Roadways
Waterways
County / Town Planning Areas
Town Future Annexation Areas
Incorporated Towns
Priority Funding Areas
Suburban Industrial Priority Funding Areas
Water

Note: Priority Funding Areas are existing communities and places where local governments want State investment to support future growth.

County / Town Planning Area:
A geographical area, defined by the Planning Commission, to be considered in the development of a community plan or comprehensive plan.

Priority Funding Areas:
Existing Communities and place where local governments want State investment to support future growth. As per the 1997 Priority Funding Areas Act, beginning October 1, 1998, the State of Maryland directed funding for projects that support growth in Priority Funding Areas (PFAs). PFAs are areas identified by the County and designated by the State where the state, county and municipalities want to target their efforts to encourage and support economic development and new growth.

Suburban Industrial Priority Funding Area:
Areas designated as Industrial prior to January 1, 1999 that would qualify as a Priority Funding Area.

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W
E
S

Source: Queen Anne's County Department of Planning & Zoning and Maryland Department of Planning.

May 2012

Queen Anne's County

2017 Land Preservation, Parks & Recreation Plan

GIS Data Sharing Requirements:	**Shared**
1. County protected public lands (county owned parks, natural areas and lands with agricultural or conservation easements)	Yes
2. Public land and water trails in county parks and natural areas	Yes
3. Parking at county parks and trailheads (not available as separate layer shown on Park Facilities Inventory)	--
4. Public hunting areas in the county or natural areas	N/A
5. County park amenities, picnic area, campgrounds, playgrounds, recreation centers or sports fields (not available as separate layer (shown on Park Facilities Inventory)	--
6. Public fishing sites	Yes
7. County Water access locations (boat ramps and canoe/kayak Launch areas)	Yes

APPENDIX D

NRPA Study -

"Americans' Broad-Based Support for Local Recreation and Park Services"

Americans' Broad-Based Support for Local Recreation and Park Services:

Results From a Nationwide Study

NRPA
National Recreation and Park Association

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TABLE OF CONTENTS

Introduction 1

Key Findings 3

The Priorities of Local Parks: NRPA's Three Pillars 8

The Economic Value of Parks..... 9

Conclusions and Looking Forward 11

About The Study 12

INTRODUCTION

Americans cherish their local public park and recreation services, seeing them as valuable features of their communities, towns and cities. A large majority of Americans use their local public parks, playgrounds and other open spaces with an even larger percentage saying they personally benefit from public parks. Furthermore, Americans almost unanimously agree that their communities benefit from local public parks, even if they themselves are not regular park users. This passion for local public parks has remained consistent over the past quarter century even as our nation and the ways we interact and entertain each other have dramatically evolved.

A reason for this fervent and unfailing support for local parks is the consistent delivery of services and programming focused on conservation, health and wellness and social equity. Americans agree local public parks are well worth the tax dollars used to operate and maintain these facilities, with many willing to increase these investments to build on the success public parks have had in their communities. Finally, the enthusiasm for local recreation and park offerings is practically universal, spanning across a wide range of demographic groups, including age, income, household formation and even political affiliation.

These are the key highlights from a nationwide study commissioned by the National Recreation and Park Association (NRPA) on Americans' perceptions of local park and recreation services. These conclusions confirm that Americans do not see public parks as luxuries, but rather as critical infrastructure worthy of full and consistent investment. The findings further inform park and recreation professionals, policymakers and other stakeholders about the support for park and recreation investments to address the many challenges facing local communities.

NRPA has long known the importance of understanding the public's support of parks and the physical and social amenities they provide. Back in 1992, NRPA commissioned a study to better understand the benefits and value of local park and recreation services as perceived by the American public. That study, conducted by Pennsylvania State University, found that most Americans indicated they had personally benefited, as did their community as a whole, from their local recreation and park services (Godbey, Graefe, & James, 1992).

In the time since that study's release, much has changed in the United States. Today, America is older, better educated, more racially/ethnically diverse and more urbanized. Technology has also altered how we communicate, interact and entertain ourselves in ways unimaginable a quarter of a century ago.

To understand how these demographic and societal changes may have affected Americans' view of local public parks, NRPA engaged Dr. Andrew Mowen and his Penn State colleagues Drs. Geoffrey Godbey and Alan Graefe and Mr. Austin Barrett to update the 1992 study. Working in cooperation with NRPA researchers and Left Brain Concepts, Inc., these researchers surveyed more than 1,100 Americans asking many of the same questions/topics from the 1992 study, including:

- Americans' proximity (walking distance) to local parks, playgrounds and/or open space
- Americans' personal and household use of local parks and participation in recreation activities
- Americans' perceptions of park/program benefits for themselves, their family and for their community
- Americans' view of the key priorities for their local park and recreation agencies; namely, their support of NRPA's Three Pillars — conservation, health and wellness and social equity
- Americans' willingness to pay for local park and recreation services through tax dollars

As detailed in the pages that follow, the survey findings show Americans are as enthusiastic in their support for public parks as they were 25 years ago, and this passion resonates with the public across almost every demographic group throughout the United States.

Support for local parks is widespread, spanning:

AGE GROUPS

HOUSEHOLD TYPES

INCOME STRATA

POLITICAL AFFILIATION

7 IN 10 AMERICANS

GO TO THEIR LOCAL PARK

83%

of Americans **personally benefit** from local parks

92% of Americans

say their **communities benefit** from local parks

4 in 5

agree that local parks are **worth the tax dollars** spent on them

Americans see NRPA's 3 Pillars as the **chief priorities for local parks**

CONSERVATION

HEALTH & WELLNESS

SOCIAL EQUITY

KEY FINDINGS

Use, Value and Benefits of Local Parks

A majority of Americans live within walking distance of a park.

A major factor for why Americans go to their local park on a regular basis is proximity. Two-thirds of survey respondents say there is a park, playground or some other type of open space within walking distance of their home. Note that the survey did not specifically define what constitutes a "walking distance," but instead allows the survey respondent to decide what is meant by being "nearby." This is important as it is the perception of what is near that determines whether or not a local park is used frequently.

Roughly three-quarters of Americans who say they live in large, medium-sized or small cities/towns say they live within walking distance of a park. Those who say they live in a rural area have less access — slightly more than half of these survey respondents indicate they live near a local park.

A large majority of Americans use their local parks.

Local park and recreation systems are an integral part of most Americans' lives. Seven in ten survey respondents indicate that they go to their local park areas , including athletic fields, playgrounds and other open spaces in the community. Slightly more than a quarter of respondents use local parks "frequently" (26 percent) while another 44 percent do so "occasionally." This level of use is essentially unchanged from that reported in 1992. In the previous study, three-quarters of respondents reported using their local park and recreation areas for any purpose, including 24 percent saying they used parks frequently.

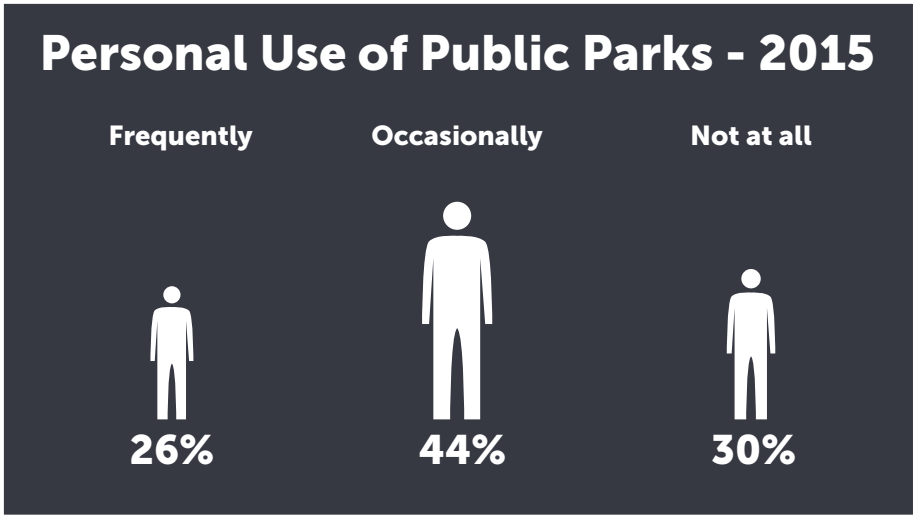
Park usage is broad based, with strong majorities of most demographic groups indicating that they visit their local parks.

Who is more likely to go to their local park? Those who are:

- Younger: 79 percent of survey respondents who are between the ages of 21 and 35 versus 57 percent of respondents between the ages of 65 and 75
- Wealthier: 80 percent of respondents earning more than $80,000 per year versus 66 percent of respondents that earn less than $40,000 per year
- Live in larger households: 87 percent of respondents living in homes with five or more people versus 60 percent of respondents who live by themselves

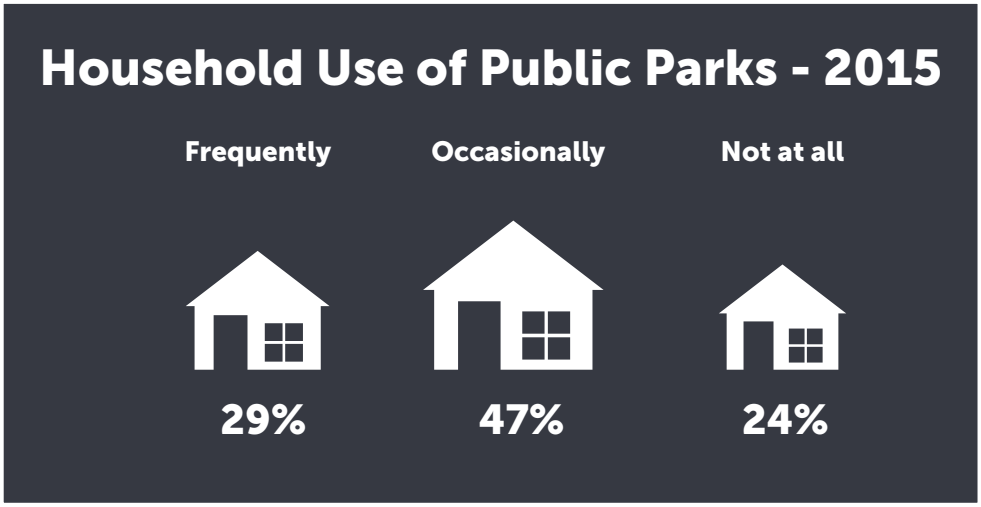
Not only do respondents visit their local parks, they also report that local parks, playgrounds and other open spaces play an important role in the lives of other members in their household. For example, 76 percent indicate that other members of their household — a spouse, children, relatives and other housemates — use local park areas. Twenty-nine percent of the respondents say that other members of the household "frequently" use parks, and 47 percent of other household members "occasionally" use parks. These results are consistent with household use of parks in 1992.

7 in 10 Americans go to their local park.



Americans' perceptions of the benefits from local parks have increased significantly during the past quarter century.

The positive outcomes or benefits derived from parks is a frequent message of the profession and was a key finding of the 1992 survey. Today, Americans see themselves benefiting from their local park areas, regardless of whether they themselves actually take advantage of the offerings available at their local park and recreation system. Even more remarkable, however, is that people place a greater value on their local parks today than they did a quarter century ago.



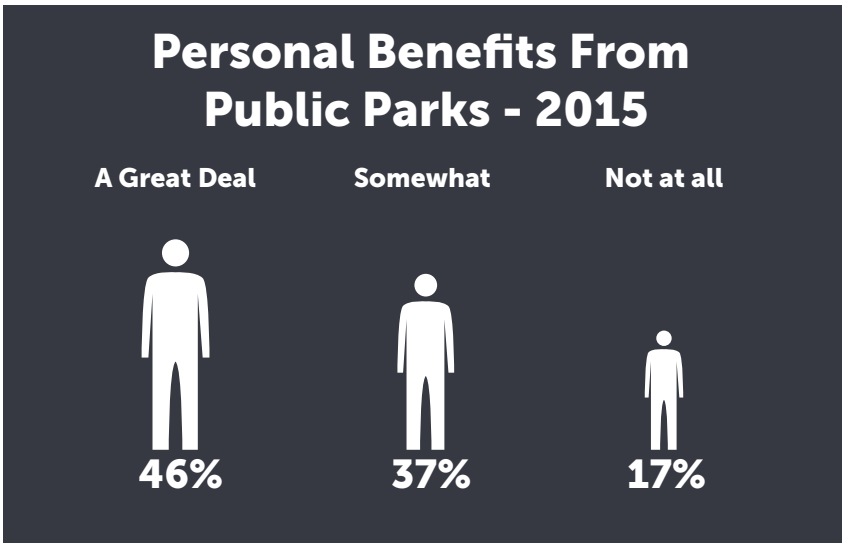
76% of respondents say household members use local park areas.

Five in six survey respondents indicate they personally benefit from their local park areas (83 percent). Almost half of people report that they personally benefit "a great deal" from local park areas (46 percent) while another 37 percent report "somewhat" gaining personal benefits from local parks.

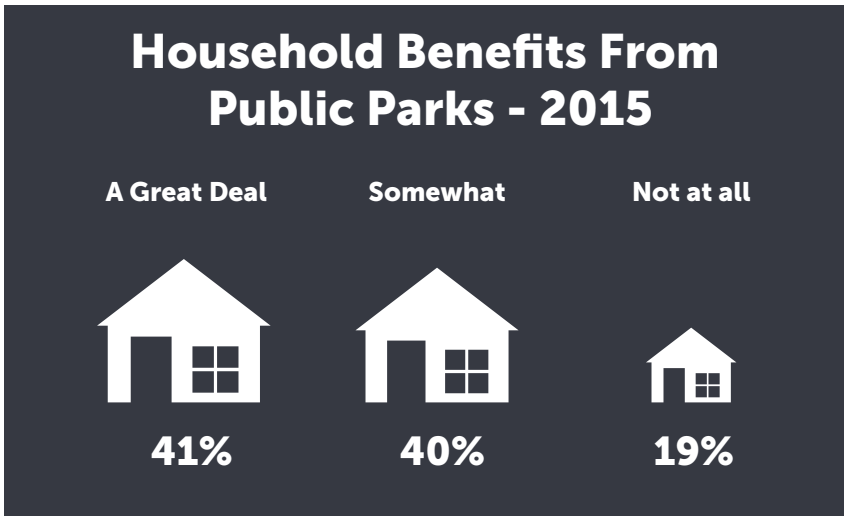
The personal benefits arising from local parks are greater today than they were in the 1992 study. While the percentage of Americans indicating that they personally benefit from public parks is virtually unchanged from that reported a quarter century ago, survey respondents are more likely today to report that they benefited "a great deal" from local parks than they did in 1992. In the 1992 survey, 84 percent of survey respondents reported gaining benefits from their local parks, but only 37 percent of people felt they personally benefited a "great deal" from their local park areas. Whereas in 2015, 46 percent felt they benefited a "great deal."

As we saw with park usage, the likelihood of someone gleaning benefits from their local park spans across most demographic groups (with strong majorities of members of most demographic cohorts indicating so). Nevertheless, the survey respondent is more likely to indicate "a great deal" of benefits from local parks when s/he:

- Is younger: 52 percent of survey respondents between the age of 21 and 35 say they benefit "a great deal" from their local park areas versus 37 percent of respondents between the age of 66 and 75 who indicate the same.
- Earns a higher income: 56 percent of survey respondents earning more than $80,000 per year report benefiting "a great deal" from their local parks versus 41 percent of respondents that earn $40,000 or less annually who indicate the same.
- Lives outside of a rural area: Roughly half of survey respondents living in a city or town of any size derive "a great deal" of benefits from their local parks versus 36 percent who live in a rural area.



The benefits of local parks also resonate with other members of the survey respondents' households. Eighty-one percent of survey respondents say members of their households benefit from local park areas, essentially unchanged from the 79 percent of survey respondents who indicated the same in 1992. Almost equal percentages of survey respondents in 2015 say their households benefited "a great deal" (41 percent) or "somewhat" (40 percent) from their local park areas. This is an improvement from the 1992 study where only 31 percent of survey respondents indicated that other members of their household had benefited "a great deal" from their local park system.



Americans agree their communities benefit greatly from local parks.

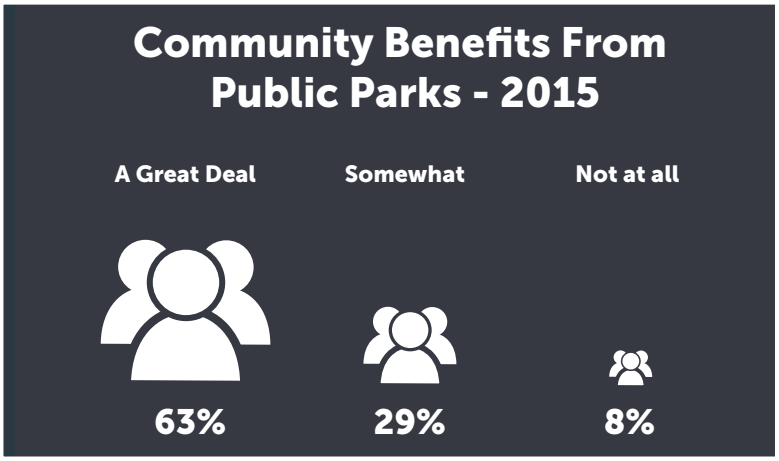
The passionate support for local parks goes well beyond the survey respondents, their families and friends. A vast majority of Americans also agree that their community as a whole benefits from its local parks, with most seeing a large benefit to the area where they reside. In fact, Americans are more likely to perceive a higher level of community benefit than personal benefit from local park areas.

Ninety-two percent of respondents say that their community benefits from local park areas. Even more impressive is that 63 percent of respondents indicate their local park areas provided "a great deal" of benefit to the village, town or city in which they reside. This is not a new phenomenon. Americans attributing great community benefits from their local parks is essentially unchanged from how they felt a quarter century earlier. Ninety-four percent of participants in the 1992 study said their communities benefited from their local parks, of which 61 percent said their local community benefits "a great deal."

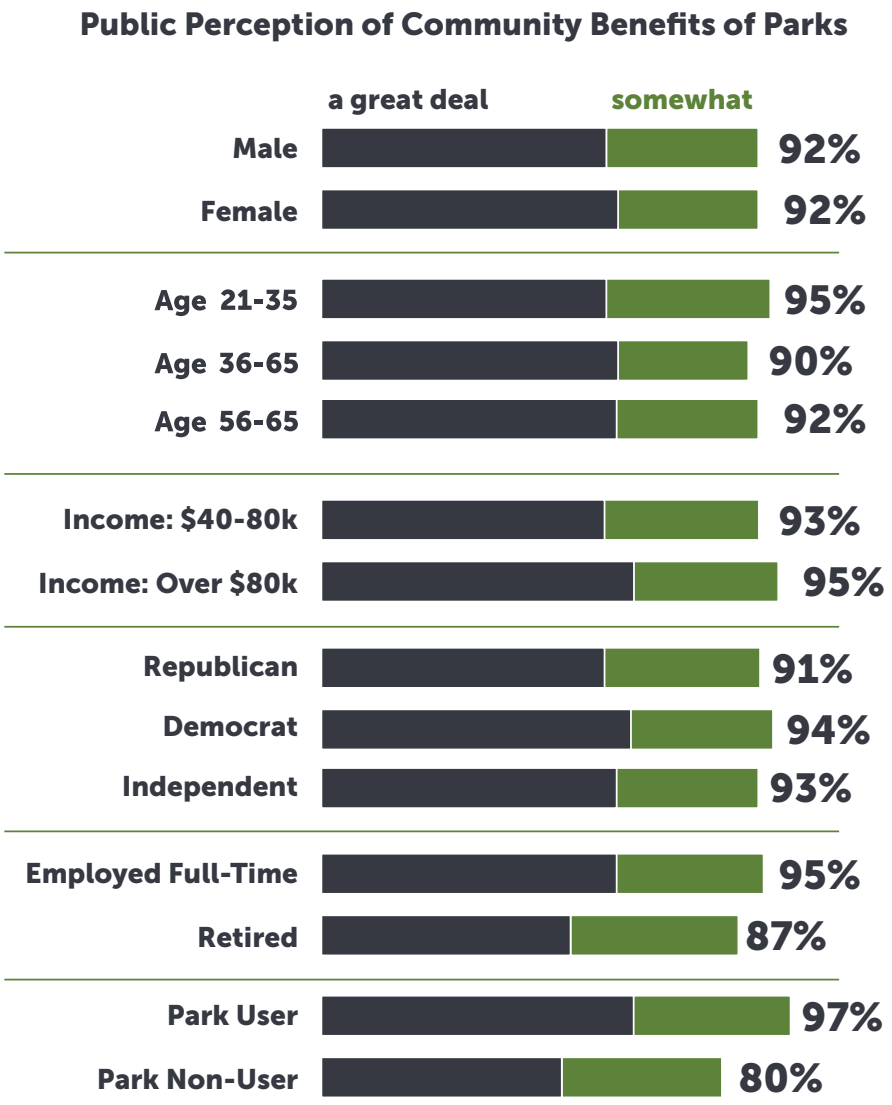
Americans say they personally benefit from having parks in their community, even if they themselves do not visit them.

It is not surprising that 97 percent of respondents who use their local parks report that they benefit from those areas. What is remarkable is that people who do not use local park areas nevertheless see local parks providing a high level of personal, household and community benefits. For example, 56 percent of non-park-users believe that local park areas provide a personal benefit to them. Fifty-three percent of non-users perceive local parks provide a benefit to other members of their household.

Even more striking is that 80 percent of non-park-users say that local park areas provide benefits to their community, with 48 percent indicating local park areas provide "a great deal" of benefit. These findings show that respondents do not have to directly use local park areas to believe that they, other members of their household, and especially the community at large benefit from having local parks in their area.



80 percent of non-park-users say that local park areas provide benefits to their community.



Beyond the local park user/non-user distinction, it is noteworthy that overwhelming majorities of Americans see their local park areas benefiting their communities regardless of their age, gender, level of education, income, marital status, political affiliation, household formation and employment status. The figure above illustrates this strong belief across a variety of demographic variables.

A majority of Americans have participated in organized recreation activities and services (e.g., programs) at some point in their lives.

Americans also value the organized activities provided by local recreation and park services. Thirty-two percent of respondents say they had used local recreation and park services during the previous year. Of those who had not participated in the past 12 months, 41 percent report that they participated in these services at some time in the past. When these two groups were combined, almost 60 percent of the respondents indicate that they used local recreation and park services at least once in their lives.

People say they personally benefit from organized recreation activities even if they do not participate in these activities.

Among those who did not use local recreation and park services during the past 12 months, 60 percent of respondents say that they received a personal benefit simply from the fact that their community had such services. Written another way, a person does not have to personally participate in local recreation services to believe that they received benefits from those activities, programs and services.

Americans profit from their local parks and organized recreation programs, with exercise/physical activity/fitness being the most frequently mentioned benefit.

So, how do Americans describe the specific benefits they receive from their local parks and organized recreation programs? According to the open-ended responses received in the 1992 and 2015 surveys, these benefits can take many different forms, including:

- Personal benefits — exercise, health, relaxation, fun/entertainment, enjoying being outdoors
- Environmental benefits — nature, aesthetics, fresh air, open space, wildlife
- Social benefits — sense of community, family-time togetherness, a safe place to take children, a place to meet people
- Economic benefits — availability, bringing business activity to community, influence on property values
- Facility/activity oriented benefits — recreation, sports, place to play, place to exercise pets

Exercise is frequently mentioned as the most important personal, household and community benefit derived from local parks. It was also identified as the most important personal and household benefit of organized recreation activities (i.e., programs).

These things were true in the 1992 study, and they remain true today. The specific type of benefit that Americans ascribed to recreation and parks is physical activity and health. These perceptions support the notion that parks are an important component of our nation's health system.

Americans see local park and recreation services as an important part of healthy living.

THE PRIORITIES OF LOCAL PARKS: NRPA'S THREE PILLARS

Americans agree that conservation, health and wellness and social equity are important priorities for local recreation and park services.

The evolving U.S. population, with new needs and desires, has presented a number of challenges for the nation that also impact local recreation and park services. These challenges span from a sedentary lifestyle that leads to obesity and other health problems to environmental and economic sustainability. Park and recreation agencies are a critical part of the solution because they provide their communities and their residents with a number of essential services and benefits.

NRPA summarizes the key priorities for local park and recreation agencies into its Three Pillars:

- **Conservation**

  Parks are critical in the role of preserving natural resources for communities. Local parks are the leaders, and often the only voice in communities, for protecting open space, connecting children to nature, and providing education and programming that helps communities engage in conservation practices.

- **Heath and Wellness**

  Local parks lead the nation in improving the overall health and wellness of communities. They are essential partners in preventing and combating some of the most complicated and expensive challenges our country faces — poor nutrition, hunger, obesity, chronic disease and physical inactivity.

- **Social Equity**

  Universal access to public parks and recreation is a right, not just a privilege. Local park and recreation agencies work hard to ensure that all members of their communities have access to their resources and programming.

But it is not just NRPA and its more than 50,000 members who agree the NRPA Pillars represent the critical role local and regional parks play in their communities. The NRPA Pillars also are the priorities on which Americans want their local parks to focus their resources.

Americans are almost in full agreement that the top priorities for their local and regional parks are associated with conservation, health and wellness and social equity. At least three-quarters of respondents (and, in some cases, upwards of six in seven) state that the following priorities should be "important" or "extremely important" for their local park and recreation agency:

CONSERVATION

86%
Conserving the natural environment

80%
Protecting open space

HEALTH & WELLNESS

84%
Offering facilities and services to improve physical health

80%
Offering facilities and services to reduce stress and improve mental health

SOCIAL EQUITY

88%
Ensuring that quality programs and facilities are equally accessible to all members of the community

77%
Addressing the needs of disadvantaged populations

Americans agree that the top priorities for their local parks are tied to Conservation, Health & Wellness and Social Equity.

THE ECONOMIC VALUE OF PARKS

Americans agree that local park and recreation services are worth the average amount of tax revenues invested in them…if not more.

In the current fiscal and political environment, local, state and federal governments face the challenge of meeting their broad mandates with constrained budgets. Local park and recreation agencies, too, have to do more with fewer resources, even though park agency spending leads to substantial economic activity in their communities and throughout the United States. The NRPA study The Economic Impact of Local Parks found America's local and regional public park agencies generated almost $140 billion in economic activity and supported almost 1 million jobs from their operations and capital spending alone in 2013.

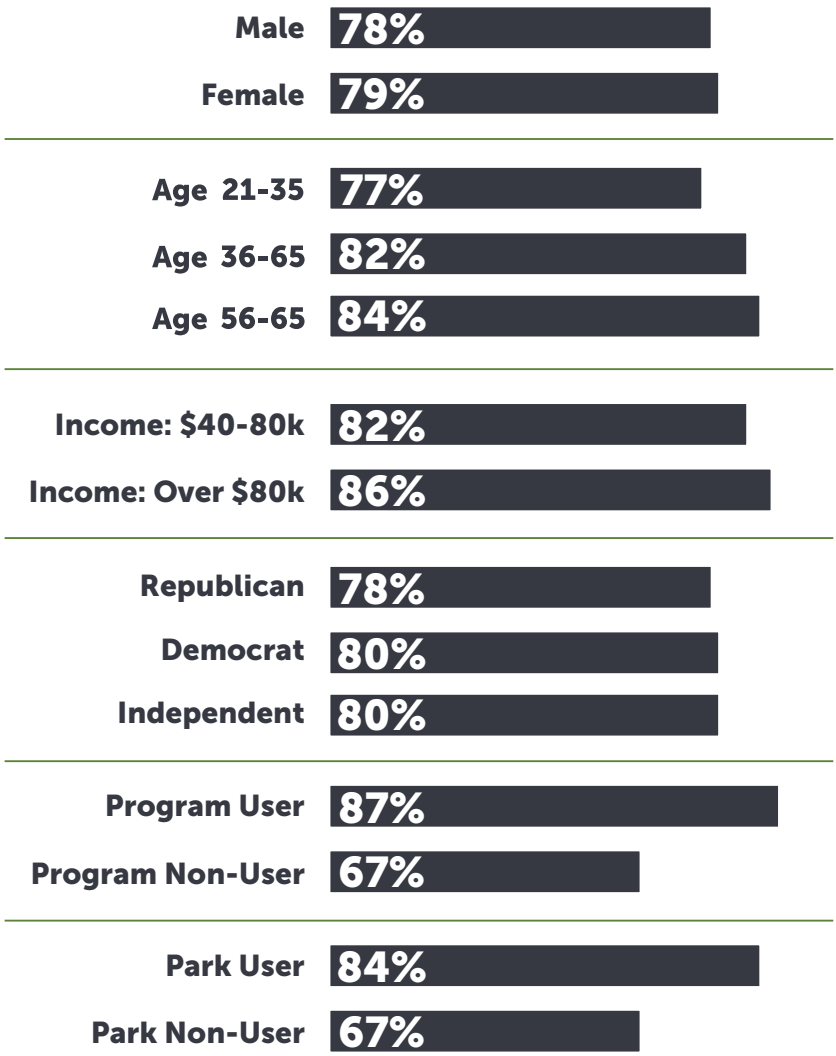
Local and regional park agencies are able to serve their constituencies — and generate significant economic activity — at a relatively modest cost to the taxpayers. According to data collected in NRPA's benchmarking tool PRORAGIS, Americans currently pay an average of $70 per person per year in local taxes to support park and recreation activities.

Four in five Americans agree that the services offered by their local park and recreation agencies are worth the average amount of $70 per person spent each year. Support for local parks and recreation through taxes increases with age (at least through the working years), education level, income and (not surprisingly) whether the person has ever participated in a park and recreation activity. Interestingly, tax support for local park and recreation funding was unassociated with political affiliation and sex/gender. Furthermore, two-thirds of people who never visited parks or participated in organized programs agree that these services are worth the $70 per person collected in local taxes each year.

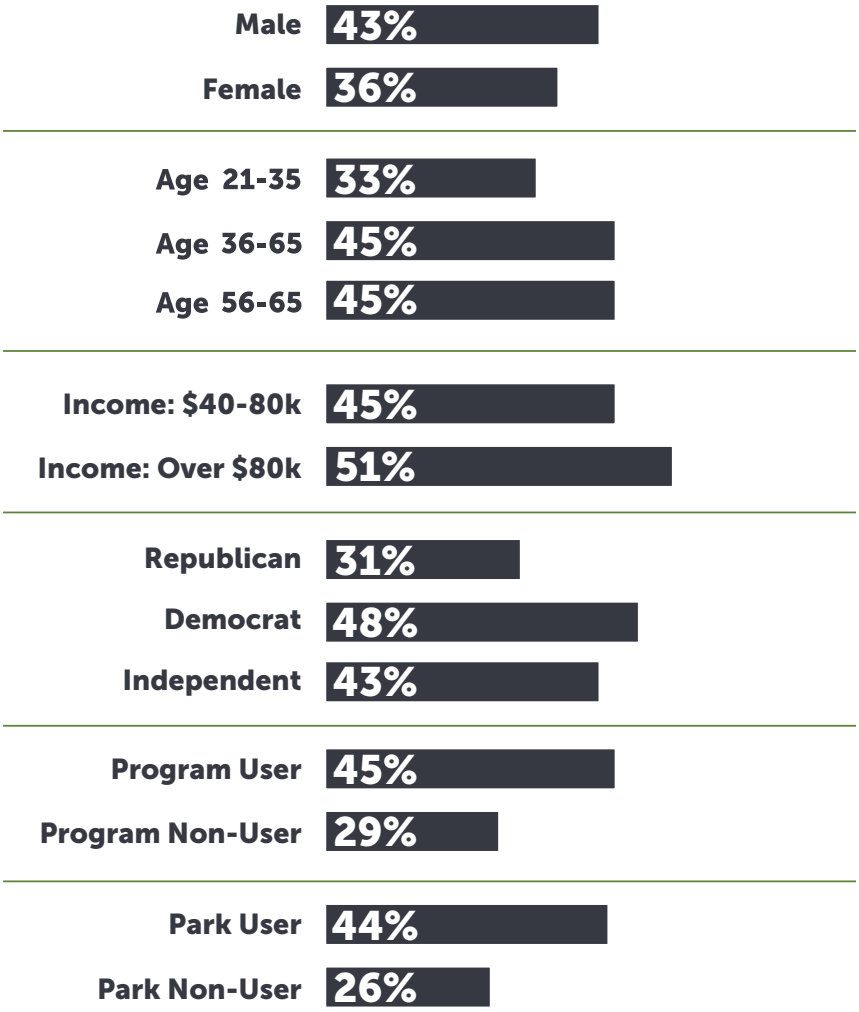
More so, two in five Americans are willing to pay even more than the 2015 U.S. average of $70 per person in local taxes to support their local and regional park systems. The support for increased funding of local parks is greater with males, those who are middle-aged, those with higher incomes, those who are Democrats and (not surprising again) those who have participated in local recreation services.

4 in 5 Americans say their local parks are well worth the average annual spending of $70 per person.

Agreement That Park and Recreation Services Are Worth $70, per Household Member, per Year



Percentage of People Willing to Pay More Than $70/Person Annual to Support Local and Regional Parks



So, who are these people who feel parks are worth more than the national average taxation bill of $70 per person? Of Americans who support increased taxation to support their local park and recreation agency

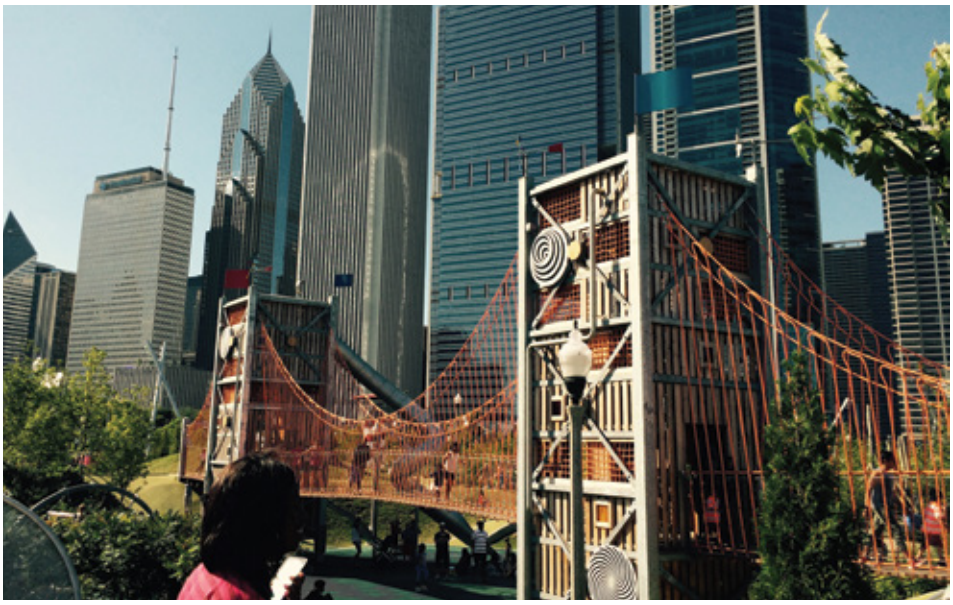
- 73 percent live near a park.
- 83 percent use parks, including 37 percent who do so on a frequent basis.
- 92 percent report a personal benefit from local parks.
- 92 percent report someone else in their household benefits from local parks.
- 97 percent believe their communities benefit from local parks.
- 55 percent have participated in a recreation activity at a local park at least once.

Even non-park users see tax spending on local parks as a good investment.

CONCLUSIONS AND LOOKING FORWARD

Much as they had a quarter of a century ago, a majority of Americans use local park and recreation services and believe that they are a great benefit to their communities. The support is strong among virtually every segment of our society, regardless of age, income, household formation and even political affiliation. Further, Americans are united in seeing their local parks as leaders in conservation, health and wellness, and social equity.

The fact that support for local parks is as strong today as it was 25 years ago is most telling. In the time since this study was last conducted, much has changed in our society. For example, America has become an older, better educated, more racially/ethnically diverse and a more urbanized nation. Social interaction and entertainment options have also grown exponentially during this time period, with the advent and widespread adoption of the Internet, social media, 500-channel cable TV and on-demand media. These developments have broadened the definition of recreation beyond what could have been imagined a quarter of a century ago.



So why have Americans remained passionate about local parks even with the demographic shifts, technological advancements, economic pressures, new forms of recreation and the changing face of leisure? Local parks remain at the core of what defines a healthy, prosperous and connected community, and nothing related to technological advances and demographic shifts has altered that view.

If anything, the demographic, societal and technological changes have heightened the need for the many benefits of parks; namely, being an important contributor to health and wellness, being a communal place where people of all ages and social strata can interact with each other, and being a place that protects and preserves high-priority conservation areas. Finally, unlike virtually every other form of recreation, access to local parks is ubiquitous and not subject to high entrance fees or other qualifications.

The implications of these findings are clear. Despite the tight fiscal environment, Americans agree that local, state and national leaders need to dedicate financial resources to support, sustain and expand local park and recreation agencies. As indicated by their strong support, Americans do not view their local park and recreation system as a luxury, but instead as a vital part of what makes their neighborhood a vibrant, dynamic community.

Americans' strong support for local parks is magnified further when considering the fact that local and regional public parks contribute significant economic activity to their communities. As demonstrated in the recently released NRPA report, *The Economic Impact of Local Parks*, local and regional park agency spending generated almost $140 billion in economic activity and almost 1 million jobs in 2013. Investment in public parks aids in the progress for greater conservation, health and wellness, and social equity while also bringing economic prosperity to towns, cities and regions throughout the United States.

About the Study

This report is a follow up to the landmark study *The Benefits of Local Recreation and Park Services: A Nationwide Study of the Perceptions of the American Public*, by Geoffrey Godbey, Alan Graefe and Stephen James. That study was published by NRPA in 1992 using survey data that had been collected in 1991.

In 2015, NRPA commissioned Andrew Mowen, Alan Graefe, Austin Barrett and Geoffrey Godbey to follow up on the 1992 study. Using a 24-question survey instrument that closely followed the questions, wording and order of the 1992 survey, the 2015 study is based on responses from 1,144 randomly selected U.S. adults. The data collected from the telephone study was weighted to reflect the average age distribution of the U.S. adult population. The results presented in this report are subject to a margin of error of +/- 3 percent.

This report is a summary of key highlights from the full study report titled, Americans' Use and Perceptions of Local Recreation and Park Services: A Nationwide Reassessment. Please review the full report for greater detail on the study findings and survey methodology, along with a profile of the survey respondents. Find the full study report and interactive tools at www.NRPA.org/americans-support-parks.

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SEA LEVEL RISE AND COASTAL VULNERABILITY ASSESSMENT AND IMPLEMENTATION PLAN

QUEEN ANNE'S COUNTY, MARYLAND

Photo credit: Brian Raines, gobikemd.com

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Table of Contents

FIGURES iii
TABLES iii
APPENDICES AND MAPS iv
ACRONYMS v
EXECUTIVE SUMMARY vii
1. INTRODUCTION 17
Coastal Flooding in Queen Anne's County 18
Sea Level Rise 19
Storm Surge 23
Tidal Datums 24
2. VULNERABILITY ASSESSMENT METHODS 25
Data Collection 25
SLR and Coastal Vulnerability Scenarios 25
3. SEA LEVEL RISE VULNERABILITY ASSESSMENT FINDINGS 27
Study Areas 27
Study Area 1 28
Study Area 2 28
Study Area 3 28
Study Area 4 28
Public Safety and Infrastructure 28
Emergency Service Facilities 30
Evacuation Routes 31
Piers 32
Roads and Bridges 33
Schools 34
Wastewater Facilities 35
Water Supply 36
Other Utilities 37
Private Residential Property 39
Commercial Development 40
Natural Resources and Land Use 41
Wetlands 42
Critical Areas 43
Agriculture 44
4. STORM SURGE IMPACTS 45

Public Safety and Infrastructure 45
Emergency Service Facilities 45
Evacuation Routes 47
Piers 48
Roads and Bridges 48
Schools 49
Wastewater Facilities 50
Water Supply 51
Other Utilities 52
Private Residential Property 53
Commercial Development 54
Natural Resources and Land Use 55
Wetlands 55
Critical Areas 56
Agriculture 57
5. TARGETED AREAS OF CONCERN 58
High Concern Resources 59
Moderate Concern Resources 61
Low Concern Resources 62
6. ADAPTATION STRATEGIES 64
Avoid 65
Accommodate 65
Protect 65
Retreat 65
Build Adaptive Capacity 65
7. RECOMMENDED ADAPTATION STRATEGIES 67
8. IMPLEMENTATION PLAN 74
Data Collection to Fill Data Gaps 74
Multi-Jurisdictional Hazard Mitigation Plan 74
Floodplain Management Ordinance 75
Zoning and Subdivision Regulations 75
Comprehensive Plan 76
Capital Improvement Plan 76
Prioritization of Adaptive Management Strategies 77
Funding 77
Public Engagement 77
Timeline 77
REFERENCES 78

FIGURES

Figure 1: Queen Anne's County's Vulnerable Areas viii
Figure 2: Queen Anne's County Location Map 18
Figure 3: Mean Sea Level Trend at Annapolis, Maryland 20
Figure 4: USACE Global Mean SLR Scenarios 20
Figure 5: Trends in Relative Sea Level at Tide Gauges around the Chesapeake Bay 21
Figure 6: Queen Anne's County Commissioner District Map 27

TABLES

Table 1: Assessed Resources and Countywide Impacts ix
Table 2: Adaptation Strategies xi
Table 3: Short –Term, Medium-Term, and Long-Term Adaptation Strategies xii
Table 4: Scientific and Technical Working Group Maryland Relative Sea Level Rise Projections 21
Table 5: FEMA Coastal Storm Surge Stillwater Elevations 23
Table 6: Tidal Datum Summary – Tide Station 8571892 24
Table 7: Total Acreage Vulnerable to Sea Level Rise 28
Table 8: Emergency Service Facility Property Impacts Due to Sea Level Rise 31
Table 9: Emergency Service Facility Building Impacts Due to Sea Level Rise 31
Table 10: Evacuation Route Impacts Due to Sea Level Rise 32
Table 11: Roadway Impacts Due to Sea Level Rise 34
Table 12: School Property Impacts Due to Sea Level Rise 34
Table 13: Wastewater Treatment Plant Property Impacts Due to Sea Level Rise 35
Table 14: Sewer Station Impacts Due to Sea Level Rise 35
Table 15: Water Treatment Plant Property Impacts Due to Sea Level Rise 37
Table 16: Utility Impacts Due to Sea Level Rise 38
Table 17: Impacts by Utility Due to Sea Level Rise 39
Table 18: Private Residential Property Impacts Due to Sea Level Rise 40
Table 19: Private Residential Building Impacts Due to Sea Level Rise 40
Table 20: Commercial Property Impacts Due to Sea Level Rise 41
Table 21: Commercial Building Impacts Due to Sea Level Rise 41
Table 22: NWI Wetland Impacts Due to Sea Level Rise 42
Table 23: DNR Wetland Impacts Due to Sea Level Rise 43
Table 24: Critical Area Impacts Due to Sea Level Rise 43
Table 25: Agricultural Land Impacts Due to Sea Level Rise 44
Table 26: Total Acreage Vulnerable to Storm Surge 45
Table 27: Emergency Service Facility Property Impacts Due to Storm Surge 47
Table 28: Emergency Service Facility Building Impacts Due to Storm Surge 47
Table 29: Evacuation Route Impacts Due to Storm Surge 48
Table 30: Roadway Impacts 49
Table 31: School Property Impacts 50
Table 32: Wastewater Treatment Plant Property Impacts 50
Table 33: Sewer Station Impacts 51

Table 34: Water Treatment Plant Property Impacts....51
Table 35: Utility Impacts....52
Table 36: Impacts by Utility....52
Table 37: Private Residential Property Impacts....54
Table 38: Private Residential Building Impacts....54
Table 39: Commercial Property Impacts....55
Table 40: Commercial Building Impacts....55
Table 41: NWI Wetland Impacts....56
Table 42: DNR Wetland Impacts....56
Table 43: Critical Area Impacts....57
Table 44: Agricultural Land Impacts....57
Table 45: Resource Concern Criteria and Targeted Action....58
Table 46: Public Safety and Infrastructure Short -Term Adaptation Strategies....68
Table 47: Public Safety and Infrastructure Medium -Term Adaptation Strategies....69
Table 48: Public Safety and Infrastructure Long -Term Adaptation Strategies....70
Table 49: Natural Resources and Land Use Short -Term Adaptation Strategies....71
Table 50: Natural Resources and Land Use Medium -Term Adaptation Strategies....72
Table 51: Natural Resources and Land Use Long -Term Adaptation Strategies....73

APPENDICES AND MAPS

APPENDIX A Coastal Vulnerability Area Maps
- MAP A1 Study Area 1
- MAP A2 Study Area 2
- MAP A3 Study Area 3
- MAP A4 Study Area 4
- MAP A5 Southern Kent Island - North
- MAP A6 Southern Kent Island - South

APPENDIX B Infrastructure Impact Maps
- MAP B1 Study Area 1
- MAP B2 Study Area 2
- MAP B3 Study Area 3
- MAP B4 Study Area 4
- MAP B5 Southern Kent Island - North
- MAP B6 Southern Kent Island - South

APPENDIX C Natural Resource Impact Maps
- MAP C1 Study Area 1
- MAP C2 Study Area 2
- MAP C3 Study Area 3
- MAP C4 Study Area 4
- MAP C5 Southern Kent Island - North
- MAP C6 Southern Kent Island - South

APPENDIX D Assessment Dataset Inventory

ACRONYMS

CCG	CoastSmart Communities Grant
CFR	Code of Federal Regulations
CRS	Community Rating System
DC	District of Columbia
DETF	DelMarVa Emergency Task Force
DNR	(Maryland) Department of Natural Resources
EMS	Emergency Medical Services
ESRGC	Eastern Shore Regional GIS Cooperative
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
GIS	Geographic Information System
GMSL	Global Mean Sea Level
HIRA	Hazard Identification and Risk Assessment
HPA	Habitat Protection Area
HUD	(U.S.) Department of Urban Development
IDA	Intense Development Area
IPCC	Intergovernmental Panel on Climate Change
KNSG	Kent Narrows/Stevensville/Grasonville
LDA	Limited Development Area
LiDAR	Light Detection and Ranging
MD	Maryland
MES	Maryland Environmental Service
MHHW	Mean Higher High Water
MLLW	Mean Lower Low Water
MSRSW	Mid-Shore Regional Solid Waste
NAVD88	North American Vertical Datum of 1988
NESDIS	National Environmental Satellite, Data, and Information Services
NFIP	National Flood Insurance Program
NGO	Non-Government Organizations
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
PFA	Priority Funding Area
QACO	Queen Anne's County
RCA	Resource Conservation Area
RK&K	Rummel, Klepper and Kahl, LLP
SFHA	Special Flood Hazard Area
SHA	(Maryland) State Highway Administration
SKI	Southern Kent Island

SLR	Sea Level Rise
STWG	(Maryland Commission on Climate Change) Scientific and Technical Working Group
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USNCA	U.S. National Climate Assessment
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

As a County with over 400 miles of coastline, Queen Anne's County's (QACO, County) economy and quality of life have historically been linked to its shores, tidal wetlands, farm fields, and the resources of the Chesapeake Bay. Because of its location, low elevations, and dependence on the coast, QACO is particularly vulnerable to the effects of Sea Level Rise (SLR), loss of low-lying land and structures, saltwater intrusion into surface water and ground water, and increased flooding from storm events. Changes in sea levels have the potential to impact existing infrastructure and natural resources in the short-term and also the durability of future development with long-term design life. Long-range planning and accounting for changes in sea level that may be expected in the County will help lead to informed decisions for public and private investments by minimizing risk and potential for damage to both existing and future resources. This study was prepared using widely-accepted methods and science in Maryland.

In July, 2014, the Maryland Smart Growth Sub Cabinet granted QACO a Priority Funding Area (PFA) exception to extend sewer service to nine communities located on Southern Kent Island (SKI). The project will provide public sewer to more than 1,200 existing homes and more than 600 vacant lots to alleviate the significant public health and environmental concern caused by the existing/failing septic systems penetrating groundwater. As a condition of the SKI project, the Maryland Smart Growth Sub Cabinet is requiring a sea level rise and coastal vulnerability assessment to be prepared. This assessment is being prepared through the CoastSmart Communities Grant (CCG) administered by the Maryland Department of Natural Resources (DNR). The objective of this assessment is to identify the impacts of SLR and coastal flooding, as well as build and/or plan the resiliency of the County to withstand sea level rise and future storms.

Results of the SLR and Coastal Vulnerability Assessment indicate that inundation from SLR will affect a range of resources, including infrastructure, land use, and natural resources, as well as increase the risk to public safety. Three SLR and storm surge scenarios have been mapped to identify areas of vulnerability and risk in the County:

1. SLR of 2 feet plus Mean Higher High Water (MHHW)
2. SLR of 4 feet plus MHHW
3. SLR of 2 feet plus MHHW plus coastal storm surge

Between 2.6% and 4.1% of the County's land area could be impacted by a SLR of two feet (2') to four feet (4'), respectively and 6.3% of the County's land area could see increased temporary impacts by two feet of SLR plus coastal storm surge. Within those potentially inundated areas lie transportation infrastructure, critical facilities, commercial properties, utilities, existing homes, agricultural fields, and expansive stretches of wetlands and wildlife habitat. Figure 1 shows the vulnerable areas of the County for the three scenarios. A comprehensive list of assessed countywide resources and their associated impacts is provided in Table 1.

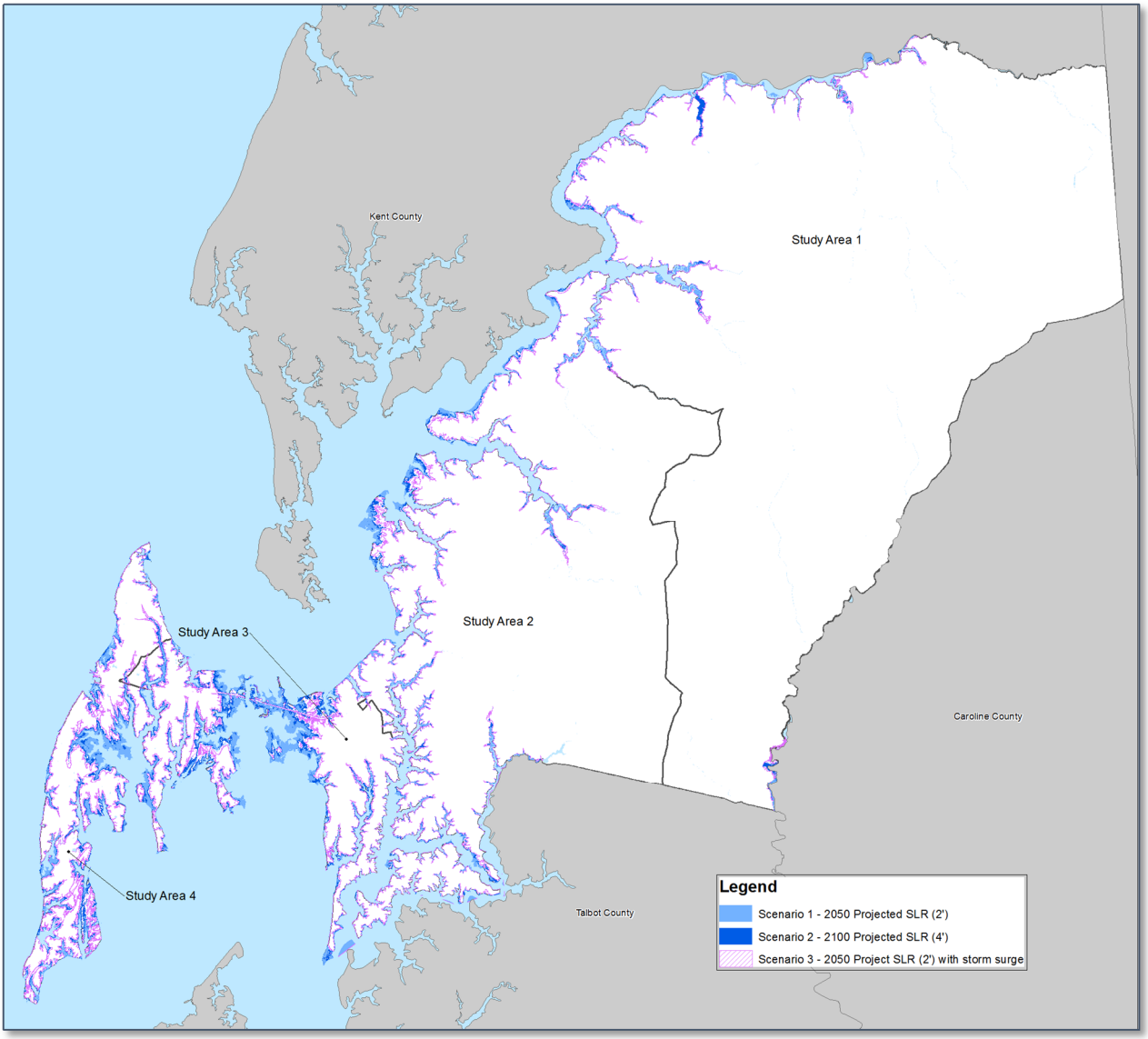

FIGURE 1: QUEEN ANNE'S COUNTY'S VULNERABLE AREAS

TABLE 1: ASSESSED RESOURCES AND COUNTYWIDE IMPACTS

Resource	Units	Total Number Countywide	Number Impacted by Coastal Vulnerability Scenarios			Concern
			Scenario 1	Scenario 2	Scenario 3[2]	
Emergency Service Facilities	Properties[1]	52	5	9	18	High
Emergency Service Facilities	Buildings	52	0	1	5	High
Evacuation Routes	Miles	258.3	1.4	4.2	8.1	High
Roadways	Miles	1,077.4	3.6	22.7	62.0	Moderate
Schools	Properties[1]	38	1	4	9	Low
Schools	Buildings	38	0	0	0	Low
Wastewater Treatment Plants	Properties[1]	5	3	4	4	High
Sewer Stations	Stations	31	2	13	16	High
Water Treatment Plants	Properties[1]	11	1	3	3	Moderate
Fire Hydrants	Each	393	8	30	68	Low
Dams	Each	19	0	0	2	Low
Catch Basins	Each	652	18	56	113	High
Culverts	Each	784	76	142	272	High
Concrete Drains	Each	17,710	430	1,337	2,902	High
Storm Drains	Segment	345	8	17	51	High
Drop Inlets	Each	524	30	96	143	High
Manholes	Each	1,112	12	71	173	High
Pipes	Segment	117	4	11	28	High
Stormwater Ponds	Each	415	27	60	90	Moderate

Resource	Units	Total Number Countywide	Number Impacted by Coastal Vulnerability Scenarios			Concern
			Scenario 1	Scenario 2	Scenario 3[2]	
Sub Stations	Each	8	0	0	0	Low
Transformers	Each	8	0	0	0	Low
Lamp Posts	Each	1269	18	132	304	Moderate
Light Poles	Each	2625	76	214	423	Moderate
Traffic Signal Poles	Each	21	0	0	0	Low
Utility Poles	Each	18,303	277	807	1,589	Moderate
Utility Boxes	Each	378	2	22	63	Moderate
Telecommunication Towers	Each	47	2	3	4	High
Private Residential Property	Properties[1]	21,316	1,412	4,732	6,538	High
Private Residential Property	Buildings	19,553	64	990	2,785	High
Commercial Development	Properties[1]	2,429	709	854	1,064	High
Commercial Development	Buildings	1,642	36	96	192	High
NWI Wetlands	Acres	27,337	3,606	4,211	4,780	High
DNR Wetlands	Acres	55,446	6,794	8,351	9,601	High
Critical Area	Acres	4,034	507	822	1,256	High
Agricultural Land	Acres	181,040	2,998	4,739	7,258	High

[1] Property impacts may only represent a portion of the property

[2] Scenario 3 may only represent a temporary impact of certain resources without long-term impacts

Adaptation Strategies

Adaptation strategies have been grouped into categories as shown in Table 2.

TABLE 2: ADAPTATION STRATEGIES

Adaptation Strategy	Description
Avoid	Avoidance strategies seek to limit new development or infrastructure in vulnerable areas.
Accommodate	Accommodate strategies acknowledge the long-term effects of SLR, while implementing short-term measures to maintain the existing use of a resource. These strategies decrease the risks of SLR without using potentially more costly protection strategies.
Protect	Protection adaptation strategies focus on protecting land from inundation or storm-induced flooding through construction of larger, longer-lasting projects such as building levees or raising elevations of roadways and other utilities.
Retreat	Retreat adaptation strategies allow for natural shore migration through land conservation and planned relocation of structures and other infrastructure.
Build Adaptive Capacity	The strategy of building adaptive capacity is not a solution in itself but is critically important to provide the data and knowledge to inform the aforementioned adaptation strategies. Communities with more capacity to adapt to SLR and coastal flooding are able to react quickly and make informed decisions.
No Action	The no-action strategy is the default strategy for communities that do no proactively plan for SLR and coastal flooding. This un-planned retreat results in loss of habitat and infrastructure that are imminent or have already occurred, leaving few viable options for adaptation. This adaptation strategy is not discussed in this document and is not recommended herein for any identified vulnerable resources.

Short-term, medium-term, and long-term adaptation strategies are recommended in Table ES-3. Short-term action strategies address the immediate needs of the County to build resiliency and protect against SLR and coastal flooding. These are typically strategies to either provide temporary protection of resources or planning activities for more permanent protection. Medium-term action strategies begin to implement short-term planning studies and increase the level of protection in the County. Long-term strategies aim to create more permanent solutions and resiliency to achieve lasting protection throughout the County.

TABLE 3: SHORT –TERM, MEDIUM-TERM, AND LONG-TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
Short-Term Adaptation Strategies				
• Increase building set-back distances • Identify opportunities for voluntary conservation easements • Create elevated County review procedures for projects in vulnerable areas • Evaluate process for transfer of development rights • Coordinate with private utility companies to incorporate SLR • Encourage FEMA to update Flood Insurance Rate Maps (FIRMs) to include SLR and re-map riverine flooding with SLR effects • Encourage FEMA to update FIRMs to include impacts to storm surge modeling based on SLR • Identify opportunities for voluntary conservation easements • Evaluate changes to zoning	• Improve emergency evacuation plans based on SLR projections • Evaluate boat transportation emergency routes to areas isolated by inundation • Flood-proof at-risk structures • Evaluate regulatory incentives that encourage SLR and coastal flooding adaptation • Evaluate mobile capabilities and mutual aid backup of emergency services • Install salinity observation stations to monitor changes to freshwater resources over time • Evaluate potential crop changes for agricultural areas such as aquaculture	• Evaluate feasibility of levees and other structural measures to protect vulnerable areas • Identify targeted areas to be protected • Evaluate and determine regulatory elevations for vulnerable areas • Coordinate SLR adaptation with SHA • Evaluate elevation of critical component elevations of wastewater and water treatment/ transmission facilities • Coordinate development and Capital Improvement plans to address as many affected resources as possible • Identify beaches with high erosion rates • Evaluate living shoreline protection • Identify potential wetland migration areas	• Identify areas of high vulnerability • Evaluate relocation potential of structures and infrastructure in vulnerable areas • Evaluate feasibility of land acquisition of vulnerable parcels • Purchase frequently flooded areas and remove structures • Identify areas of high vulnerability • Identify land conservation areas and protect with easements	• Improve coordination with Federal, State, and Local officials • Create new partnerships to increase resources for research and development of adaptation options • Conduct comprehensive inventory of funding mechanisms, regulations, and policies to remove barriers to SLR adaptation • Provide technical assistance to local governments, business owners, and residents • Develop a prioritization plan of adaptation actions • Evaluate socio-economic impact of SLR • Participate in FEMA's Community Rating System and employ CRS activities • Develop framework for decision making regarding land protection and restoration strategies

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
Medium-Term Adaptation Strategies				
• Implement conservation easements • Monitor set-back requirements • Limit or prohibit new infrastructure in vulnerable areas • Implement transfer of development rights • Require private utilities to build new infrastructure outside of vulnerable areas • Implement conservation easements • Allow coastal wetlands to migrate landward	• Develop plans for mobilization of emergency management services • Require additional freeboard of new homes above the base flood elevation • Incorporate regulatory incentives for innovative projects that adapt to SLR and coastal flooding • Improve boat access for emergency evacuation services • Monitor conversion of freshwater wetlands and agricultural land to salt water wetland	• Require roads to be elevated to provide access to new development and targeted protection areas • Require new development to protect against regulatory elevations in vulnerable areas • Evaluate impacts to adjacent properties from adaptation actions • Coordinate elevation of evacuation routes/ bridges with SHA • Retrofit wastewater and water treatment/ transmission facilities as needed • Elevate wastewater manholes above anticipated SLR and flood elevations to prevent inundation • Replenish beaches • Preserve wetland migration areas • Coordinate sand supply from State or Federal dredging projects for reuse	• Create a special funding mechanism for purchase of frequently flooded structures • Purchase frequently flooded areas and remove structures • Implement rolling easements • Create new land conservation areas	• Engage public participation in adaptation decisions • Implement cost-sharing projects with State and Federal agencies • Update Multi-Jurisdictional Hazard Mitigation Plan, Floodplain Management Plan, Zoning Ordinance, Comprehensive Plan, and Capital Improvement Plan to address SLR • Continue FEMA's CRS program and employ CRS activities • Identify grant opportunities to incorporate SLR adaptation projects • Encourage DNR to continually evaluate and update Critical Area

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
Long-Term Adaptation Strategies				
• Continue monitoring set-back compliance • Monitor conservation easements • Continue limiting or prohibiting new resources in vulnerable areas • Monitor transfer of development rights procedures and adjust as needed • Monitor coastal wetlands and enhance as needed • Monitor conservation easements	• Construct new infrastructure projects above the vulnerable elevation • Monitor SLR and coastal flooding effects on infrastructure and adjust regulatory requirements • Continue monitoring regulatory incentives for projects incorporating SLR • Enhance conversion of freshwater wetlands and agricultural lands to saltwater wetlands	• Elevate roadways in targeted protection areas • Retrofit wastewater and water treatment facilities as needed for protection against inundation • Adjust adaptation actions to protect adjacent properties • Monitor wetland migration and identify/ preserve additional wetland migration areas • Coordinate elevation of evacuation routes/ bridges with SHA	• Purchase frequently flooded areas and remove structures • Monitor rolling easement compliance • Remove structures that prevent shoreline movement • Monitor land conservation areas and reassess as needed	• Evaluate adaptive capacity and adapt as necessary • Employ CRS activities

Implementation Plan

Implementation of the recommended adaptation strategies can best be achieved at the County level through more stringent regulatory requirements and revision of planning documents to incorporate the impacts of SLR and coastal flooding scenarios. The recommended adaptation strategies are intended to be somewhat broad in nature so that they were not unnecessarily prescriptive. However, since specific actions are not proposed herein the County will need to decide which strategies may work best in the County based on funding, political support, socio-economics, regulatory environment, and County agency organization and objectives. For example, the recommendation to "identify targeted protection areas" is an important recommendation since protection of all County resources is not economically feasible, but will require the County to determine how to best allocate funding to protect those areas most critical to the livelihood of the County residents.

Implementation opportunities to incorporate SLR and coastal flooding scenarios into county planning and regulatory documents include:

- Updates to the County's Multi-Jurisdictional Hazard Mitigation Plan to incorporate hazard identification and risk, identify mitigation goals and prepare execution and maintenance plans for flooding, hurricanes, and other hazards in the County. This will also permit access to federal funding for SLR related projects.
- Updated to the County's Floodplain Management Ordinance to add more-stringent requirements to the minimal requirements of FEMA. This will also help the County with FEMA's Community Rating System (CRS) rating. Protecting against future SLR will also build resiliency in today's storm events.
- Updates to Zoning and Subdivision Regulations through the evaluation of zoning districts, potential creation of a special district for vulnerable areas, changes to permitted uses by district, and changes to minimum lot sizes and/or setback distances.
- Updates to the Comprehensive Plan to incorporate SLR and related coastal hazards. This may include changes to ultimate land uses to account for SLR and coastal flooding. Goals for sensitive areas, water resources, priority preservation areas, historic and cultural preservation, County/Town planning framework, economic development and tourism, and community facilities and transportation should be updated accordingly.
- Updates to Capital Improvement Plan to incorporate SLR and coastal hazards into capital projects. Identification of funding options to build resiliency in the County should also be considered with this plan.

In addition to these planning documents, the County should consider the prioritization of adaptive management strategies. Due to the magnitude of the recommendations, the diversity in vulnerabilities, the diversity of resources that are vulnerable, and the realization of funding limitations and capacity – a prioritization strategy should be developed for implementation opportunities.

As Capital Improvement Plan funds are limited and there is extensive competition for the funds. Strategies to pursue these funds and position for high potential for reward should be part of an implementation plan. The need to generate additional funding resources is evident and a strategy to develop those alternative programs is vital to an implementation plan. The County should continue to look for creative fee structures, taxes, public/private partnerships, incentive programs, and the like for needed funding.

Use of this Document: This document and its appendices provides a planning-level accounting of resources vulnerable to SLR of up to four feet in QACO. It includes background information and a description of the process used to assess vulnerability based on the best available science and data at this time. It should be noted that SLR predictions and storm surge studies will change over time. This document has been prepared as a planning tool to prioritize adaptation strategies and provide information and guidance to help the County and its residents to make informed decisions when considering future impacts, actions, and investments in areas that may be at risk from the effects of SLR and coastal flooding. It should not be considered a regulatory document of any kind. Any recommended adaptation action that would require a change in legislation of regulations would go through the normal legislative and public processes.

1. INTRODUCTION

Queen Anne's County (QACO, County) contains more than 400 miles of shoreline with a significant portion of the County located in low-lying coastal areas. Because of its location, portions of QACO are particularly vulnerable to the effects of rising sea levels and coastal flooding (Figure 2 shows a location map of QACO). Other natural processes such as storm events, wave action, erosion, and sediment deposition are also affected by changes in sea level to change the size and makeup of shorelines, wetlands, and streams. However, as the rates of sea level rise (SLR) accelerate, SLR may increasingly become the driving force in coastal changes. Accelerated rates of SLR could cause inundation of low-lying land, allow greater saltwater intrusion into groundwater and streams, and promote an increased extent and severity of coastal and riverine flooding. Inundation of low-lying land and structures can occur when the sea level rises faster than natural processes can build up land. This can cause dry land to become flooded and can cause wetlands to convert to open water. Structures, including homes, roads, critical infrastructure, businesses, and utilities, that have been constructed in low-lying areas can become difficult to access and can become inundated or structurally unstable.

The population of QACO as determined by the 2000 Census was 40,563, and the 2010 Census was 47,798, an increase of 17.8% (Reference 1). The vision for the future of QACO has remained constant with emphasis on maintaining and enhancing a "predominately rural county with small towns connected by creeks and county roads through fields and forest – a great place to live; a county that encourages agriculture, seafood and maritime industries, tourism and outdoor sports, small business and high tech enterprise – a good place to work; a county that is a faithful steward of its natural and cultural heritage – a good neighbor for the Bay and other Eastern Shore counties; a county in which development by some does not impair the quality of life enjoyed by all – a good community that protects the expectations and opportunities of all its citizens." (Reference 2). Many goals included in this vision have the potential to become impacted by SLR and coastal storm events.

In July, 2014, the Maryland Smart Growth Sub Cabinet granted QACO a Priority Funding Area (PFA) exception to extend sewer service to nine communities located on Southern Kent Island (SKI). The project will provide public sewer to more than 1,200 existing homes and more than 600 vacant lots to alleviate the significant public health and environmental concern caused by the failing septic systems penetrating groundwater. As a condition of the SKI project, the Maryland Smart Growth Sub Cabinet is requiring a sea level rise and coastal vulnerability assessment to be prepared. This assessment is being prepared through the CoastSmart Communities Grant (CCG) administered by the Maryland Department of Natural Resources (DNR). The objective of this assessment is to identify the impacts of SLR and coastal flooding, as well as potential ways, means, approaches, and strategies to build the resiliency of the County to withstand sea level rise and future storms.

This document assesses the vulnerability of the County's infrastructure, private property, and natural resources; identifies potential action strategies; recommends the most feasible short-term, medium-term, and long-term strategies; and identifies implementation plan recommendations and timeline to build resiliency in the County.

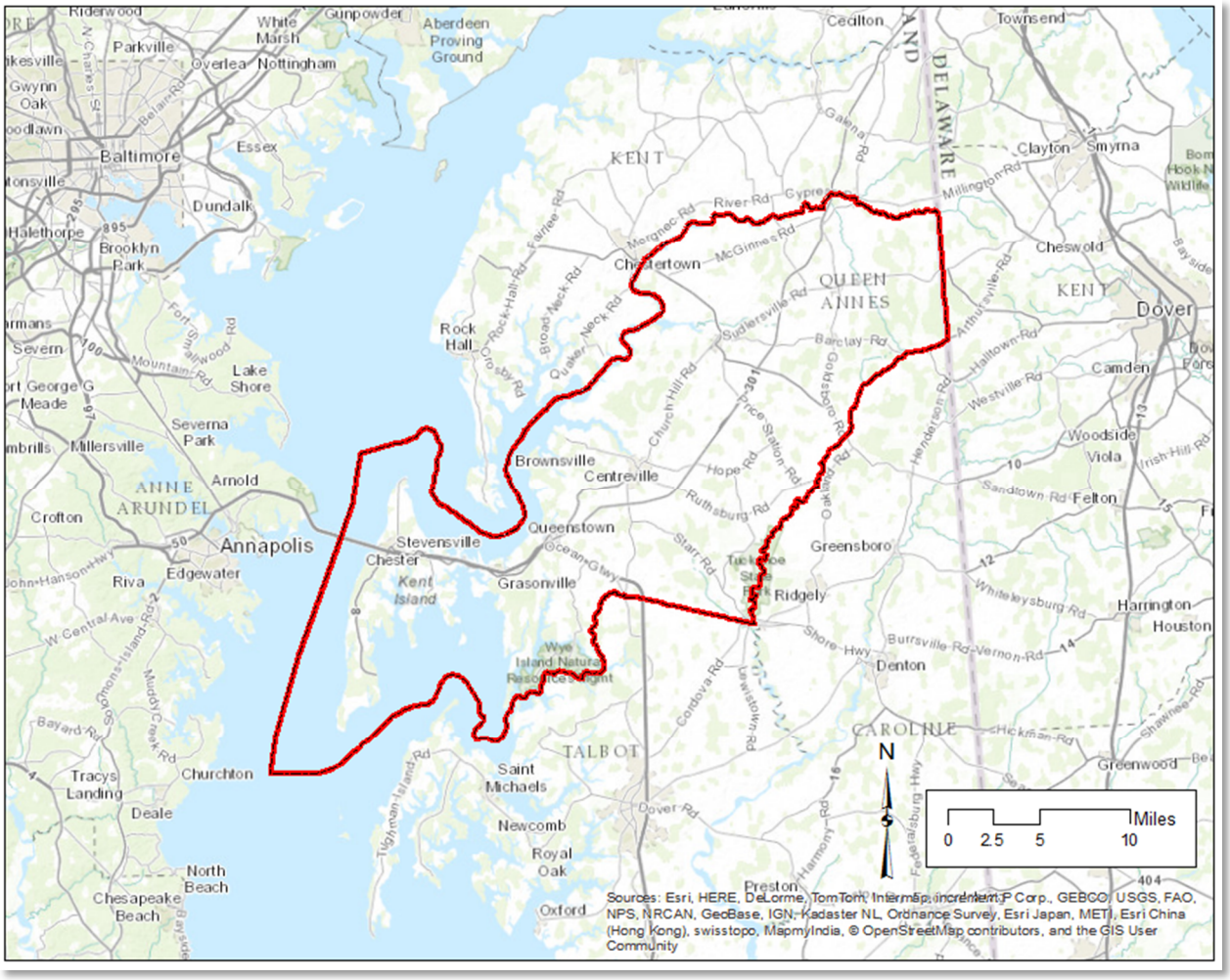

FIGURE 2: QUEEN ANNE'S COUNTY LOCATION MAP

Coastal Flooding in Queen Anne's County

The low lying, relatively undisturbed topography, high seasonal water tables, poor drainage, and high runoff characteristics of the soils in QACO combine to provide a high flooding potential. When heavy rainfall and high river discharge combine with storm tides, low lying areas adjacent to rivers and estuaries become inundated with saltwater. Major floods in QACO have occurred in 1933, 1954, 1955, 1960, 1972, 1999, 2003, 2008 and 2011 (Reference 3). The following are detailed records of documented historical coastal flood damage:

- In late October 1954, Hurricane Hazel caused extensive damage to QACO. Damage estimates were placed at approximately $500,000. One hundred people were evacuated from Kent Narrows as a result of high storm tides. The storm tides in the Towns of Centreville and Queenstown were reported as the highest in history. The storm tide flooded the office of Valiants Fertilizer in Centreville. Two 18,000-gallon, empty oil tanks were overturned at the Thocar Oil Company by the high tide. Many boats were washed ashore by the high winds and tide (Reference 4).

- During August 1955, Hurricane Connie struck QACO. Advance warning made it possible for residents to prepare their property against high water, drastically reducing property damages in comparison with Hurricane Hazel (Reference 4).
- On September 18, 2003, Hurricane Isabel caused a record-breaking tide and storm surge up the Chesapeake Bay, heavy rain and strong power outage producing winds. In QACO, public and private damage was estimated at 27 million dollars. Thirty-seven homes were destroyed, 151 suffered major damage and 192 suffered minor damage. Most of the damage was caused by tidal flooding, although four homes were damaged by fallen trees. The heavy rain did not coincide with the tidal flooding and there were no reports of stream related flooding (Reference 5). The maximum observed water level was 1.262 meters (4.14 feet) higher than the mean higher high water tide elevation in Cambridge, Maryland (Reference 6).

FLOODING OF STREETS DURING HURRICANE ISABEL.

- Coastal flooding occurred on January 25, 2010 in QACO as strong south winds up the Chesapeake Bay produced a high tide. Flooding occurred in the Kent Narrows area and along Maryland State Route 18 near Dundee Avenue and Love Point causing closure of the road in both locations (Reference 5).

In addition to coastal flooding due to storm surges, several other significant rainfall and storm related wind events have occurred in the County which caused riverine flooding, property damage, emergency evacuations, road closures, and loss of life. Although none of the significant rainfall events coincided with elevated storm tides, future SLR will only exacerbate the effects of rainfall-induced storm events.

Sea Level Rise

SLR is not a new problem, but its historic rate is rapidly increasing according to multiple sources (References 7-9). Sea level trends have been recorded by tide stations, which measure the height of water referenced to a stable point on land with a known elevation (benchmark). Tide stations are primarily installed for navigational purposes and their data are used to make tide predictions. Long term data sets from these tide stations have also been used to understand local and global sea level trends. Globally, sea level rises for two primary reasons: expansion of saltwater as it warms and loss of ice on land (Reference 7). Other local phenomena, conditions, and processes can also contribute to SLR. As the ocean absorbs solar radiation in excess of what it emits, the water warms. When water warms, it expands and causes the average level of the water to rise. In addition, as the Earth becomes warmer, land-based glaciers and ice-caps melt and slide into the sea. This melt-water and ice empties into oceans and causes the average level of the water to rise. In combination, these two forces constitute the global rate of SLR. The global sea level rate during the twentieth century, as determined by tide gauge measurements, was about 0.07 inches per year (or about 7 inches over 100 years) (Reference 7). Tide gauges indicate that the change in the local mean sea level in Maryland is greater than the global sea level rate. The rate of change recorded at the tide gauge in Annapolis, Maryland is 0.14 inches per year (or 14 inches over 100 years), as compared to global rate of 0.07 inches per year. This difference is due to the vertical movement of the Earth's crust, which is causing the land in the Mid-Atlantic to slowly sink. This combined motion of the

land and the sea is recorded by tide stations. Figure 3 shows the mean sea level trend at a tide station in Annapolis, Maryland. Other tide stations throughout the Mid-Atlantic show similar trends.

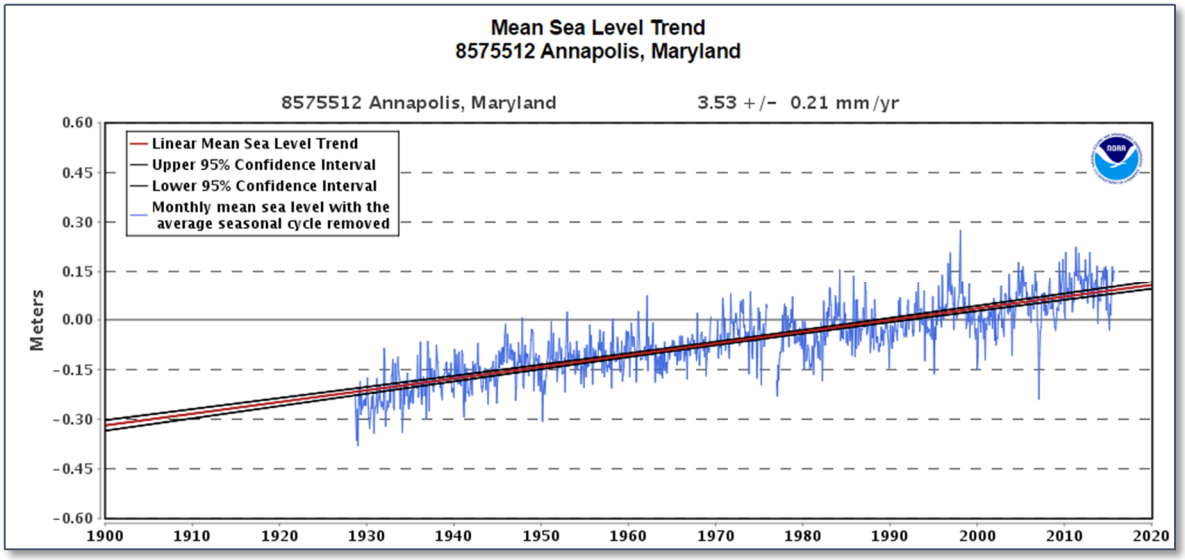

FIGURE 3: MEAN SEA LEVEL TREND AT ANNAPOLIS, MARYLAND

In 2007 the Intergovernmental Panel of Climate Change (IPCC) indicated that the rise in global mean sea level (GMSL) would not likely exceed 0.52 m (1.7 ft) by the end of the century. However, the IPCC explicitly excluded future changes in flows from polar ice sheets that, at that time, could not be confidently modeled based on the peer-reviewed literature (Reference 8).

Since 2008, there has been additional scientific literature to indicate that sea level is likely to rise more than estimated by the IPCC 2007 assessment (Reference 8). In 2011, the U.S. Army Corps of Engineers (USACE) issued guidance for USACE projects specifying three SLR scenarios – low (0.5 m, 1.6 ft), medium (1.0 m, 3.3 ft) and high (1.5 m, 4.9 ft) of GMSL and an adjustment based on the local rate of vertical land movement (Reference 9), shown in Figure 4.

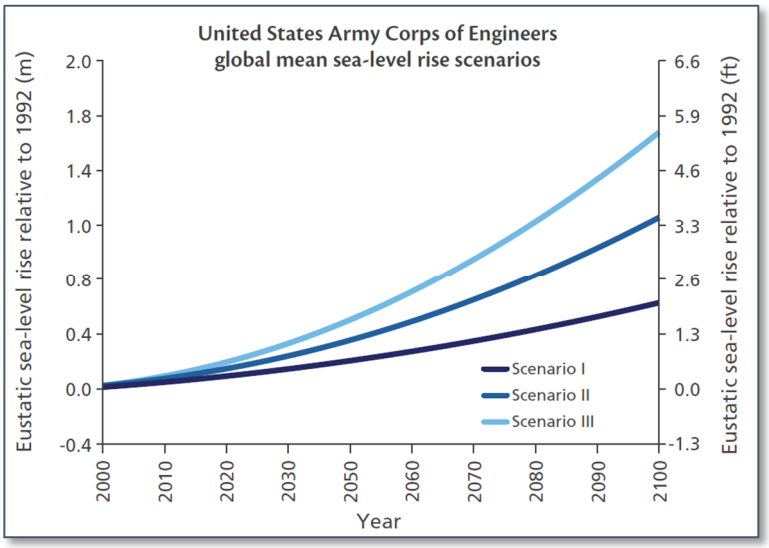

FIGURE 4: USACE GLOBAL MEAN SLR SCENARIOS

Governor Martin O'Malley issued an Executive Order on Climate Change and "Coast Smart" Construction in December 2012. The order directed that "The Scientific and Technical Working Group (STWG) shall review the sea-level rise projections in the Maryland Climate Action Plan (2008) and shall provide updated projections based on an assessment of the latest climate change science and federal guidance." The STWG

reviewed several assessments and studies to narrow the probable range of relative SLR based on the latest science including two important assessments of projected SLR by the National Research Council (Reference 10) and the U. S. National Climate Assessment (Reference 11).

Several recent papers provide a detailed analysis of SLR trends as measured by tide gauges along the Mid-Atlantic coast. The STWG report notes that these papers consistently show that sea level has been rising faster in the Mid-Atlantic region than elsewhere along the Atlantic coast and that the rate of SLR began to increase in the late 1980s. Figure 5 shows trends in relative sea level at tide gauges around the Chesapeake Bay (from STWG, 2013).

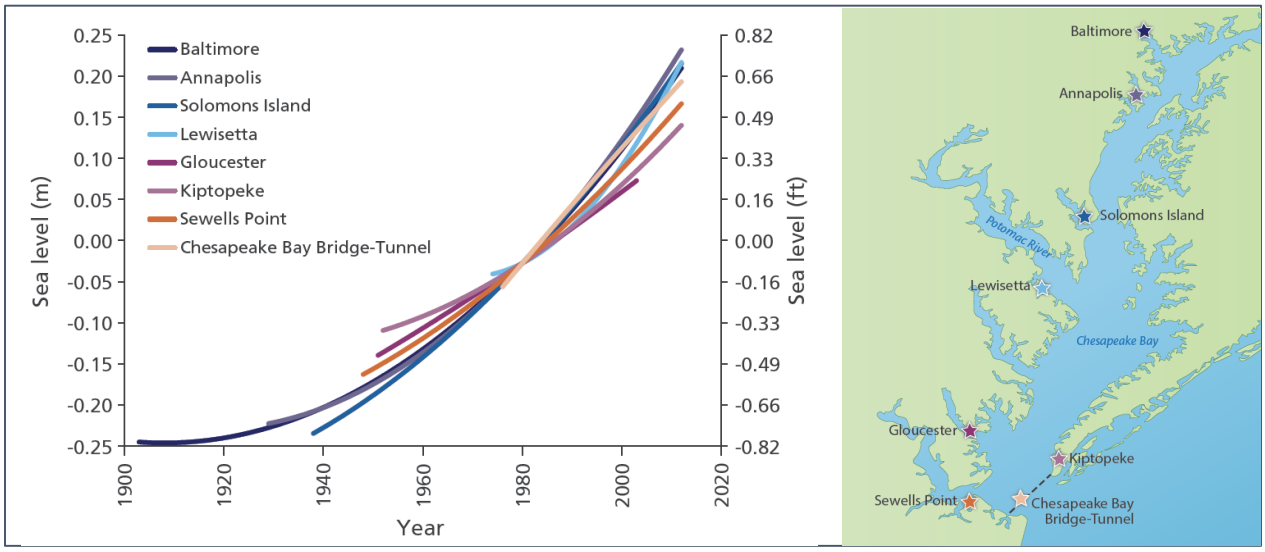

FIGURE 5: TRENDS IN RELATIVE SEA LEVEL AT TIDE GAUGES AROUND THE CHESAPEAKE BAY

The 2013 STWG assessment resulted in providing the best, low, and high projections of relative SLR in Maryland for 2050 and 2100 based on contributions of thermal expansion of the ocean, land-ice loss in glaciers and polar ice caps, vertical land movement (land subsidence) in the Mid-Atlantic, and regional ocean dynamics of the Chesapeake Bay. These projections are as shown in Table 4.

TABLE 4: SCIENTIFIC AND TECHNICAL WORKING GROUP MARYLAND RELATIVE SEA LEVEL RISE PROJECTIONS

Maryland Relative SLR	Relative SLR (meters)	Relative SLR (feet)
2050 Best	0.4	1.4
2050 Low	0.3	0.9
2050 High	0.7	2.1
2100 Best	1.1	3.7
2100 Low	0.7	2.1
2100 High	1.7	5.7

The STWG also provided the following practical advice for adaptive planning:

1. It is prudent to plan for relative sea-level rise of 2.1 feet by 2050 in order to accommodate the high end of the National Research Council (NRC) projections as adjusted for regional factors particular to Maryland. Based on the various methodologies available today, it is very unlikely to rise more than that within that timeframe. This would essentially constitute an increase in mean sea level, on top of which storm surge would have to be factored in, to judge the risks to land-based facilities.
2. Providing planning advice for the end of the century is more challenging, both because the actual greenhouse gas emissions trajectory is unknown and because of greater uncertainties in the models of sea-level response, particularly regarding the rate of loss of the mass of polar ice sheets. How one should use the guidance provided by our projections depends both on the longevity of investments at risk and the acceptance of risk. For example, if one were concerned about an investment in facilities or public infrastructure the useful life of which is not intended to extend beyond this century or which could tolerate very occasional inundation, one might find it acceptable to use our Best projection of sea-level rise of 3.7 feet for adaptation planning. If, on the other hand, one is concerned about facilities and infrastructure intended to be useful well into the next century or for which any risk of inundation is unacceptable, it might be prudent to use our High projection of relative sea-level rise of 5.7 feet. Furthermore, planners and engineers should also take into consideration anticipated changes in storm surge heights and tidal flood levels as a result of future sea-level rise, a subject deserving further research.
3. The projections presented here are improvements on those used in the 2008 Maryland Assessment because they are based on the recent process-based projections by the National Research Council and include a range of possibilities that reflect uncertainties about greenhouse gas emissions and the responses of climate and land ice. In contrast with the scenario-based approaches used in the U.S. Army Corps of Engineers guidance, the National Climate Assessment, and adaptation planning in the neighboring states of Delaware and Virginia, these new projections also narrow the range of possibilities and define probabilities based on current scientific evidence. Because our scientific understanding will continue to improve and the trajectories of greenhouse gas emissions will become clearer over time, periodic updating of these sea-level rise projections should be undertaken. Certainly, the new sea-level rise projections in the forthcoming Intergovernmental Panel on Climate Change (IPCC) should be considered.
4. Maryland's Climate Action Plan addresses both actions taken to limit the magnitude of climate change (commonly referred to as mitigation) and those taken to adapt to climate change. This is appropriate as they are two sides of the same coin: adaptation is required even if aggressive mitigation is undertaken, but without mitigation adaptation becomes increasingly daunting. This is particularly evident with regard to sea-level rise, which will continue to occur through this century and into the next as a result of the global warming that has already occurred. Furthermore, global warming will be substantially greater in subsequent centuries, unless greenhouse gas emissions are substantially reduced during this one.

Based on this advice for adaptive planning and discussions with QACO representatives at the project kickoff meeting, this study uses 2.0 feet and 4.0 feet as relative SLR projections for 2050 and 2100 respectively, to identify vulnerable coastal areas, and to enable planning for building resiliency of the identified areas.

Storm Surge

As sea levels rise, temporary flooding from coastal storm events may become more widespread. As sea levels increase, so do the storm surge heights generated by a given storm. An increased storm surge height, combined with resulting loss of tidal wetlands that provide natural flood protection may result in increased flood depths and erosive forces in already flood-prone areas. It may also cause flooding in areas further inland that have not previously been flood-prone.

While increased storm surge heights and flooding is an important consideration for understanding the potential range of effects caused by SLR, modeling specific storm surge impacts countywide is a complicated and resource-intense undertaking that was outside the scope of this assessment. For this reason, the 100-year storm surge elevation for QACO as reported by FEMA in their 2014 Flood Insurance Study (FIS), averaged Countywide, is used in this assessment to assess the vulnerability of several resources discussed in Section 4 of this report. Table 5 summarizes the range of storm surge stillwater elevations for the 10-Percent-Annual-Chance (10-Year), 2-Percent-Annual-Chance (50-year), 1-Percent-Annual-Chance (100-Year), and 0.2-Percent-Annual-Chance (500-Year) floods from the FEMA FIS based on tidal and wind setup effects. It is important to note that the 100-Year storm event does not imply that this magnitude of storm will only occur once every one hundred years but that it is a storm that statistically has a one-percent chance of occurring in any given year. All elevations are reported in feet and reference the North American Vertical Datum of 1988 (NAVD88).

TABLE 5: FEMA COASTAL STORM SURGE STILLWATER ELEVATIONS

Flooding Source and Location	10-Year	50-Year	100-Year	500-Year
CHESTER RIVER				
From the mouth of the Corsica River to Kent Narrows	3.8-4.2	4.4-4.9	4.6-5.1	5.5-6.2
CHESAPEAKE BAY				
From Kent Narrows to William Preston Lane, Jr. Memorial Bridge	3.7-3.9	4.2-4.5	4.4-4.7	5.4-5.7
From William Preston Lane, Jr. Memorial Bridge to the mouth of the Eastern Bay	3.5-3.7	4.0-4.2	4.3-4.4	5.1-5.4
CRAB ALLEY				
Entire Shoreline	3.7-3.9	4.2-4.4	4.4-4.6	5.6-6.0
EASTERN BAY				
From the mouth to the mouth of Crab Alley Bay	3.5-3.9	4.1-4.2	4.4-4.6	5.6-6.0
From the mouth of Prospect Bay to Bennett Point	3.7-3.8	4.2-4.3	4.4-4.5	5.4-5.8
PROSPECT BAY				
Entire Shoreline	3.8-3.9	4.3-4.5	4.5-4.8	5.5-6.4

For the purposes of this study an average 100-year storm surge elevation of 4.6 feet is used to represent the storm surge countywide.

It should also be noted that the effects of wave heights associated with coastal storm surge flooding are not represented in this study. FEMA's FIS indicates a range of significant wave heights from 0.5 feet in the upper portions of the Chester River and Cox Creek to 4.7 feet along the western shore of Eastern Bay. Generally within the County, greater wave heights are expected where water depth is greater and fetch length is longer such as in the Chesapeake Bay and Eastern Bay where the coastline is more prone to damaging wave action during high wind events due to the significant fetch over which winds can operate. From the mouth of the Chester River further upstream, the fetch considerably shortens to be within the river channel, therefore lower wave heights are anticipated. Although not mapped herein, wave prone areas should be considered in future resiliency planning.

Tidal Datums

With any coastal study it is important to understand tidal datums relative to land-based topographic data. For this study, the National Oceanic and Atmospheric Administration's (NOAA's) Tide Station 8571892 was used to determine tidal datums. Station 8571892 is located in Cambridge, Maryland on the Choptank River just downstream of US 50 and was established in October 1980. Tidal datums from NOAA for this station are shown in Table 6, referencing Mean Lower Low Water (MLLW). A datum adjustment is also shown to reference NAVD88 datum for comparison to LiDAR-based topographic data provided by QACO.

TABLE 6: TIDAL DATUM SUMMARY – TIDE STATION 8571892

Datum	Elevation (ft, MLLW)	Elevation (ft, NAVD88)
Highest Observed Water Level (09/19/2003)	6.18	5.08
Mean Higher High Water (MHHW)	2.04	0.94
Mean High Water (MHW)	1.83	0.73
North American Vertical Datum (NAVD88)	1.11	0.00
Mean Tide Level (MTL)	1.02	-0.09
Mean Sea Level (MSL)	1.01	-0.09
Mean Low Water (MLW)	0.21	-0.90
Mean Lower Low Water (MLLW)	0.00	-1.11
Lowest Observed Water Level (01/17/1982)	-2.88	-3.99

For this study, coastal vulnerability area maps and resource impact maps were produced to depict potentially vulnerable areas due to sea levels at mean higher high water. In QACO, there are two high tides per day. Of those two high tides, one rises slightly higher than the other. Mean higher high water is calculated by taking the average of the higher of the two high tides each day, observed over a nineteen year period called the Tidal Datum Epoch. When compared to the topographic data used in this study to prepare mapping, the MHHW occurs at elevation 0.94 feet. Any reference to "high tide" in this document refers to MHHW.

2. VULNERABILITY ASSESSMENT METHODS

This vulnerability assessment was conducted to understand the effects of SLR and coastal flooding in QACO, identify locations of increased risk and vulnerability, and map the extents of potentially vulnerable areas within the County. This assessment provides detailed information regarding which resources will be impacted, where the impacts will occur, and provides information for resiliency planning. The methodology used in the assessment included data collection and mapping using GIS tools and geospatial data. Findings of the vulnerability assessment, including identifying impacts is discussed in Section 3.

Data Collection

To prepare an in-depth vulnerability assessment, it is necessary to have accurate geospatial datasets that include both tabular data to identify specifics of the information and spatial data that can be presented on a map. QACO maintains a robust Geographic Information System (GIS) database with many datasets of the County's resources. County staff provided many datasets and other datasets were retrieved from publically available sources. A total of 34 datasets were obtained and utilized as part of this assessment. In most cases, existing data was used for this assessment. Creating, improving, editing, and/or updating datasets was outside of the scope of this assessment, however, a few datasets were generated based on other data, information, and/or maps from the County. Appendix D lists all datasets used in this assessment and the source of the data.

SLR and Coastal Vulnerability Scenarios

The 1-foot contour interval County LiDAR data was used to develop a three-dimensional terrain model of the existing ground Countywide. Three scenarios were developed using a "bathtub" model that floods all land below a specified elevation. A map was produced showing inundation limits of each scenario. The following three scenarios were modeled and mapped to assess coastal vulnerability areas:

> **Scenario 1** – 2050 projected SLR plus MHHW: This scenario uses two feet of SLR plus MHHW of 0.94' to assess risk and potential impacts to all land Countywide below elevation 2.94'.
>
> **Scenario 2** – 2100 projected SLR plus MHHW: This scenario uses four feet of SLR plus MHHW of 0.94' to assess risk and potential impacts to all land Countywide below elevation 4.94'.
>
> **Scenario 3** – 2050 projected SLR plus MHHW plus storm surge: This scenario uses two feet of SLR plus MHHW of 0.94' plus 4.6' (FEMA storm surge) to assess risk and potential impacts to all land Countywide below elevation 7.54'. It should be noted that Scenario 3 models the temporary impact of storm surge in addition to the permanent effects of SLR.

Additional scenario combinations using different SLR projections, various tidal datum, varying storm surge depths, and/or wave heights could all be modeled, however additional scenario modeling is not a part of this scope. These three scenarios were selected as the best representative scenarios for preparation of short-term and long-term adaptation strategies. As sea level rises, storm surge and wave heights will change based on changes in bathymetric depths, potential for increased fetch lengths and wind energy input, and changes in vegetation and other structures that dissipate wave energy. For this reason, 2100 SLR projections have not been coupled with the storm surge for this assessment.

Coastal vulnerability areas have been mapped for each scenario and corresponding maps are included in Appendix A. Each of the resource datasets were intersected with the coastal vulnerability areas using ArcGIS to identify and quantify impacted resources for each scenario. The impact results of each assessed resource is presented in Section 3 of this report. Public safety and infrastructure resource impact maps are included in Appendix B and natural resource and land use impact maps are included in Appendix C.

3. SEA LEVEL RISE VULNERABILITY ASSESSMENT FINDINGS

This vulnerability assessment indicates that permanent inundation from SLR will impact a number of resources within the County. This section identifies areas vulnerable to SLR by Study Area and quantifies vulnerable resources by Public Safety and Infrastructure, as well as by Natural Resources and Land Use, both by Study Area and Countywide. Temporary impacts due to storm surge are described in Section 4 of this report.

Study Areas

Four study areas have been included for mapping purposes. The four study areas match the County's Commissioner Districts (CCD) for ease of mapping (ie., CCD 1 = Study Area 1, etc.). Figure 6 shows a map of the County's Commissioner Districts (from QACO Comprehensive Plan) and Table 7 shows potential land inundation (including wetlands) by acreage and percent of land area for the County as a whole and for each Study Area. Countywide, 2.6% and 4.1% of land is inundated by SLR Scenarios 1 and 2 respectively. In Study Areas 3 and 4 these values increase substantially, emphasizing the importance of short- and long-term resiliency planning. As shown in Table 7, the vulnerability to SLR varies throughout the County. The resources at risk in the County vary from loss of homes to utility disruption to loss of natural resources and habitat.

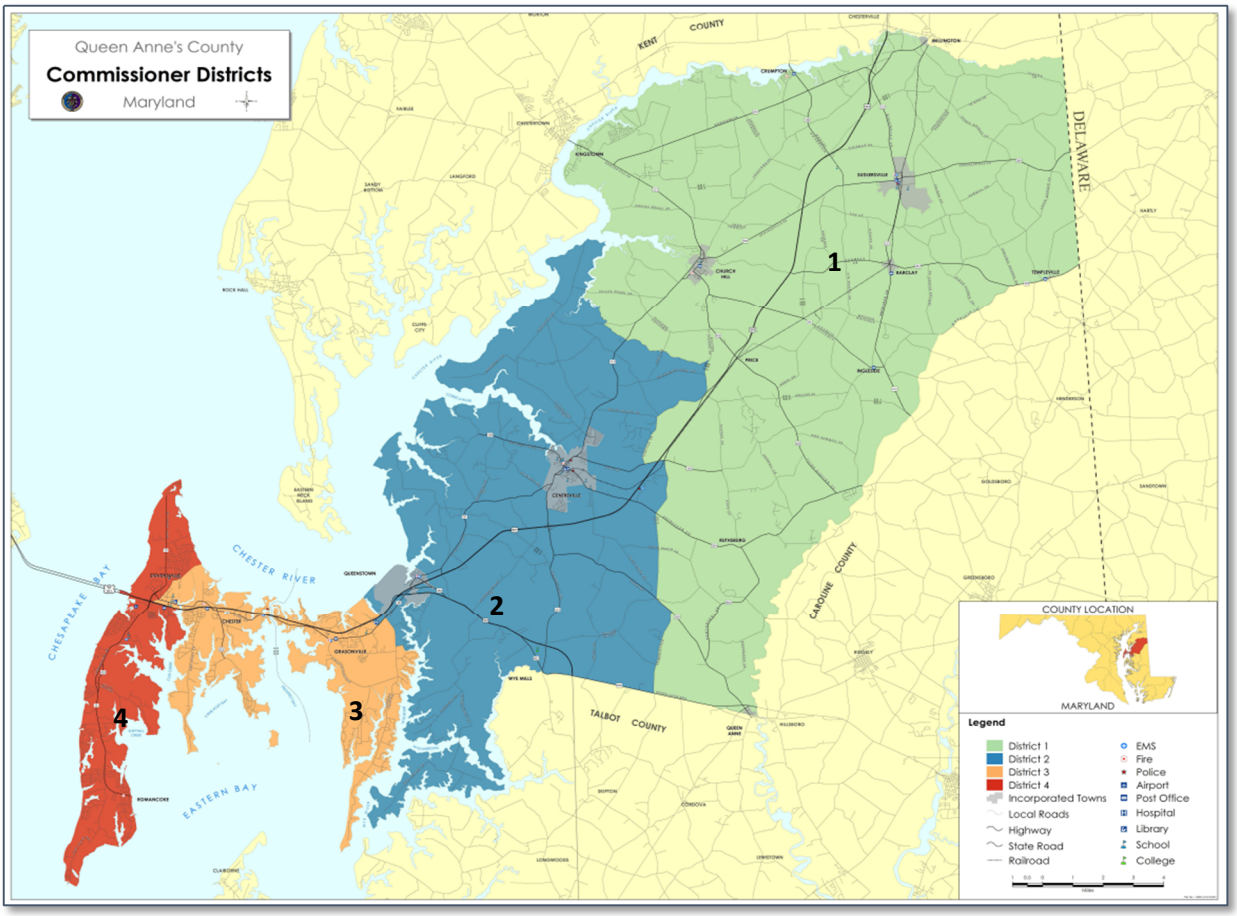

FIGURE 6: QUEEN ANNE'S COUNTY COMMISSIONER DISTRICT MAP

TABLE 7: TOTAL ACREAGE VULNERABLE TO SEA LEVEL RISE

Study Area	Total Land Area Acres	Area Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	136,345	700	1,061	0.5%	0.8%
2	72,382	1,800	2,662	2.5%	3.7%
3	15,445	2,114	3,520	13.7%	22.8%
4	13,145	1,463	2,479	11.1%	18.9%
Countywide	237,318	6,077	9,722	2.6%	4.1%

Study Area 1

Study Area 1 is located in the north and east portions of the County covering approximately 213 square miles. Although this portion of the County is generally higher in elevation, tidally-influenced coastline exists along reaches the Chester River, Island Creek, Southeast Creek, and Tuckahoe Creek. Of the total land area in Study Area 1, 0.5% and 0.8% is vulnerable to SLR of 2 feet and 4 feet respectively.

Study Area 2

Study Area 2 is located in the central portion of the County covering approximately 113 square miles. Tidally-influenced coastline exists along reaches of the Chester River, Wye River and their tributaries. Of the total land area in Study Area 2, 2.5% and 3.7% is vulnerable to SLR of 2 feet and 4 feet respectively.

Study Area 3

Study Area 3 is located generally in the western portion of the County covering approximately 24 square miles. Tidally-influenced coastline exists along reaches of the Chester River, Wye River, Eastern Bay, Prospect Bay, Crab Alley Bay, and their tributaries. Of the total land area in Study Area 3, 13.7% and 22.8% is vulnerable to SLR of 2 feet and 4 feet respectively.

Study Area 4

Study Area 4 is located in the far west portion of the County. It includes the western portion of Kent Island and covers approximately 21 square miles. Tidally-influenced coastline exists along reaches of the Chesapeake Bay, Chester River, Eastern Bay and their tributaries. Of the total land area in Study Area 4, 11.1% and 18.9% is vulnerable to SLR of 2 feet and 4 feet respectively.

Public Safety and Infrastructure

The effects of SLR and coastal flooding on infrastructure is relatively straightforward as SLR and coastal flooding result in damage or reduced usefulness of a resource. Public safety is more complex and subjective when social and health aspects are factored in to the assessment. For the purposes of this study, public safety is assumed to be relevant when public and private infrastructure resources are impacted and is not discussed herein independently.

QACO is home to nearly 50,000 people, living in approximately 17,300 households of which 84.5% are owner-occupied (Reference 1). The County's sustainable smart growth management strategy aims to direct growth to existing population centers positioned around existing towns with the intent of providing cost-effective public facilities, reducing impacts of traffic, providing employment opportunities, reducing impacts on the environment, and reducing development encroachment in the rural agricultural areas (Reference 2). Understanding the coastal vulnerability of these "planning areas" will facilitate long-term resiliency during the planning, design, and development of these areas.

Based upon available public and private infrastructure data, tables were generated in ArcGIS that described the vulnerable areas under each of the three SLR and storm surge scenarios. Specific public infrastructure resources assessed include:

- Emergency service facilities
- Evacuation routes
- Roads and bridges
- Schools
- Wastewater facilities
- Water supply
- Other utilities

Specific private infrastructure resources assessed include:

- Private residential property
- Commercial development

Other resources considered for which data was not available include boat ramps, underground pipeline utilities, contaminated sites, underground storage tanks, private septic systems, and a comprehensive list of piers. Additionally, solid waste facility data was not available. In May of 1986, QACO entered into a Memorandum of Understanding with Maryland Environmental Service (MES) to develop the Mid-Shore Regional Solid Waste (MSRSW) facilities to serve Queen Anne's, Caroline, Kent, and Talbot Counties with each hosting an operating landfill for a period of twenty years (Reference 2). The County currently oversees the operation of five County transfer stations but QACO is not scheduled to host a Mid-Shore Regional Solid Waste Facility until possibly 2030 (Reference 2).

It is important to consider that impacts to infrastructure occur at discrete locations but the overall impact may be far reaching. For example, if a bridge loses function during a storm surge event, the impacts may include losing emergency access to a large geographical area. Impacts to infrastructure are quantified based on an appropriate unit but may not convey the overall impact.

The assessed resources that contain buildings associated with a property have been divided into two distinct impact tables – one to show impacts to property and the other to show impacts to the structure itself. Note that the structure impacts are based on GIS lateral coverage and not by elevation. Structures may have finished floors elevated above the flooding elevation. Impacted properties may only affect a portion of the property that are lower in elevation but may not impact the access or use of the building. In addition, there are many vacant parcels that have impacts.

Emergency Service Facilities

This resource includes critical facilities such as emergency medical services (EMS) stations, fire stations, police stations, emergency shelters and hospitals. QACO has seven (7) EMS stations, ten (10) volunteer fire stations five (5) police stations, one (1) department headquarters, twenty-four (24) emergency shelters and five (5) medical centers. For the purposed of this report these 52 facilities were combined into a single emergency service facility resource. Please note that the majority of the emergency shelters are also schools and therefore these impacts are also tabulated in the School section.

Emergency service facility data was obtained from QACO. There are no impacts to emergency service facility buildings or properties in Study Area 1.

In Study Area 2, the following facilities are affected:

- The Wye Research and Education Center property, which is designated as a temporary emergency shelter, is impacted by Scenarios 1 and 2; however, the building itself is not impacted by either SLR scenario.
- The Agriculture Center UMD Research property, which is also designated as a temporary emergency shelter, is impacted by Scenarios 1 and 2; however, the impacts are located in a wooded section of the property. The building itself is not impacted by either SLR scenario.

In Study Area 3, the following facilities are affected:

- QACO Sherriff Kent Narrows Substation property is impacted by Scenarios 1 and 2; however, the building itself is not impacted by either SLR scenario.
- EMS Station 200 property will be impacted by Scenarios 1 and 2 and the building will be impacted by Scenario 2. In addition, the entrance to the facility and several surrounding roads are impacted.
- The Stevensville Middle School property, which is designated as a temporary emergency shelter, is impacted by Scenarios 1 and 2; however, the building itself is not impacted by either SLR scenario.
- The Bayside School and Grasonville Senior Center properties, which are designated as temporary emergency shelters, are impacted by Scenario 2; however, the buildings are not impacted by either SLR scenario.

In Study Area 4, the following facilities are affected:

- EMS Station 100 property is impacted by Scenario 2; however, the station is located on a large, County-owned parcel and the impacts are not in the proximity of the building.
- The Matapeake Elementary School and Middle School properties, which are designated as emergency shelters, are impacted by Scenario 2; however, the building itself is not impacted by either SLR scenario and the property impacts are limited to the northern periphery of the property.

Table 8 and Table 9 summarize the number and percent of emergency service facility property and buildings vulnerable to SLR using all scenarios respectively.

It is important to note that building impacts noted herein are based on lateral extents of the topography and building footprint. Finished floor elevations have not been determined as a part of this study. It is possible that while an impact is determined by lateral extents on the mapping, the usable portions of the

buildings may not be inundated by elevation. Also note that the property impacts listed in Table 8 can vary from minor impacts limited to the periphery of the property to significant impacts that limit or block access to the property buildings.

TABLE 8: EMERGENCY SERVICE FACILITY PROPERTY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios		Percent of Total Impacted[1] by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	10	0	0	0.0	0.0
2	22	2	2	9.1	9.1
3	14	3	5	21.4	35.7
4	6	0	2	0.0	33.3
Countywide	52	5	9	9.6	17.3

[1] Note that impacts may only represent a portion of the property

TABLE 9: EMERGENCY SERVICE FACILITY BUILDING IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	10	0	0	0.0	0.0
2	22	0	0	0.0	0.0
3	14	0	1	0.0	7.1
4	6	0	0	0.0	0.0
Countywide	52	0	1	0.0	1.9

Evacuation Routes

Evacuation routes have been identified throughout the County for the immediate and urgent movement of residents away from the threat or occurrence of a hazard such as an approaching weather system. The Delmarva Emergency Task Force (DETF) has determined primary and secondary emergency evacuation routes for the Delmarva Peninsula, including QACO. The identified routes within the County include Routes 8, 18, 19, 50, 213, 290, 300, 301, 302, 304, 309, 313, 405, 481, 544, and various connected local roads. The evacuation route dataset was obtained from the Maryland State Highway Administration (SHA).

Table 10 summarizes the impacted evacuation routes (both primary and secondary combined) by miles of roadway and percent of total resource.

Evacuation route impacts are primarily located at bridges adjacent to tributaries of the Chester River as well as coastal waters of the Chesapeake Bay. It is difficult to determine the actual impacts to the bridge structures and roadway as the LiDAR data does not include bridge deck elevations. A portion of the total impacts shown in

Table 10 may not be actual impacts due to the presence of high-level bridge decks. The following paragraphs describe known impacts to evacuation routes based on roadway elevations not associated with bridges.

In Study Area 2 roadway impacts occur at MD 213 in the Town of Centreville where Scenario 2 inundates a portion of the roadway near the Mill Stream Branch crossing. MD 18 is inundated by both SLR scenarios in the Town of Queenstown near Thompson Avenue.

In Study Area 3 portions of MD 18 are impacted near Gravel Run Road in Scenario 2 and much of the roadway near the Kent Narrows and Cox Creek areas to varying stages in both Scenarios 1 and 2.

In Study Area 4 significant impacts to MD 8 occur in Scenario 2 near Broad Creek, effectively cutting off transportation to the southern portion of Kent Island. Route 8 is also impacted at Carter Creek and Holligans Snooze Inlet in Scenario 2.

TABLE 10: EVACUATION ROUTE IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Miles	Miles Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	139.6	0.22	0.25	0.16	0.18
2	69.7	0.02	0.14	0.03	0.20
3	27.8	1.02	3.06	3.67	11.02
4	21.3	0.12	0.73	0.56	3.43
Countywide	258.3	1.38	4.18	0.53	1.62

Piers

Digital data was not available for pier locations, however, the County requested that two piers in particular be considered: the Matapeake Pier and the Romancoke Pier. These piers are county-owned and could be used for a boat-based evacuation during an emergency.

Pier elevations are unknown, therefore an analysis was done based on the ground elevations surrounding the pier at the shoreline. If the area around the beginning of the pier is inundated then it was assumed that the pier would be overtopped or not accessible during an event.

The Romancoke Pier has the following impacts:

- The eastern portion of the parking area is impacted by Scenario 1.
- Scenario 2 appears to overtop the pier based on the ground elevations where the pier meets the shoreline.

The Matapeake Pier has the following impacts:

- Scenario 1 appears only to impact the boat ramp.
- Scenario 2 appears to be close to overtopping the pier.

Roads and Bridges

Roads and bridges are essential infrastructure that act as the major source of transportation in QACO. Typically, in this location, roadways are lower than adjacent land so that land can drain into the streets. As such, roads typically flood before adjacent land. Even minor flooding on major roads can cause widespread transportation impacts. SLR can affect flooding frequency on roads as well as increased nuisance flooding as floodwater will evacuate low lying roadways at a higher elevation. SLR will also reduce clearances of bridges resulting in less flood flow conveyance and causing roadways to overtop due to storm events.

TIDALLY-INFLUENCED BRIDGE IN CENTREVILLE OVER MILL STREAM BRANCH.

Per the County road data, there are approximately 1080 miles of road in QACO. Approximately 270 miles of the roads in the County are maintained by SHA based on roadway data from SHA. QACO Public Works County Roads Division maintains approximately 547 miles of roads and 32 bridges.

Road centerline data was obtained from QACO. A comprehensive bridge dataset was not available. Due to the complex nature of assessing vulnerability to bridges, impacts are not quantified in this study. However, it is important to identify potential bridge-specific impacts for future transportation planning efforts.

Impacts to roadways in Study Area 1 are located primarily adjacent to the Chester River. Impacts to roadways in Study Area 2 are located primarily adjacent to the Corsica River and Reed Creek. Impacts to roadways are significant in Study Area 3, impacting several roads in the Kent Narrows, Prospect Bay, and Cox Creek areas. MD 18 through the Kent Narrows area is inundated by both SLR scenarios. Long Point Road, Narrows Pointe Drive and Swan Cove Lane are blocked by Scenario 2, cutting off access to homes off of those roads. Significant roadway impacts are also seen in the Prospect Bay area with Dominion Road and Parson Island Road being blocked by Scenario 2, cutting off access to homes located on the southern tip of the peninsula. Cox Neck Road is also blocked by Scenario 2, cutting off access to homes on the southern portion of that peninsula. Roadway impacts in Study Area 4 are also significant with several roads being blocked in the Broad Creek area and the Romancoke area by Scenario 2. In addition, MD 8 is blocked in several locations by Scenario 2, cutting off access to the homes located on southern Kent Island.

Table 11 summarizes the total road miles (including the evacuation routes) and percent of road miles vulnerable to SLR.

TABLE 11: ROADWAY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Miles	Miles Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	477.0	0.1	0.5	0.0	0.1
2	311.8	0.2	1.0	0.1	0.3
3	157.8	2.8	14.9	1.8	9.5
4	130.8	0.5	6.3	0.4	4.8
Countywide	1077.4	3.6	22.7	0.3	2.1

Schools

Schools were located using the QACO address point dataset. This data indicates 38 address points for schools. This includes multiple buildings for Chesapeake College and the Gunston Day School. For the purposes of this study this resource was assessed based on the building associated with each address point.

There are no impacts to the school buildings for either of the SLR scenarios, however there are noted impacts to four of the school properties. In Study Area 3, the Stevensville Middle School parcel will be impacted by both scenarios. The Bayside Elementary School parcel will also be impacted by Scenario 2. In Study Area 4, a small area on the northern edge of the Matapeake Elementary and Middle School property will be impacted by Scenario 2. The impacts are small and are primarily limited to wooded floodplain portions of the parcels and would likely not impact day-to-day activities. Table 12 summarizes the total number and percent of resource property that is vulnerable to SLR using all scenarios.

TABLE 12: SCHOOL PROPERTY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios		Percent of Total Impacted[1] by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	4	0	0	0	0
2	26	0	0	0	0
3	5	1	2	20	40
4	3	0	2	0	66.6
Countywide	38	1	4	2.6	10.5

[1] Note that impacts may only represent a portion of the property

Wastewater Facilities

Wastewater facilities are a critical infrastructure to maintaining quality of life and environmental quality. Infrastructure used for wastewater treatment include treatment facilities, pumping stations, and wastewater piping systems. Wastewater facilities are often located in low-lying areas to allow wastewater to drain via piping systems by gravity to the collection and treatment plants. Where flow by gravity is not possible, pump stations are used to move wastewater to treatment plants.

There are five wastewater treatment plants (WWTP) located within QACO: Kent Narrows/ Stevensville/ Grasonville (KNSG) WWTP, Queenstown WWTP, Centreville WWTP, Church Hill WWTP, and Sudlersville/ Barclay WWTP (Reference 10). Additionally, the Town of Millington has a collection/treatment system, Prospect Bay has a private system, several institutional and private facilities have private systems, and residents use individual septic tanks in Crumpton, Barclay, Queen Anne, and Templeville. The Queen Anne's Sanitary Sewer Service Areas Map in the 2010 Comprehensive Plan indicates 14 pumping stations throughout the County.

Wastewater treatment plants were located using the QACO address point dataset. The dataset indicates five Municipal facilities, plus the Town of Millington Facility, which matches the Comprehensive Plan map. Addresses were provided for 14 vacuum collection stations, 10 sewage pumping stations and seven (7) sewage lift stations that are associated with the KNSG facility. These addresses were digitized for inclusion in this analysis. Sewer piping was not available in digital format and has not been used in this assessment.

It is important to note that this simple assessment tells us whether a facility is within an area that is potentially vulnerable to SLR and/or coastal flooding based on the existing ground elevation adjacent to the treatment plants. To fully assess the impact on treatment plants, critical equipment elevations would be required. Impacts generally occur on low-lying portions of the sewage treatment plant parcels. There are no direct building impacts in SLR Scenarios 1 or 2. Table 13 summarizes the number and percent of the resource vulnerable to SLR using all scenarios. Note that parcel impacts could potentially impact the functionality and/or operations of the sewage treatment plant or other assets. The parcel impacts should be considered in more detail with consideration given to outfall elevations in order to determine the severity of the impacts.

TABLE 13: WASTEWATER TREATMENT PLANT PROPERTY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios		Percent of Total Impacted[1] by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	3	1	1	33	33
2	2	2	2	100	100
3	0	0	0	0	0
4	1	0	1	0	100
Countywide	5	3	4	60	80

[1] Note that impacts may only represent a portion of the property

TABLE 14: SEWER STATION IMPACTS DUE TO SEA LEVEL RISE

Sewer Station	Total Number	Number Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2
Vacuum Stations	14	2	11
Pumping Stations	10	0	2
Lift Stations	7	0	0

Water Supply

Water supply in QACO primarily is derived from groundwater extraction wells, stored in water towers, and distributed through pressure piping systems. Wells in QACO extract water from the Aquia aquifer, Magothy aquifer, and Lower Patapsco aquifer (Reference 10). MDE prohibits additional withdrawal from the Aquia on Kent Island due to saltwater intrusion (Reference 10). Saltwater intrusion is anticipated to increase as sea level increases.

The County has 11 water treatment plants and there are an additional four (4) town systems located throughout the County (Reference 10). Additional private and/or institutional systems are located within the County, along with individual private wells owned and maintained by County residents.

The County also has one (1) well house, two (2) water booster pump stations, nine (9) water towers and six (6) in-ground storage tanks. One in-ground storage tank is located at each of the following water treatment plants: Bridge Pointe, Grasonville, Stevensville and Thomson Creek. Oyster Cove has two in-ground storage tanks.

There are several impacts to water treatment plant properties, however no water treatment plant buildings are impacted under SLR Scenarios 1 or 2. The property of Oyster Cove is impacted by both SLR scenarios and the property of Thomson Creek is impacted by Scenario 2. The property of Riverside, located in Study Area 3, is also impacted by Scenario 2.

The well house, which is inactive, along with the water booster pump stations are not impacted by any of the SLR scenarios. The water towers are not impacted by either scenario. Since Oyster Cove water treatment plant is impacted by both SLR scenarios it is possible that the underground water storage tanks at this location could also be impacted. Similarly, since Thompson Creek water treatment plant property is impacted by Scenario 2, the in-ground storage tank at this location could potentially be impacted. Depending on the original design and construction of the storage tanks, the impacts could be minor to significant.

Table 15 below summarizes the number and percent of water treatment plant properties that are vulnerable to SLR using both scenarios.

TABLE 15: WATER TREATMENT PLANT PROPERTY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios		Percent of Total Impacted[1] by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	0	0	0	0	0
2	0	0	0	0	0
3	2	1	2	50.0	100.0
4	9	0	1	0	11.1
Countywide	11	1	3	9.1	27.3

[1] Note that impacts may only represent a portion of the property

Other Utilities

Two utility datasets were received from the County's GIS database: Utility Points and Utility Lines. The datasets contain some duplicate layers and both contain unique layers. Layers contained in both datasets are noted below. The following are layers within the datasets that were included in the SLR impact analysis:

- Fire hydrants (both datasets)
- Dams
- Water towers (included under Water Supply Impacts)
- Catch basins (both datasets)
- Culverts
- Concrete drains (typically driveway culverts)
- Storm drain
- Drop inlets (both datasets)
- Manholes (both datasets)
- Pipes (both datasets)
- Stormwater Ponds
- Sub-stations
- Transformers
- Lamp posts
- Light poles
- Traffic Signal Pole
- Utility poles
- Utility boxes

The following are layers within the Utility datasets that were not included in the SLR impact analysis:

- Channel markers
- Concrete
- Guide wire
- Metal covers (both datasets)
- Signs (both datasets)
- Towers
- Traffic signals (both datasets)
- Valves (both datasets)

Data gaps include electrical generation and distribution, cable television lines, and telephone lines. Telecommunication towers were also downloaded from the QACO GIS website and are also assessed with the utility layers. Impacts are determined using the available data and each point or line are counted based on the datasets. Layers in multiple datasets are only counted once using the line dataset. Channel markers are not included in the impact summary due to their existing location in waterways. Elevation data is not included with the channel marker dataset but could be important planning information in the future as the sea level increases, potentially inundating the markers. Table 22 summarizes the number and percent of resource vulnerable to SLR using both scenarios. Note, some utilities are located in two study areas and therefore some impacts are counted twice.

TABLE 16: UTILITY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	13,846	24	56	0.2	0.4
2	10,653	55	131	0.5	1.2
3	10,062	611	1838	6.1	18.3
4	9,439	273	950	2.9	10.1
Countywide	43,943	988	2998	2.2	6.7

It is important to note that the impacts shown are based on lateral extents of the utilities and SLR inundation scenarios. Vertical elevations have not been evaluated which could lead to additional impacts. For example, storm drain systems are located underground and SLR can cause a backwater effect into the storm drain, decreasing the conveyance capacity during frequent storm events. It is also important to note that although electrical lines have not been mapped by the County, inundation of light poles or other utilities can potentially lead to power outages.

Table 17 lists the number of utilities impacted by each scenario Countywide by utility type.

TABLE 17: IMPACTS BY UTILITY DUE TO SEA LEVEL RISE

Utility	Total Number	Number Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2
Fire Hydrants	393	8	30
Dams	19	0	0
Catch Basins	652	18	56
Culverts	784	76	142
Concrete Drains	17,710	430	1,337
Storm Drains	345	8	17
Drop Inlets	524	30	96
Manholes	1,112	12	71
Pipes	117	4	11
Stormwater Ponds	415	27	60
Sub-stations	8	0	0
Transformers	8	0	0
Lamp Posts	1269	18	132
Light Poles	2625	76	214
Traffic Signal Poles	21	0	0
Utility Poles	18,303	277	807
Utility Boxes	378	2	22
Telecommunication Towers	47	2	3

Private Residential Property

This resource includes privately-owned property associated with QACO Address Point and Parcel datasets.

Table 18 summarizes the number and percent of private residential properties vulnerable to SLR and Table 19 summarizes the number and percent of private residential buildings vulnerable to SLR under both scenarios. Note that the buildings dataset includes detached garages, sheds, and other out-buildings and multiple buildings may pertain to one parcel. Impacts to detached garages or other out buildings were

not considered to be residential impacts, only building that intersected address points with a residential classification were considered for residential building impacts. Additionally, the impacts shown in Table 19 are based on lateral extents of the buildings and SLR and storm surge inundation scenarios to show vulnerability. Elevations of the first floor of the buildings are not available and have not been evaluated. Buildings built on piers, or otherwise elevated, may not be impacted by the SLR and coastal storm surge scenarios. Note that the impacts shown in Table 18 range from significant property impacts that decrease functionality to minor impacts of low-lying areas that would not decrease functionality.

TABLE 18: PRIVATE RESIDENTIAL PROPERTY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios		Percent of Total Impacted[1] by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	5,082	407	438	8.0	8.6
2	4,304	398	454	9.2	10.5
3	5,688	1,509	1,839	25.2	30.7
4	45,942	1,412	2,001	23.8	33.7
Countywide	21,316	1,412	4,732	16.3	22.2

[1] Note that impacts may only represent a portion of the property

TABLE 19: PRIVATE RESIDENTIAL BUILDING IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	5,013	5	44	0.1	0.9
2	4,422	1	35	0.0	0.8
3	5,459	41	517	0.8	9.5
4	4,659	17	394	0.4	8.5
Countywide	19,553	64	990	0.3	5.1

Commercial Development

This resource includes commercially-owned property associated with QACO Address Point and Parcel datasets. Table 20 summarizes the number and percent of commercial properties vulnerable to SLR and Table 21 summarizes the number and percent of commercial buildings vulnerable to SLR using both scenarios. The impacts shown in Table 21 are based on lateral extents of the buildings and SLR and storm surge inundation scenarios to show vulnerability. Elevations of the first floor of the buildings are not

available and have not been evaluated. Buildings built on piers, or otherwise elevated, may not be impacted by the SLR and coastal storm surge scenarios.

TABLE 20: COMMERCIAL PROPERTY IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios		Percent of Total Impacted[1] by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	378	13	14	3.4	3.7
2	497	39	48	7.8	9.7
3	790	245	350	31.0	44.3
4	261	54	74	20.7	28.4
Countywide	1,926	351	486	18.2	25.2

[1] Note that impacts may only represent a portion of the property

TABLE 21: COMMERCIAL BUILDING IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	198	2	5	1.0	2.5
2	474	2	4	0.4	0.8
3	534	32	82	6.0	15.4
4	436	0	5	0.0	1.1
Countywide	1,642	36	96	2.2	5.8

Natural Resources and Land Use

Based upon available natural resource data, tables were generated in ArcGIS that described the vulnerable areas under each of the two SLR scenarios. Specific natural resources assessed include:

- Wetlands
- Critical areas
- Agriculture

This vulnerability assessment relied on existing data and information to screen resources at risk to SLR and coastal hazards. In some cases, data and information that would have provided useful planning information was not readily available. For example, GIS datasets were not available to assess and quantify

the potential for loss of beaches and dunes. Additionally, salinity changes in freshwater and groundwater are difficult to assess given the unknowns about the complex hydrologic and hydrogeological interactions involved. Although the assessment of these resources is not in the scope of this analysis, it is important for the County to understand the potential impacts of saltwater intrusion into surface and ground water.

Wetlands

Wetlands provide habitat, food, and breeding grounds for many species of plants and animals. They contain unique plant and animal communities and are known for their high species diversity. They also act to attenuate floodwaters, buffer storm impacts, and act as filters by trapping sediment and removing contaminants. Tidal marshes, in particular, are an important buffer to protect against shoreline erosion and reduce wave energy during storm events. They provide vital food and habitat for clams, crabs, and juvenile fish, as well as offering shelter and nesting sites for several species of migratory waterfowl.

Tidal and non-tidal wetland impacts are combined in this analysis to give a total wetland impact using two wetland datasets. Wetland data was obtained from the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) dataset as well as the DNR wetland dataset, which are DNR identified wetlands that supplement the NWI dataset.

Impacts generally occur along the Chesapeake Bay in Study Areas 3 and 4 with over 50 percent of the wetlands in these study areas impacted by acreage in SLR Scenarios 1 and 2. Table 22 summarizes the acreage and percent of the NWI wetlands and Table 23 summarizes DNR wetlands vulnerable to SLR using Scenarios 1 and 2.

It is important to note that the wetland data is not easily sortable to distinguish between freshwater and saltwater wetlands. Effects of saltwater inundation of freshwater wetlands have not been evaluated. Permanent saltwater intrusion of freshwater wetlands resulting from Scenarios 1 and 2 could cause significant alteration of habitat.

TABLE 22: NWI WETLAND IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	17,766	506	629	2.8	3.5
2	6,383	1,054	1,253	16.5	19.6
3	2,067	1,281	1,455	62.0	70.4
4	1,121	765	873	68.3	77.9
Countywide	27,337	3,606	4,211	13.2	15.4

TABLE 23: DNR WETLAND IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	35,496	1,073	1,457	3.0	4.1
2	13,483	2,492	3,004	18.5	22.3
3	3,468	1,760	2,085	50.8	60.1
4	3,000	1,469	1,805	49.0	60.2
Countywide	55,447	6,794	8,351	12.3	15.1

Critical Areas

The Critical Area is a resource protection program that governs land use within 1,000 feet of high tide or tidal wetlands. Additionally, Habitat Protection Areas (HPA) include a minimum 100-foot buffer from tidal wetlands and waterways, historic waterfowl staging and concentration areas, colonial water bird nesting sites, threatened and endangered species and species in need of conservation, anadromous fish spawning areas, existing riparian buffers, forest areas used by forest interior dwelling birds, non-tidal wetlands, National Heritage Areas, and other areas of local significance.

Three categories of land development within the Critical Area were based on existing development and public services available as of December 1, 1985. These include Intense Development Areas (IDA), Limited Development Areas (LDA), and Resource Conservation Areas (RCA). For the purposes of this study, impacts to each of these land development categories are summed to include one value of Critical Area impacts.

TABLE 24: CRITICAL AREA IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	608	60	84	7.6	10.6
2	1,608	153	229	9.5	14.2
3	1,030	180	308	17.5	29.9
4	789	115	201	14.6	25.5
Countywide	4,034	507	822	12.6	20.4

Critical Area data was received from the Eastern Shore Regional GIS Cooperative (ESRGC) at Salisbury University with permission from DNR. The dataset is currently in draft status as DNR is currently updating the Critical Area maps to reflect updated shoreline and wetland conditions. Impacts are highest in Study Area 3, however, there are significant impacts in all four study areas. The impacts are primarily along the Chesapeake Bay shoreline. Table 24 summarizes the acreage and percent of the resource vulnerable to SLR for each scenario.

Agriculture

Agriculture plays an important role in QACO's economic strategy. The County's Comprehensive Plan's primary focus is to preserve and maintain the County as a quintessential rural community with agriculture as a viable industry, ranking first in the State of Maryland for the production of corn, soybeans, and wheat for grain (Reference 2).

Agricultural land was identified using the Parcel dataset provided by QACO. The percent of total agricultural land impacted in Study Areas 3 and 4 ranges from 11 to 22% in SLR Scenarios 1 and 2. Table 25 summarizes the acreage and percent of agricultural land resource vulnerable to SLR for both SLR scenarios.

TABLE 25: AGRICULTURAL LAND IMPACTS DUE TO SEA LEVEL RISE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios		Percent of Total Impacted by Coastal Vulnerability Scenarios	
		Scenario 1	Scenario 2	Scenario 1	Scenario 2
1	114,795	455	700	0.4	0.6
2	55,053	1,117	1,712	2.0	3.1
3	5,470	623	1,057	11.4	19.3
4	5,721	803	1,269	14.0	22.2
Countywide	181,040	2,998	4,739	1.7	2.6

4. STORM SURGE IMPACTS

As sea levels continue to rise, storm surge impacts will also increase. While these impacts can be temporary, the extent of coastal flooding due to storm surge will increase due to elevated base water surface levels and loss of wetland buffer systems at or near mean sea level. Impacts to resources such as roads or utilities will be temporary in nature and the resource is likely to recover following the storm. However, impacts to other resources such as residential/commercial buildings or agricultural lands can have a more severe effect if flooded or affected by saltwater intrusion. Table 26 shows potential temporary land inundation by acreage and percent of land area for the County as a whole and for each Study Area. The resources at risk vary from temporary roadway closures to potential loss of homes from coastal storm flooding.

TABLE 26: TOTAL ACREAGE VULNERABLE TO STORM SURGE

Study Area	Total Land Area Acres	Area Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	136,345	1,488	1.1%
2	72,382	4,061	5.6%
3	15,445	5,287	34.2%
4	13,145	4,200	31.9%
Countywide	237,318	15,036	6.3%

Of the total land area Countywide, 1.1%, 5.6%, 34.2%, and 31.9% of Study Areas 1, 2, 3, and 4 is vulnerable to 2 feet of SLR plus storm surge respectively. Impacts due to storm surge coastal flooding can be of a temporary nature, affecting resources while the water levels are elevated as a result of atmospheric pressure changes and wind associated with a coastal storm.

Public Safety and Infrastructure

The following tables and discussions presents quantitative and qualitative results of Scenario 3 (impacts due to SLR plus storm surge) for each of the public safety and infrastructure resources discussed in Section 3 of this report.

Emergency Service Facilities

The following facilities are temporarily affected by coastal flooding due to storm surge:

- The Wye Research and Education Center property and building are temporarily impacted by Scenario 3.

- The Agriculture Center UMD Research property, which is also designated as a temporary emergency shelter, is temporarily impacted by Scenario 3; however, the impacts are located in a wooded section of the property. The building itself is not impacted.
- The Chesapeake Community College, Centreville Elementary School and the Kennard Elementary School properties are all temporarily impacted by Scenario 3. All three schools are designated as temporary emergency shelters. There are no building impacts.
- The Centreville Police Department property will be temporarily impacted by Scenario 3, however, the building and entrance roads will not be affected.
- QACO Sherriff Kent Narrows Substation property and building is temporarily impacted by Scenario 3. In addition, several roads in the immediate area are impacted.
- EMS Station 200 property and building will be temporarily impacted by Scenario 3. In addition, the entrance to the facility and several surrounding roads are impacted.
- Grasonville EMS property will be temporarily impacted by Scenario 3. Inundation from Scenario 3 does approach but does not inundate the building, however, inundation does block some roads in the area, possibly reducing response times.
- Both the building and property of the Grasonville Fire Department are temporarily impacted by Scenario 3. In addition, the entrance to the facility and several of the surrounding roads are impacted.
- The Stevensville Middle School property, which is designated as a temporary emergency shelter, is temporarily impacted by Scenario 3.
- The Bayside School and Grasonville Senior Center properties, which are designated as temporary emergency shelters, are temporarily impacted by Scenario 3. The building itself is not impacted.
- The Kent Island Elementary School property, which is designated as an emergency shelter, is temporarily impacted by Scenario 3. The building itself is not impacted.
- EMS Station 100 property is temporarily impacted by Scenario 3, however, the station is located on a large, County-owned parcel and the impact is not in the proximity of the EMS station.
- The property and building of the United Communities VFD are impacted by Scenario 3. In addition, the entrance to the fire house and several of the surrounding roads are impacted by Scenario 3.
- The Matapeake Elementary School and Middle School properties, which are designated as emergency shelters, are impacted by Scenario 3. The buildings are not impacted.
- The Kent Island High School property, which is designated as an emergency shelter, is impacted by Scenario 3. The building is not impacted.

Table 27 and Table 28 summarize the number and percent of emergency service facility properties and buildings vulnerable to temporary impacts due to storm surge coastal flooding.

It is important to note that building impacts noted herein are based on lateral extents of the topography and building footprint. Finished floor elevations have not been determined as a part of this study. It is possible that while an impact is determined by lateral extents on the mapping, the usable portions of the buildings may not be inundated by elevation. In addition property impacts can vary from minor impacts to the property periphery to significant impacts that affect functionality of the property and associated structures.

TABLE 27: EMERGENCY SERVICE FACILITY PROPERTY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios	Percent of Total Impacted[1] by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	10	0	0.0
2	22	6	27.3
3	14	8	57.1
4	6	4	66.7
Countywide	52	18	34.6

[1] Note that impacts may only represent a portion of the property

TABLE 28: EMERGENCY SERVICE FACILITY BUILDING IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	10	0	0.0
2	22	1	4.5
3	14	3	21.4
4	6	1	16.7
Countywide	52	5	9.6

Evacuation Routes

Table 29 summarizes the impacted evacuation routes (both primary and secondary combined) by miles of roadway and percent of total resource for Scenario 3 (storm surge).

In Study Area 1 a portion of roadway along MD 290 is inundated in Scenario 3 in the northern portion of the Town of Crumpton just south of the bridge crossing the Chester River. Additionally, the bridge approach of MD 213 crossing the Chester River in the Town of Kingstown is inundated in Scenario 3.

In Study Area 2 roadway impacts occur at MD 213 in the Town of Centreville where Scenario 3 inundates a portion of the roadway near the Mill Stream Branch crossing. MD 18 is also temporarily inundated by Scenario 3 in the Town of Queenstown near Thompson Avenue.

In Study Area 3 portions of MD 18 are temporarily impacted near Gravel Run Road, Chester River Beach Road, and much of the roadway near the Kent Narrows and Cox Creek areas in Scenario 3.

In Study Area 4 portions of MD 18 are impacted in Scenario 3 near Love Point. Significant impacts to MD 8 occur near Broad Creek, temporarily cutting off transportation to the southern portion of Kent Island. Route 8 is also impacted at Warehouse Creek, Carter Creek, Chews Creek, and Holligans Snooze Inlet under the storm surge scenario.

TABLE 29: TEMPORARY EVACUATION ROUTE IMPACTS DUE TO STORM SURGE

Study Area	Total Miles	Miles Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	139.6	0.48	0.34
2	69.7	0.35	0.50
3	27.8	5.25	18.90
4	21.3	1.97	9.25
Countywide	258.3	8.05	3.12

Piers

Digital data was not available for pier locations, however, the County requested that two piers in particular be considered: the Matapeake Pier and the Romancoke Pier. These piers are county-owned and could be used for a boat-based evacuation during an emergency.

Pier elevations are unknown, therefore an analysis was done based on the ground elevations surrounding the pier at the shoreline. If the area around the beginning of the pier is inundated then it was assumed that the pier would be overtopped or not accessible during an event.

The Romancoke Pier appears to be temporarily inundated during Scenario 3. Romancoke Road is also temporarily inundated for the 300 feet leading to the pier. The Matapeake Pier and the 50 feet of access leading to the pier is temporarily inundated in Scenario 3.

Roads and Bridges

During coastal storm surges, low lying roads will be vulnerable to temporary flooding that may temporarily cutoff emergency service access.

Temporary impacts to roadways in Study Area 1 are located primarily adjacent to the Chester River. Temporary impacts to roadways in Study Area 2 are located primarily adjacent to the Corsica River and Reed Creek. Temporary impacts to roadways are significant in Study Area 3, impacting several roads in the Kent Narrows, Prospect Bay, and Cox Creek areas. MD 18 through the Kent Narrows area is temporarily inundated by Scenario 3. Long Point Road, Narrows Pointe Drive and Swan Cove Lane are

blocked by Scenario 3, cutting off access to homes off of those roads. Significant temporary roadway impacts are also seen in the Prospect Bay area with Dominion Road and Parson Island Road being blocked by Scenario 3, temporarily cutting off access to homes located on the southern tip of the peninsula. Cox Neck Road is also blocked by Scenario 3, temporarily cutting off access to homes on the southern portion of that peninsula. Roadway impacts in Study Area 4 are also significant with several roads being temporarily blocked in the Broad Creek area and the Romancoke area by Scenario 3. In addition, MD 8 is blocked in several locations by Scenario 3, temporarily cutting off access to the homes located on southern Kent Island. Table 30 summarizes the total road miles (including the evacuation routes) and percent of road miles vulnerable to coastal storm surge.

TABLE 30: TEMPORARY ROADWAY IMPACTS DUE TO STORM SURGE

Study Area	Total Miles	Miles Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	477.0	2.5	0.5
2	311.8	3.7	1.2
3	157.8	33.8	21.4
4	130.8	22.0	16.8
Countywide	1077.4	62.0	5.8

Schools

There are no impacts to the school buildings during the storm surge scenario, however there are noted impacts to nine of the school properties. In Study Area 2, three school properties are impacted by Scenario 3: Chesapeake Community College, Centreville Elementary School, and Kennard Elementary School. In Study Area 3, the Stevensville Middle School, Bayside Elementary School, and a small portion of the Kent Island Elementary School parcel are temporarily impacted by Scenario 3. In Study Area 4, a small area on the northern edge of the Matapeake Elementary and Middle School property, as well as the wooded portion of the Kent Island High School parcel will also be temporarily impacted by Scenario 3. The impacts are small and are primarily limited to wooded floodplain portions of the parcels and would likely not impact day-to-day activities. Table 31 summarizes the total number and percent of resource property that is vulnerable to SLR using all scenarios.

TABLE 31: TEMPORARY SCHOOL PROPERTY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios	Percent of Total Impacted[1] by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	4	0	0
2	26	3	11.5
3	5	3	60
4	3	3	100
Countywide	38	9	23.7

[1] Note that impacts may only represent a portion of the property

Wastewater Facilities

Temporary impacts to wastewater facilities generally occur on low-lying portions of the sewage treatment plant parcels. The only building impact is for an out building associated with the KNSG Sewage Treatment Plant during Scenario 3. The building appears to be used as a garage. Table 32 summarizes the number and percent of the resource vulnerable to SLR using Scenario 3. Note that parcel impacts could potentially impact the functionality and/or operations of the sewage treatment plant or other assets. The parcel impacts should be considered in more detail with consideration given to outfall elevations in order to determine the severity of the impacts.

TABLE 32: WASTEWATER TREATMENT PLANT PROPERTY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios	Percent of Total Impacted[1] by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	3	1	33
2	2	2	100
3	0	0	0
4	1	1	100
Countywide	5	4	80

[1] Note that impacts may only represent a portion of the property

TABLE 33: SEWER STATION IMPACTS DUE TO STORM SURGE

Sewer Station	Total Number	Number Impacted by Coastal Vulnerability Scenarios	
		Scenario 3	
Vacuum Stations	14	12	
Pumping Stations	10	4	
Lift Stations	7	2	

Water Supply

Saltwater intrusion is anticipated to increase as sea level increases and coastal storm surge flooding becomes more prevalent which may negatively impact water supply to portions of the County. There are three temporary impacts to water treatment plant properties, as well as two (2) water treatment plant buildings that are impacted. Oyster Cove, located in Study Area 3, and Thompson Creek, located in Study Area 4, both have building impacts from Scenario 3. The properties of Oyster Cove, Thomson Creek, and Riverside are temporarily impacted by Scenario 3.

Since Oyster Cove and Thompson Creek water treatment plants are impacted by Scenario 3 there is potential that the underground water storage tanks at these location may also be impacted during coastal storm surges due to saltwater intrusion. Depending on the original design and construction of the storage tanks, the impacts may be minor to significant.

Table 34 below summarizes the number and percent of water treatment plant properties that are vulnerable to storm surge.

TABLE 34: WATER TREATMENT PLANT PROPERTY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios	Percent of Total Impacted[1] by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	0	0	0
2	0	0	0
3	2	2	100.0
4	9	1	11.1
Countywide	11	3	27.3

[1] Note that impacts may only represent a portion of the property

Other Utilities

Table 35 summarizes the number and percent of resource vulnerable to SLR using all scenarios. Note, some utilities are located in two study areas and therefore some impacts are counted twice.

TABLE 35: UTILITY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	13,846	106	0.8
2	10,653	279	2.6
3	10,062	3403	33.8
4	9,439	2,415	25.6
Countywide	43,943	6225	13.9

It is important to note that the impacts shown are based on lateral extents of the utilities and storm surge inundation scenarios. Vertical elevations have not been evaluated which could lead to additional impacts. For example, storm drain systems are located underground and SLR can cause a backwater effect into the storm drain, temporarily decreasing the conveyance capacity during storm surge events. Table 36 lists the number of utilities impacted by Scenario 3 Countywide by utility type.

TABLE 36: IMPACTS BY UTILITY DUE TO STORM SURGE

Utility	Total Number	Number Impacted by Coastal Vulnerability Scenarios
		Scenario 3
Fire Hydrants	393	68
Dams	19	2
Catch Basins	652	113
Culverts	784	272
Concrete Drains	17,710	2,902
Storm Drains	345	51
Drop Inlets	524	143
Manholes	1,112	173

Utility	Total Number	Number Impacted by Coastal Vulnerability Scenarios
		Scenario 3
Pipes	117	28
Stormwater Ponds	415	90
Sub-stations	8	0
Transformers	8	0
Lamp Posts	1269	304
Light Poles	2625	423
Traffic Signal Poles	21	0
Utility Poles	18,303	1,589
Utility Boxes	378	63
Telecommunication Towers	47	4

Private Residential Property

Table 37 summarizes the number and percent of private residential properties vulnerable to storm surge and Table 38 summarizes the number and percent of private residential buildings vulnerable to storm surge using Scenario 3. While the inundation associated with Scenario 3 is temporary, it can cause significant damage and have longer lasting impacts, especially to buildings. Note that the impacts shown in Table 38 are based on lateral extents of the buildings and storm surge inundation scenarios to show vulnerability. Elevations of the first floor of the buildings are not available and have not been evaluated. Buildings built on piers, or otherwise elevated, may not be impacted by the coastal storm surge scenario. In addition, the impacts shown in Table 37 can range from minor impacts of the property periphery to significant impacts that cut off access to the building.

TABLE 37: PRIVATE RESIDENTIAL PROPERTY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios	Percent of Total Impacted[1] by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	5,082	516	10.2
2	4,304	509	11.8
3	5,688	2,654	44.3
4	45,942	2,859	48.1
Countywide	21,316	6,538	30.7

[1] Note that impacts may only represent a portion of the property

TABLE 38: PRIVATE RESIDENTIAL BUILDING IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	5,013	117	2.3
2	4,422	79	1.8
3	5,459	1,448	26.5
4	4,659	1,141	24.5
Countywide	19,553	2,785	14.2

Commercial Development

Table 39 summarizes the number and percent of commercial properties vulnerable to storm surge and Table 40 summarizes the number and percent of commercial buildings vulnerable to storm surge using Scenario 3. The impacts shown in Table 40 are based on lateral extents of the buildings and storm surge inundation scenarios to show vulnerability. Elevations of the first floor of the buildings are not available and have not been evaluated. Buildings built on piers, or otherwise elevated, may not be impacted by the coastal storm surge scenarios.

TABLE 39: COMMERCIAL PROPERTY IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted[1] by Coastal Vulnerability Scenarios	Percent of Total Impacted[1] by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	378	22	5.8
2	497	68	13.7
3	790	494	62.5
4	261	90	34.5
Countywide	1,926	674	35.0

[1] Note that impacts may only represent a portion of the property

TABLE 40: COMMERCIAL BUILDING IMPACTS DUE TO STORM SURGE

Study Area	Total Number	Number Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	198	8	4.0
2	474	13	2.7
3	534	138	25.8
4	436	33	7.6
Countywide	1,642	192	11.7

Natural Resources and Land Use

The following tables and discussions presents quantitative and qualitative results of Scenario 3 (impacts due to SLR plus storm surge) for each of the natural resources and land uses discussed in Section 3 of this report.

Wetlands

Storm surge can have temporary and/or long-lasting impacts to wetlands. The effects of saltwater inundation of freshwater wetlands have not been evaluated. Prolonged temporary inundation of freshwater wetlands in Scenario 3 could cause significant alteration of habitat. However, temporary saltwater inundation of saltwater wetlands naturally occurs and can replenish saltwater wetland systems. It should be noted that for the purposes of this study, impacts presented herein solely represent wetland areas inundated by coastal storm surge flooding. Impacts to wetlands due to storm surge generally occur

along the Chesapeake Bay in Study Areas 3 and 4 with over 75 percent of the wetlands in these study areas impacted by acreage during Scenario 3. Table 41 summarizes the acreage and percent of the NWI wetlands and Table 42 summarizes DNR wetlands vulnerable to SLR using Scenario 3.

TABLE 41: NWI WETLAND IMPACTS DUE TO STORM SURGE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	17,766	795	4.5
2	6,383	1,452	22.7
3	2,067	1,570	76.0
4	1,121	963	85.9
Countywide	27,337	4,780	17.5

TABLE 42: DNR WETLAND IMPACTS DUE TO STORM SURGE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	35,496	1,746	4.9
2	13,483	3,491	25.9
3	3,468	2,316	66.8
4	3,000	2,048	68.3
Countywide	55,447	9,601	17.3

Critical Areas

Critical area impacts are highest in Study Area 3, however, there are significant impacts in all four study areas. The impacts are primarily along the Chesapeake Bay shoreline. Table 43 summarizes the acreage and percent of the resource vulnerable to coastal storm surge.

TABLE 43: CRITICAL AREA IMPACTS DUE TO STORM SURGE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	608	116	14.7
2	1,608	348	21.7
3	1,030	461	44.8
4	789	331	42.0
Countywide	4,034	1,56	31.1

Agriculture

Agricultural land can be impacted by SLR and coastal hazards in two ways: inundation and saltwater intrusion. Scenario 3, although temporary flooding, could result in damage to crops through saltwater intrusion. Table 44 summarizes the acreage and percent of agricultural land resource vulnerable to coastal storm surge Scenario 3.

TABLE 44: AGRICULTURAL LAND IMPACTS DUE TO STORM SURGE

Study Area	Total Acres	Acres Impacted by Coastal Vulnerability Scenarios	Percent of Total Impacted by Coastal Vulnerability Scenarios
		Scenario 3	Scenario 3
1	114,795	930	0.8
2	55,053	2,656	4.8
3	5,470	1,661	30.4
4	5,721	2,011	35.1
Countywide	181,040	7,258	4.0

5. TARGETED AREAS OF CONCERN

This section discusses resources impacted by SLR and coastal storm scenarios by study areas. Key issues of concern are summarized and areas for targeted action are identified. Three primary factors were considered in identifying and targeting areas of concern:

1. Public Health and Safety – Greater weight is given to resources that, if impacted, would pose a threat to public health and safety, either in the short- or long-term.
2. Geographic Impact – Impacts that could potentially impact a wide-ranging geographic scope are considered a bigger concern versus smaller, localized impacts
3. Functionality – Greater weight is given to resources that would lose function if impacted. Additionally, if the impact is a temporary impact due to storm surge flooding (Scenario 3) the long-term effects on the resources are evaluated.

While Sections 3 and 4 of this report quantify impacts, providing a qualitative description of the full impact is more difficult and is beyond the scope of this report. For example, if a water treatment plant is affected, the influence of that impact will extend beyond the treatment plant itself, affecting all of its end users. Additionally, other water treatment plants within the County may be relied on more heavily to supply clean water to other portions of the County.

Each resource evaluated as part of this study is ranked as either a high concern, moderate concern, or low concern. It is noted that this assessment is somewhat subjective in nature and the data from Section 3 and the maps in Appendices A, B, and C have been used to make a reasonable assessment of concern for each resource based on the criteria set forth in Table 45. A ranking of moderate or low concern does not mean that a resource is not important or that the impacts from SLR and coastal hazards will not be felt.

TABLE 45: RESOURCE CONCERN CRITERIA AND TARGETED ACTION

Concern	Public Health and Safety		Geographic Impact		Functionality	Targeted Action
High	Threatened	and/or	Large regional area	and/or	Resource no longer functions	Develop adaptation/ resiliency strategies
Moderate	Possible	and/or	Small regional area	and/or	Some resource failure of intended use or temporary loss of function	Evaluate further and develop adaptation strategies if necessary
Low	Unlikely	and/or	Localized or isolated	and/or	Resource functions with modifications or minor impact	Monitor and/or re-assess in future years

High Concern Resources

A high concern resource is generally a resource when public health and safety is threatened by temporary or long-term inundation, where geographic impacts extend to a large regional area, and/or when inundation would cause the resource to no longer function. Based on the results of the vulnerability assessment, the following resources are of the highest concern.

Emergency Service Facilities: Of the 52 emergency service facilities assessed, five (5) facility properties lie within an area that could be partially inundated by SLR by 2050, nine (9) facility properties could be partially inundated by 2100, and 18 facility properties could be at least partially inundated during a storm surge and SLR by 2050. None of the buildings would be inundated by SLR by 2050, one (1) building could be partially inundated by SLR by 2100, and five (5) buildings could be partially inundated by storm surge and SLR by 2050. Two (2) of the properties impacted by Scenarios 1 and 2 and six (6) of the properties impacted by Scenario 3 occur in Study Area 2. All other impacts to property and buildings occur in Study Areas 3 and 4. While it is understood that some or all of these facilities may have a mutual aid backup plan in place, with the ability to move equipment to higher ground or secondary stations, because of public safety concerns and the possibility of increased response times, emergency services are a high concern and resiliency/adaptation implementation should be a high priority.

Evacuation Routes: Between 0.5% and 1.6% (approximately 1.4 to 4.2 miles) of the County's evacuation routes lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and 3.1% (8.1 miles) could be inundated during a storm surge and SLR by 2050. Typically, the emergency routes are state highways. Substantial reliance on this single mode of transportation for evacuations may endanger citizens if the highway infrastructure is made inaccessible because of SLR. The majority of these impacts occur in Study Areas 3 and 4. Because of high public safety concerns and the likelihood that inundated evacuation routes will further congest the alternate evacuation routes over a large geographic area, inundated evacuation routes are a high concern and coordination with SHA for resiliency/adaptation implementation should be a high priority.

Wastewater Facilities: Of the six wastewater treatment plants identified in this study, three of the properties are partially inundated by the anticipated 2050 SLR and four properties are inundated by 2100 SLR. Four properties are also inundated during a storm surge and 2050 SLR. Additionally, a total of 30 wastewater vacuum stations, pumping stations, and lift stations were identified in the County with two (2) and 12 of those facilities being impacted by 2050 and 2100 SLR, respectively, and 17 impacted by storm surge and SLR by 2050. True impacts to the treatment plants and other wastewater facilities are difficult to quantify as outfall elevations and elevations of other potentially critical mechanical equipment were not evaluated in this study. Although the facility locations may be inundated, the equipment may still function to a certain inundation level. Alternatively, infiltration of sea water into wastewater lines may overload the system and cause failure. Due to the potential of failure of this resource and the public health concerns due to failure, inundation of wastewater facilities is a high concern and resiliency/adaptation implementation should be a high priority.

Other Utilities: Table 17 and Table 36 summarize impacts by type of utility based on QACO's utility dataset for SLR and storm surge scenarios respectively. These utilities can be ranked as high, moderate, or low concern depending on the utility. Utilities of moderate and low concern are discussed later in this section. The following summarizes other utilities of high concern:

- Telecommunication towers – Of the 47 telecommunication towers included in the County's dataset, two properties are inundated by SLR by 2050, three are inundated by SLR by 2100, and four are inundated by storm surge and SLR by 2050. While the tower structures themselves may not be impacted by inundation, critical electrical equipment components may be impacted causing failure of the resource. Due to the potential for public safety impacts, inundation of telecommunication towers is a high concern and resiliency/adaptation implementation should be a high priority.
- Storm drain systems – Storm drain systems in QACO is comprised of multiple components including catch basins, drop inlets, manholes, and storm drain pipes. For the purposes of this assessment culverts and concrete drains (driveway culverts) are also included as a storm drain feature. The County storm drain system contains more than 21,000 components. Approximately 3% of the total components are inundated by SLR by 2050, 8% are inundated by SLR by 2100, and 17% are inundated by storm surge and SLR by 2050. It is important to note that in this assessment these storm drain features are shown as inundated based on existing ground elevation. Many of these storm drain features are located underground and impacts are expected to be greater. Storm drain systems are noted as a high concern as the affected systems will no longer function through many of the coastal areas of the County and resiliency/adaptation implementation should be a high priority.

Private Residential Property: Approximately 0.3% and 5.1% of the County's residential buildings lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 14.2% of residential buildings could be inundated during a storm surge and SLR by 2050. At least a portion of 16% and 22% of the County's residential properties lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 31% could be inundated during a storm surge and SLR by 2050. These percentages increase significantly in Study Areas 3 and 4, specifically in the Bay City, Kent Island Estates, Cloverfield, and Harbor View areas. Many of these homes are already in flood-prone areas and may have elevated first floor elevations to protect against flooding. However, road access too many of these homes and residential areas may be limiting whether the structures are flood-proofed or not. Because this resource poses a threat to public safety and the impacts in many cases expand over a large geographic region it is noted as a high concern and resiliency/adaptation implementation should be a high priority.

Commercial Development: Approximately 29% and 35% of the County's commercial properties lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 44% could be inundated during a storm surge and SLR by 2050. Approximately 2% and 6% of the County's commercial buildings lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 12% could be inundated during a storm surge and SLR by 2050. These percentages increase dramatically in Study Area 3, primarily in the Kent Narrows area. Because these impacts expand over a relatively large geographic region and permanent loss of function will occur to many of the businesses, commercial development is considered a high concern and resiliency/adaptation implementation should be a high priority.

Agriculture: Between 1.7% and 2.6% of the County's agricultural properties lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 4.0% could be inundated during a storm surge and SLR by 2050. Temporary inundation of agricultural areas could result in decreased crop

yields as a result of salt contamination following a coastal storm surge. Additionally, SLR can impact agriculture prior to permanent inundation as a result of soils that are too wet to till. Due to the complete loss of function, inundation of agricultural properties is of high concern and resiliency/adaptation implementation should be a high priority.

Wetlands: Between 13% and 15% of the County's NWI Wetlands lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and 12% and 15% of the County's DNR Wetlands lie within an area that could be inundated by SLR by 2050 and 2100 respectively. SLR plus storm surge inundation is a temporary impact that affects 18% of NWI wetlands and 17% of DNR wetlands. NWI impacts range from 62% to 78% for SLR by 2050 and 2100 in Study Areas 3 and 4 which are a better indication of the impact to this resource. Due to the high percentage of coastal wetlands affected and the loss of unique and protected habitats, this resource is of high concern and resiliency/adaptation implementation should be a high priority.

Critical Area: Over 4,000 acres of Critical Area existing in QACO, of which approximately 500 and 820 acres could be inundated by SLR by 2050 and 2100 respectively. SLR plus storm surge inundation is a temporary impact that affects approximately 1200 acres. The Critical Area provides a protection to the Chesapeake Bay ecosystem by minimizing the adverse effects of human activities on water quality and natural habitats. Loss of function of this resource is of high concern and resiliency/adaptation implementation should be a high priority.

Moderate Concern Resources

A moderate concern resource is generally a resource when public health and safety is potentially threatened by temporary or long-term inundation, where geographic impacts extend to a small regional area, and/or when inundation would cause some resource failure of intended use or temporary loss of function. Based on the results of the vulnerability assessment, the following resources are of moderate concern.

Roads and Bridges: Between 0.3% and 2.1% (approximately 3.6 to 22.7 miles) of the County's roads lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and 5.8% (62 miles) could be inundated during a storm surge and SLR by 2050. Many of these roadway impacts also include bridges. For the purposes of this study bridge impacts were not quantified as elevation data was not available for bridge decks. Inundation of roadway segments would only cause smaller regional transportation disruptions if emergency routes were available. Not including the evacuation routes, inundation of roadways is a moderate concern due to potential local and smaller regional impacts and partial resource failure of intended use and/or temporary loss of function.

Water Supply: Of the eleven water treatment plants identified in this study, one of the properties is partially inundated by the anticipated 2050 SLR and three properties are inundated by 2100 SLR. These three properties are also inundated during a storm surge and 2050 SLR. Like the wastewater facilities, true impacts to the water treatment plants are difficult to quantify as outfall elevations and elevations of other potentially critical mechanical equipment were not evaluated in this study. Although the facility properties may be inundated, the equipment may still function to a certain inundation level, especially at the water tower locations. Alternatively, infiltration of salt water into in-ground drinking water storage tanks will have a long-term impact to fresh water supply. This resource is considered a moderate concern due to the unknown potential failure of this resource and smaller regional area affected.

Other Utilities: The following summarizes other utilities of moderate concern:

- Lamp posts, light poles, utility poles, and utility boxes – These other utilities are combined as similar utilities that have the potential to cause power or other utility outages if inundated. It is difficult to determine what utilities are located on the utility poles or within utility boxes. Typically these resources could include a combination of any or all of electric, cable television, telephone, and/or fiber optic lines. The County's dataset consists of more than 22,000 lamp posts, light poles, utility poles, and utility boxes, of which approximately 2% and 5% lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 11% could be inundated during a storm surge and SLR by 2050. Since it is not clear what consequences inundation of these resources would pose, and at a minimum, inundation of these resources could cause some resource failure of intended use or temporary loss of function, these resources are considered a moderate concern.
- Stormwater ponds – Of the 415 stormwater ponds identified in the County's Other Utility dataset, 27 and 60 lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and 90 could be inundated during a storm surge and SLR by 2050. Inundation of stormwater ponds could cause some resource failure of intended use and contribute to nuisance flooding of adjacent areas and are considered a moderate concern. Stormwater ponds can be intimately linked to the storm drain system function. Stormwater ponds located in areas of high priority for storm drain systems could be elevated to the same priority in these locations.

Low Concern Resources

A Low concern resource is generally a resource when public health and safety concerns are unlikely by temporary or long-term inundation, where geographic impacts extend only to a local or isolated area, and/or when inundation would cause a minor impact to the resource or if the resource functions with modifications. Based on the results of the vulnerability assessment, the following resources are categorized as of low concern.

Schools: No school building structures are impacted in any of the modeled SLR or storm surge scenarios. However, of the 38 schools identified Countywide, between one and four of the County's school properties lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and 9 school properties could be inundated during a storm surge and SLR by 2050. These property impacts are generally at lower elevations on the properties and may include impacts to forested areas, ball fields, and/or other common areas. Typically sufficient warning is anticipated prior to a coastal storm event and public safety is not a concern. Planning will be required to relocate schools' amenities as needed to avoid SLR impacts to school property. Due to the isolated nature of the impacts to property, and little or no anticipated loss of function, there is low concern for this resource. Schools that are designated as emergency shelters in vulnerable areas in which access is also vulnerable could be elevated to high concern.

Other Utilities: The following summarizes other utilities of low concern:

- Fire hydrants - Approximately 2% and 8% of the County's fire hydrants lie within an area that could be inundated by SLR by 2050 and 2100 respectively, and approximately 17% could be inundated during a storm surge and SLR by 2050. Since fire hydrant supply is watertight it is anticipated that access to fire hydrants due to inundated roadways will be a bigger concern than the systems

themselves. Due to the fact that a failure of functionality is unlikely, this resources is noted as a low concern.

- Dams – None of the dams from the County's utility dataset are inundated by SLR in Scenarios 1 or 2. Two of the nineteen dams identified in the dataset are inundated by SLR plus storm surge. These two dams are stormwater pond embankments and do not pose a threat to public safety. No large-scale flood control dams or levees are identified in the County's utility dataset. Dams, as presented in the County's dataset, are considered a resource of low concern.
- Substations – No impacts have been determined for any of the SLR and storm surge scenarios based on the County dataset. There is low concern for this resource.
- Transformers – No impacts have been determined for any of the SLR and storm surge scenarios based on the County dataset. There is low concern for this resource.
- Traffic signal poles – No impacts have been determined for any of the SLR and storm surge scenarios based on the County dataset. There is low concern for this resource.

6. ADAPTATION STRATEGIES

Generally, adaptation means adjusting to new conditions and taking steps to mitigate, manage, and avoid the worst possible consequences of the effects of SLR and coastal hazards. Adaptation strategies can be actions to prepare for SLR and coastal hazards in a specific location, such as raising structures out of flood-prone areas or building dikes to keep water out of low-lying areas. Adaptation strategies can also include planning efforts to avoid placement of new infrastructure in vulnerable areas. Additionally, building the capacity to adapt can also serve as a strategy. This can include increasing the availability of data, technical expertise, funding, regulations, coordination, public support, etc. that will allow for selection and implementation of adaptation strategies.

Proactive SLR/coastal hazard planning and incorporation of SLR scenarios into plans for new development, redevelopment, and capital projects not only allows the County to build resiliency in the short-term, but also minimizes the need for more costly upgrades in the future. It can also increase the expected lifespan of infrastructure and support sustainability of natural resources and agriculture.

Strategies presented herein are intended to provide guidance and recommendations to QACO staff for implementation at the County level. Some strategies are more prescriptive than others with the intention that any recommendations will ultimately be developed by the County for implementation. Adaptation planning and implementation plans should be adjusted and improved as more information becomes available.

Adaptation strategies are often grouped into the following categories:

1. **Avoid** – Avoidance strategies seek to limit new development or infrastructure in vulnerable areas.
2. **Accommodate** – Accommodate strategies acknowledge the long-term effects of SLR and coastal hazards, while implementing short-term measures to maintain the existing use of a resource. These strategies decrease the risks of SLR without using potentially more costly protection strategies.
3. **Protect** – Protection adaptation strategies focus on protecting land from inundation or storm-induced flooding through construction of larger, longer-lasting projects such as building levees or raising elevations of roadways and other utilities.
4. **Retreat** – Retreat adaptation strategies allow for natural shore migration through land conservation and planned relocation of structures and other infrastructure.
5. **Build Adaptive Capacity** – The strategy of building adaptive capacity is not a solution in itself but is critically important to provide the data and knowledge to inform the aforementioned adaptation strategies. Communities with more capacity to adapt to SLR and coastal flooding are able to react quickly and make informed decisions.
6. **No Action** – The no-action strategy is the default strategy for communities that do no proactively plan for SLR and coastal flooding. This un-planned retreat results in loss of habitat and infrastructure that are imminent or have already occurred, leaving few viable options for adaptation. This adaptation strategy is not discussed further in this document and is not recommended herein for any identified vulnerable resources.

The following are adaptation strategies that can be used Countywide:

Avoid

- Create elevated County review procedures for future projects in vulnerable areas, limiting or prohibiting new development or infrastructure in areas that are particularly vulnerable.
- Allow coastal wetlands to migrate landward to provide habitat and natural buffer to coastal storms.
- Set up processes for transfer of development rights, conservation easements, and/or setback requirements.

Accommodate

- Provide regulatory incentives that encourage SLR and coastal flooding adaptation and allow for innovative projects.
- Encourage elevation of habitable structures above the base flood elevation plus SLR and/or encourage flood-proofing of vulnerable structures.
- Incorporate development standards and regulations that are more stringent than current regulations and that allow for SLR, such as additional freeboard requirements for new construction and/or redevelopment.
- Foster pilot projects that demonstrate the effectiveness of adaptation actions of agricultural lands affected by SLR and coastal flooding through conversion to tidal marsh systems.
- Create redundancy for at risk infrastructure and emergency services

Protect

- Designate critical shoreline zones for adaptation action and evaluate projects such as living shorelines, thin layer dredge disposal on tidal marshes, and beach nourishment that help to preserve a static shoreline in critical areas.
- Require all infrastructure project planning to incorporate SLR.
- Consider the use of levees, dikes, floodwalls, flood gates, tide gates, and other structural means to protect vulnerable areas.
- Identify and preserve areas for potential wetland migration.
- Flood-proof infrastructure

Retreat

- Allow for natural shoreline migration through land conservation and removal of structures that prevent shoreline movement.
- Evaluate the relocation or buy out potential of structures and infrastructure in vulnerable areas.
- Evaluate the feasibility of land acquisition by government, communities, businesses, or non-profit organizations of vulnerable parcels for permanent protection and management.

Build Adaptive Capacity

- Engage broad public participation in adaptation decisions.
- Improve coordination of permit decisions for adaptation projects among federal, state and local officials.

- Create new partnerships to increase resources for research and development of adaptation options, such as with adjacent Counties, non-government organizations (NGOs), local universities, and state/federal agencies.
- Conduct a comprehensive inventory of funding mechanisms, regulations and policies to remove barriers that prohibit opportunities for SLR and coastal hazard adaptation.
- Consider cost-sharing projects with state and federal agencies, such as SHA, that are mutually beneficial in increasing resiliency for resources with common interests.
- Develop a framework for decision making regarding land protection and restoration strategies based on wetland and habitat vulnerability that would include restoration, protection, and retreat strategies.
- Evaluate the benefits and risks of permitting privately-owned coastal impoundments and evaluate procedures for inspection and maintenance of such impoundments.
- Develop a comprehensive outreach strategy to educate stakeholders about SLR and coastal vulnerability and provide continuing education to affected communities and citizens.
- Install tide gauges and salinity observation stations to monitor changes over time.
- Encourage FEMA to incorporate SLR into their flood models and mapping.
- Develop additional datasets to assess vulnerability of SLR and coastal flooding.
- Identify data gaps and collect necessary data to plan for infrastructure investments that are part of implementation plan for adaptation.
- Improve understanding of impacts to adjacent properties from adaptation actions.
- Provide technical assistance to NGOs, local governments, business owners, and residents.
- Perform an assessment and analysis of funding options for adaptation measures.
- Develop a plan for prioritization of adaptation actions.
- Plan early for SLR and increased coastal flooding.
- Develop a training budget for County employees to receive continued training and understand the best available science and technology for decision making.
- Employ FEMA Community Rating System (CRS) activities

7. RECOMMENDED ADAPTATION STRATEGIES

The impacts discussed in the Vulnerability Assessment from SLR and coastal hazards will not be experienced all at once in the years 2050 or 2100. Adaptation and increasing resiliency needs to be an ongoing effort to combat impacts that are being seen and felt incrementally. Many of the data gaps identified and recommended additional evaluation highlight the need for planning, building adaptive capacity, and incorporating adaptation strategies. This Vulnerability Assessment has compiled a large amount of data but additional site-specific or resource-specific data may be needed before adaptation measures can be implemented in a particular location or for a particular resource.

Avoid, accommodate, retreat, protect, and build adaptive capacity strategies can be undertaken simultaneously to meet the goals of reducing vulnerability to SLR and coastal flooding and increasing resiliency of County resources. It is important to assess and monitor adaptation strategies over time and update longer-term plans to incorporate lessons learned, new data, changing public perceptions, and reflect changing conditions.

Short-term action strategies address the immediate needs of the County to build resiliency and protect against SLR and coastal flooding. These are typically strategies to either provide temporary protection of resources or planning activities for more permanent protection. Short-term action strategies should include evaluation of regulatory changes for development, flood proofing of existing resources, incorporation of SLR in planning for future capital projects, and continued efforts to build adaptive capacity.

Medium-term action strategies begin to implement short-term planning studies and increase the level of protection in the County. Long-term strategies aim to create more permanent solutions and resiliency to achieve lasting protection throughout the County. Monitoring and assessment of previously implemented strategies should be continued for medium- and long-term strategies and adjustments made as new data becomes available. Lessons learned should continually be evaluated and incorporated into planning and implementation of revised strategies. Building adaptive capacity should continue long-term.

Table 46, Table 47, and Table 48 provide recommended short-term, medium-term, and long-term adaptation strategies for public safety and infrastructure resources respectively and Table 49, Table 50, and Table 51 provide recommended short-term, medium-term, and long-term adaptation strategies for natural resources and land use respectively.

TABLE 46: PUBLIC SAFETY AND INFRASTRUCTURE SHORT -TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
• Increase building set-back distances • Identify opportunities for voluntary conservation easements • Create elevated County review procedures for projects in vulnerable areas • Evaluate process for transfer of development rights • Coordinate with private utility companies to incorporate SLR • Encourage FEMA to update Flood Insurance Rate Maps (FIRMs) to include SLR and re-map riverine flooding with SLR effects • Encourage FEMA to update FIRMs to include impacts to storm surge modeling based on SLR	• Improve emergency evacuation plans based on SLR projections • Evaluate boat transportation emergency routes to areas isolated by inundation • Flood-proof at-risk structures • Evaluate regulatory incentives that encourage SLR and coastal flooding adaptation • Evaluate mobile capabilities and mutual aid backup of emergency services	• Evaluate feasibility of levees and other structural measures to protect vulnerable areas • Identify targeted areas to be protected • Evaluate and determine regulatory elevations for vulnerable areas • Coordinate SLR adaptation with SHA • Evaluate elevation of critical component elevations of wastewater and water treatment/ transmission facilities • Coordinate development and Capital Improvement plans to address as many affected resources as possible	• Identify areas of high vulnerability • Evaluate relocation potential of structures and infrastructure in vulnerable areas • Evaluate feasibility of land acquisition of vulnerable parcels • Purchase frequently flooded areas and remove structures	• Improve coordination with Federal, State, and Local officials • Create new partnerships to increase resources for research and development of adaptation options • Conduct comprehensive inventory of funding mechanisms, regulations, and policies to remove barriers to SLR adaptation • Provide technical assistance to local governments, business owners, and residents • Develop a prioritization plan of adaptation actions • Evaluate socio-economic impact of SLR • Participate in FEMA's Community Rating System and employ CRS activities

TABLE 47: PUBLIC SAFETY AND INFRASTRUCTURE MEDIUM -TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
• Implement conservation easements • Monitor set-back requirements • Limit or prohibit new infrastructure in vulnerable areas • Implement transfer of development rights • Require private utilities to build new infrastructure outside of vulnerable areas • Incorporate new studies from FEMA and updated FIRMs	• Develop plans for mobilization of emergency management services • Require additional freeboard of new homes above the base flood elevation • Incorporate regulatory incentives for innovative projects that adapt to SLR and coastal flooding • Improve boat access for emergency evacuation services	• Require roads to be elevated to provide access to new development and targeted protection areas • Require new development to protect against regulatory elevations in vulnerable areas • Evaluate impacts to adjacent properties from adaptation actions • Coordinate elevation of evacuation routes/ bridges with SHA • Retrofit wastewater and water treatment/ transmission facilities as needed • Elevate wastewater manholes above anticipated SLR and flood elevations to prevent inundation	• Create a special funding mechanism for purchase of frequently flooded structures • Purchase frequently flooded areas and remove structures • Implement rolling easements	• Engage public participation in adaptation decisions • Implement cost-sharing projects with State and Federal agencies • Update Multi-Jurisdictional Hazard Mitigation Plan, Floodplain Management Plan, Zoning Ordinance, Comprehensive Plan, and Capital Improvement Plan to address SLR • Continue FEMA's CRS program and employ CRS activities • Identify grant opportunities to incorporate SLR adaptation projects

TABLE 48: PUBLIC SAFETY AND INFRASTRUCTURE LONG -TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
• Continue monitoring set-back compliance • Monitor conservation easements • Continue limiting or prohibiting new resources in vulnerable areas • Monitor transfer of development rights procedures and adjust as needed	• Construct new infrastructure projects above the vulnerable elevation • Monitor SLR and coastal flooding effects on infrastructure and adjust regulatory requirements • Continue monitoring regulatory incentives for projects incorporating SLR	• Elevate roadways in targeted protection areas • Retrofit wastewater and water treatment facilities as needed for protection against inundation • Adjust adaptation actions to protect adjacent properties • Coordinate elevation of evacuation routes/ bridges with SHA	• Purchase frequently flooded areas and remove structures • Monitor rolling easement compliance • Remove structures that prevent shoreline movement	• Evaluate adaptive capacity and adapt as necessary • Employ FEMA CRS activities

TABLE 49: NATURAL RESOURCES AND LAND USE SHORT -TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
• Identify opportunities for voluntary conservation easements • Evaluate changes to zoning	• Install salinity observation stations to monitor changes to freshwater resources over time • Evaluate potential crop changes for agricultural areas such as aquaculture	• Identify beaches with high erosion rates • Evaluate living shoreline protection • Identify potential wetland migration areas	• Identify areas of high vulnerability • Identify land conservation areas and protect with easements	• Improve coordination with Federal, State, and Local officials and identify conflicting regulatory requirements • Create new partnerships to increase resources for research and development of adaptation options • Develop framework for decision making regarding land protection and restoration strategies • Evaluate socio-economic impact of SLR

TABLE 50: NATURAL RESOURCES AND LAND USE MEDIUM -TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
• Implement conservation easements • Allow coastal wetlands to migrate landward	• Monitor conversion of freshwater wetlands and agricultural land to salt water wetland	• Replenish beaches • Preserve wetland migration areas • Coordinate sand supply from State or Federal dredging projects for reuse	• Create new land conservation areas	• Implement cost-sharing projects with State and Federal agencies • Encourage DNR to continually evaluate and update Critical Area • Identify grant opportunities to incorporate SLR adaptation projects

TABLE 51: NATURAL RESOURCES AND LAND USE LONG -TERM ADAPTATION STRATEGIES

AVOID	ACCOMODATE	PROTECT	RETREAT	BUILD ADAPTIVE CAPACITY
• Monitor coastal wetlands and enhance as needed • Monitor conservation easements	• Enhance conversion of freshwater wetlands and agricultural lands to saltwater wetlands	• Monitor wetland migration and identify/ preserve additional wetland migration areas	• Monitor land conservation areas and reassess as needed	• Reassess County's adaptive capacity and adjust as needed

8. IMPLEMENTATION PLAN

Implementation of the recommended adaptation strategies can best be achieved at the County level through more stringent regulatory requirements and revision of planning documents to incorporate the impacts of SLR and coastal flooding scenarios. The recommended adaptation strategies in Section 6 are intended to be somewhat broad in nature so that they were not unnecessarily prescriptive. However, since specific actions are not proposed herein the County will need to decide which strategies may work best in the County based on funding, political support, socio-economics, regulatory environment, and County agency organization and objectives. For example, the recommendation to "identify targeted protection areas" is an important recommendation since protection of all County resources is not economically feasible, but will require the County to determine how to best allocate funding to protect those areas most critical to the livelihood of the County residents.

The following identifies implementation opportunities through incorporation of SLR and coastal flooding scenarios into county planning and regulatory documents.

Data Collection to Fill Data Gaps

This report has identified the following data gaps that will help the County plan and update strategies and implementation of projects to build resiliency and protection against SLR and coastal storms:

- First floor building elevations
- Bridge locations and deck elevations
- Road centerline elevations
- Storm drain invert elevations (including outfalls)
- Critical component elevations of wastewater and water treatment facilities
- Locations of private wells
- Locations of septic fields and systems
- Upland forests
- Beaches and dunes
- Saltwater vs. freshwater wetlands
- Piers and boat ramps

These data will be important when prioritizing adaptation strategies, assessing potential projects, allocating funds, and designing and implementing future projects.

Multi-Jurisdictional Hazard Mitigation Plan

The QACO Multi-Jurisdictional Hazard Mitigation Plan (2012-2017) currently does not address the effects of SLR. Understanding the effects of SLR on hazard mitigation will be important in order for the County to coordinate hazard response; update mitigation goals, objectives, and related actions; and implement hazard mitigation policies, programs, and projects. Incorporating SLR scenarios into mitigation planning will help to protect public safety and property, incorporate cost-savings activities and projects, permit access to federal funding for SLR related projects, and promote effective recovery post-disaster.

SLR should be incorporated into the next revision to properly define the Hazard Identification and Risk Assessment (HIRA), identify mitigation goals, and update execution and maintenance plans for flooding

and hurricanes as well as address the effects of SLR on emergency services and emergency evacuation routes. Adaptive management implementation projects to reduce vulnerability to SPR that are included in the report should be listed in the plan to project the potential for FEMA support/funding for these projects.

Floodplain Management Ordinance

The QACO floodplain management ordinance incorporates regulations to protect the public health, safety, and general welfare of the community. The statement of purpose includes "meeting" the community participation requirements of the National Flood Insurance Program (NFIP) as set forth in the Code of Federal Regulations (CFR). The floodplain regulations apply to all special flood hazard areas (SFHA) within the jurisdiction of QACO. While the SFHA as shown on the FEMA maps generally encompass the SLR scenarios presented herein, the SFHAs themselves do not incorporate SLR. As sea levels continue to rise, the SFHAs will become incrementally outdated.

The floodplain management ordinance can be modified to incorporate SLR specifically, or through requirements that exceed FEMA's minimum standards that will ultimately protect against SLR. For example, QACO has identified the flood protection elevation as the base flood elevation plus two (2) feet of freeboard, which is more stringent than FEMA's minimum requirement of one (1) foot of freeboard. With SLR projections of two (2) to four (4) feet between 2050 and 2100, the flood protection elevation may need to be reevaluated from time to time as actual SLR is monitored.

Additional requirements and/or more-stringent standards should be evaluated with regards to floodplain setbacks, substantial improvements of structures in SFHAs (including repair of substantial damage), and/or building location requirements as it relates to tidal elevations and/or anticipated SLR elevations. These and other more-stringent regulations will help the County accumulate points towards the Community Rating System (CRS) with FEMA. Protecting against future SLR will also build resiliency in today's storm events.

Zoning and Subdivision Regulations

QACO Zoning and Subdivision Regulations should be evaluated for comprehensive changes to zoning districts to account for SLR and coastal hazards. Long-range land use plans are the logical place to start adaptation planning and zoning codes can be the strongest potential SLR adaptation regulatory tools. In areas vulnerable to SLR the creation of special districts with restrictive zoning may be needed to begin the orderly disinvestment of those zones over time.

Evaluation of permitted uses by district is recommended, particularly the Countryside District that generally lies within the Critical Area. This may result in permitted uses being revised to conditional uses, or conditional uses being revised to non-permitted uses, to allow the County authority to make informed decisions whether or not to permit uses that will add infrastructure to vulnerable areas.

Increasing setback distances from tidal wetlands will also be an effective tool to build resiliency in mixed-use, commercial, light industrial, and residential uses. Setback distances should be assessed for all districts to evaluate SLR and vulnerable coastal buffers.

Zoning within the areas vulnerable to SLR and coastal flooding, including within FEMA's effective floodplain could have a requirement for minimum lot sizes or land use to reduce the number of vulnerable structures. This will also contribute to scoring criteria under the CRS.

Comprehensive Plan

A Comprehensive Plan is an advisory document and should be reviewed and revised as change occurs to cover new challenges. The Queen Anne's County Comprehensive Plan (2010) contains the blueprint for the future development and preservation of the County and the plan is the policy foundation upon which the County is built. Comprehensive plans are not law, however the statutes that require their preparation mandate that all zoning or land use laws must be updated in accordance with the plan to prevent the enactment of arbitrary regulation and ensure the public welfare is being served through legislation implementing the goals of the community.

The Comprehensive Plan expresses long-range goals and objectives of the County and can recommend land uses. This is typically a precursor to changes in Zoning. Without accommodations for SLR and related coastal hazards, many of the coastal areas will not be able to sustain build-out scenarios without putting people and property at risk.

Changes to the Comprehensive Plan may include revisions to ultimate land uses to account for areas vulnerable to SLR and coastal hazards. SLR and coastal hazards have the potential to affect many of the elements of the plan including, but not limited to; land use, sensitive areas, water resources, priority preservation areas, historic and cultural preservation, County/Town planning framework, economic development and tourism, and community facilities and transportation.

Capital Improvement Plan

County departments typically recommend an annual capital budget while the County Commissioners approve the budget while considering the priorities established by a long-term plan, typically 5, 10, or 20 years. Planning for SLR should be incorporated into all applicable capital improvement design projects leading to design, as well as long-term plans and budgets. Many of these projects are large-scale projects with long design life expectancies. Incorporating SLR will not only build resiliency into future projects, but will provide a cost savings compared to retrofitting a project prior to the end of its useful life expectancy.

This assessment report identifies roads, bridges, wastewater facilities, water facilities, and other potential capital projects that could be affected by SLR and changing coastal hazards. As these impacted resources are scheduled for upgrades, retrofits, and/or replacement, consideration of SLR should be evaluated.

Capital improvement plans also typically identify options for financing the plan. QACO should continue to assess means to finance projects through grants, cost-sharing, and other alternative funding options. Climate change and disaster-related resiliency grants are becoming more available as climate change and SLR are more understood. The U.S. Department of Urban Development (HUD), FEMA, NOAA, NRCS, and other agencies are providing funding for resilient housing, infrastructure, agricultural, and natural resource projects, especially to communities impacted by major disasters.

Cost-sharing can provide mutual benefits from a wide array of partners. Coordination and agreements with SHA may allow roadway projects to incorporate SLR that otherwise may not have addressed vulnerable areas. Sediments dredged from navigation channels in the Chesapeake Bay are many times deposited in upland confined disposal sites. Partnerships can be developed to use dredged spoils to replenish beaches to protect against erosion and/or to elevate tidal marshes to accommodate SLR without inundation of the resource. This can also save money by reducing transportation costs of dredged material. The County may want to evaluate the benefits of a Regional Sediment Management Plan and

Beneficial Use of Dredged Materials in cooperation with the USACE and State of Maryland to plan for, identify, and coordinate potential opportunities.

Prioritization of Adaptive Management Strategies

Due to the magnitude of the recommendations, the diversity in vulnerabilities, the diversity of resources that are vulnerable, and the realization of funding limitations and capacity – a prioritization strategy should be developed for implementation opportunities. There are a number of means to prioritize adaptive management strategies. Strategies can vary by resource, threat, level of risk, cost of implementation, community, funding, multi-purpose/functions, number of benefactors, or other approaches. The process of setting priorities should be part of the evaluation of how recommendations are incorporated into the various county regulations and plans. Initial prioritized strategies should include staff resources to update plans with recommendations and complete the non-capital opportunities first such as updated mapping, outreach, communication, and avoidance strategies to reduce new vulnerabilities.

Funding

As noted in the Capital Plan Section, there are traditional funding mechanisms available for implementation projects. These funds are limited and there is extensive competition for the funds. Strategies to pursue these funds and position for high potential for reward should be part of an implementation plan. The need to generate additional funding resources is evident and a strategy to develop those alternative programs is vital to an implementation plan. Many communities are looking into creative fee structures, taxes, public/private partnerships, incentive programs, and the like for needed funding.

Public Engagement

Many of the recommended adaptation strategies and implementation plan recommendations include actions pertaining to private land and/or use of public funds through private citizen taxes, each with their own opinions of SLR and each with their own interests in mind. Additionally, much of the County's population resides in upland areas that are relatively unimpeded by SLR and coastal hazards. It is important that adaptation strategies are as equitable as possible across the County. It is also important to gain public buy-in to adaptation strategies. This can be accomplished through dissemination of information, hearing and addressing concerns, and implementing unbiased solutions. Town meetings, charrettes, questionnaires, surveys, flyers, and/or other methods of communication can be used to solicit feedback, identify concerns, and implement solutions. Any engagement efforts need to consider use of language and images that the lay public can understand and relate to personally to be effective. Engaging resources to assist in this communication may be beneficial as part of an implementation plan.

Timeline

The timeline to implement adaptation strategies to build resiliency is largely dependent on available funding and capacity of QACO staff. Short-term recommendations identified herein should be implemented to the extent practicable now and as planning, permitting, design, and construction progresses within the County. As County planning documents are updated, SLR and coastal hazard adaptation strategies should be incorporated. Medium-term and long-term recommendations should be incorporated as feasible and identified in the prioritization of adaptive management strategies plan.

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12. Queen Anne's County, Comprehensive Water and Sewerage Plan, 2011

APPENDIX A
COASTAL VULNERABILITY AREA MAPS

Map A1 Coastal Vulnerability Area Map – Study Area 1

Map A2 Coastal Vulnerability Area Map – Study Area 2

Map A3 Coastal Vulnerability Area Map – Study Area 3

Map A4 Coastal Vulnerability Area Map – Study Area 4

Map A5 Coastal Vulnerability Area Map – Southern Kent Island - North

Map A6 Coastal Vulnerability Area Map – Southern Kent Island - South

APPENDIX B
INFRASTRUCTURE IMPACT MAPS

Map B1 Infrastructure Impacts – Study Area 1

Map B2 Infrastructure Impacts – Study Area 2

Map B3 Infrastructure Impacts – Study Area 3

Map B4 Infrastructure Impacts – Study Area 4

Map B5 Infrastructure Impacts – Southern Kent Island - North

Map B6 Infrastructure Impacts – Southern Kent Island - South

APPENDIX C
NATURAL RESOURCE IMPACT MAPS

Map C1 Natural Resource Impacts – Study Area 1

Map C2 Natural Resource Impacts – Study Area 2

Map C3 Natural Resource Impacts – Study Area 3

Map C4 Natural Resource Impacts – Study Area 4

Map C5 Natural Resource Impacts – Southern Kent Island - North

Map C6 Natural Resource Impacts – Southern Kent Island - South

APPENDIX D
ASSESSMENT DATASET INVENTORY

Assessment Dataset Inventory

Dataset	Source
Adjacent Counties	ESRI
Critical Areas	Maryland Department of Natural Resources
DNR Wetlands	Maryland Department of Natural Resources
NWI Wetlands	National Wetlands Inventory website
1-ft. Contour Interval LiDAR data	QACO GIS
Address Points	QACO GIS
Buildings (addressable)	QACO GIS
Commissioner Districts (used as Study Areas)	QACO GIS
Incorporated Towns	QACO GIS
Parcels	QACO GIS
Road Centerlines	QACO GIS
Shoreline	QACO GIS
Utilities (lines)	QACO GIS
Utilities (points)	QACO GIS
Agriculture Land Use	QACO GIS (from QACO Parcel dataset)
Commercial Structures	RKK (from QACO Address Point and Building dataset)
Emergency Services	RKK (from QACO Address Point and Building dataset)
Municipal Structures	RKK (from QACO Address Point and Building dataset)
Residential Structures	RKK (from QACO Address Point and Building dataset)
Schools	RKK (from QACO Address Point and Building dataset)
Wastewater Treatment Plants	RKK (from QACO Address Point dataset)
Water Towers	RKK (from QACO provided addresses and Utility Lines dataset)
Ground Storage Tanks	RKK (from QACO provided addresses)
Lift Stations	RKK (from QACO provided addresses)

Dataset	Source
Piers	RKK (from QACO provided addresses)
Pumping stations	RKK (from QACO provided addresses)
Vacuum Stations	RKK (from QACO provided addresses)
Water Booster Pump Stations	RKK (from QACO provided addresses)
Water Treatment Plants	RKK (from QACO provided addresses)
Well House	RKK (from QACO provided addresses)
SLR Scenario 1	RKK (from QACO provided LIDAR)
SLR Scenario 2	RKK (from QACO provided LIDAR)
SLR Scenario 3	RKK (from QACO provided LIDAR)
Emergency Evacuation Routes	SHA (from DelMarVa Emergency Task Force)

APPENDIX E

Queen Anne's County

Sea Level Rise and Coastal Vulnerability Assessment

And Implementation Plan

March 2016

APPENDIX F

MARYLAND 2017

LAND PRESERVATION PARK & RECREATION GUIDELINES

Table of Contents 1

Introduction: 2
Preparing or Updating an LPPRP for 2017 2
Recommended Timeline and Due Dates 2

LPPRP Content Guidelines:
General Overview 5
Parks and Recreation 5
Natural Resource Conservation 10
Agricultural Land Preservation 12

Appendices:

Appendix A: 16
State Goals
B-1: Parks and Recreation
B-2: Natural Resource Land Conservation
B-3: Agricultural Land Preservation

Appendix B: 19
Sample Inventory Spreadsheet

Appendix C: 20
Sample Recreational Surveys/Questions

Appendix D: 21
Federal, State and Other Studies to Consider

Appendix E: 22
Level of Service Analysis
Proximity Analysis and Park Equity Analysis Tool

Appendix F: 24
GIS Data Sharing

Introduction

Public parks and recreation facilities, and lands preserved for their agricultural and natural resource values provide Maryland residents and visitors with a wide array of services that benefit their quality of life. These places and amenities help create healthier communities, stimulate local economies and are vital pieces of community infrastructure. Land Preservation, Parks and Recreation Plans (LPPRPs) are an important resource and mechanism through which county governments and the City of Baltimore can evaluate and update their baseline information on key issues, trends and plans for managing and enhancing the systems of preserved public lands, parks and recreation facilities in their jurisdictions. These Plans can and should be a resource that provides county and state leaders and the general public with a "snapshot" of the status of issues outlined in these Guidelines, as well as provide a clear understanding of the county or City's goals, strategies and priorities for investing to improve parks and recreation facilities and open spaces for the public benefit.

Information from the LPPRPs guides land conservation and parks and recreation planning and decision making within each county, City of Baltimore and the Maryland Department of Natural Resources (DNR), and is important to the work of the Maryland Department of Planning (MDP). The preparation and/or regular update of an LPPRP is a prerequisite for county participation in Maryland's Program Open Space (POS) Localside program *[per Section 5-905(b) (2) of the Natural Resources Article – Annotated Code of Maryland]*, which provides annual grants for the acquisition of land for conservation and park purposes as well as for the development of public recreation facilities. LPPRPs are also used as key sources of information in the preparation of Maryland's Land Preservation and Recreation Plan, which serves as the Statewide Comprehensive Outdoor Recreation Plan (SCORP). Regular five-year updates to the Statewide Land Preservation and Recreation Plan are required to maintain Maryland's eligibility to receive funding from the Land and Water Conservation Fund, a federal program that provides cost-share funding to state agencies for the acquisition, development and planning of public outdoor recreation opportunities. Draft updated LPPRPs are due for submission to DNR and MDP by December 31, 2016. **Revised and county approved final LPPRPs are due to be submitted to DNR and MDP by July 1, 2017.** The next statewide Land Preservation and Recreation Plan is due to be submitted by DNR to the federal Department of Interior in early 2019.

The 2017 LPPRP Guidelines were released in Final Draft form in July 2015 pending the results of the legislatively directed "Comprehensive Workgroup-led Review of State Land Preservation and Easement Acquisition Programs". The Workgroup completed its review and issued their findings and recommendations in December 2015, which resulted in no substantive changes being made to these finalized 2017 Guidelines.

Preparing or Updating LPPRPs for 2017

These Guidelines outline **minimum** planning and documentation requirements to be followed in the preparation or update of an LPPRP. The LPPRP Guidelines have been updated in 2015/2016 for this next planning cycle. The 2017 Guidelines replace the previous Guidelines dated October 2010. The 2017 Guidelines are the first since primary responsibility for preparing the next (2019) Statewide Land Preservation and Recreation Plan was moved from MDP to DNR via statute (*per Chapter 410 {HB 1025} of 2011*), which took effect in 2011.

Updating of these Guidelines was completed through a collaborative process among DNR, MDP and the parks and recreation and planning staff from every county government and the City of Baltimore. State and county staff met through a series of individual meetings and six regional

workshops held across the state. A draft set of Guidelines was distributed for comment to all county staff participating in the process and staff from DNR and MDP, as well as the Maryland Association of Counties' Parks and Recreation Administrators. All comments were considered and Final Draft Guidelines were released for the use of counties and the City of Baltimore in July 2015 and finalized in January 2016.

2017 LPPRP Planning Timeline Recommendation

It is recommended that counties begin the LPPRP planning process as early as possible. County staff have advised DNR and MPD that a minimum of twelve to eighteen months is necessary to gather information, analyze and synthesize data, craft goals and develop strategies, engage the public in the process, draft the plan and usher it through the review and approval process with county or City leadership, prior to final submission to DNR and MDP. ***The 2017 LPPRPs are due, with final approvals from local leadership by July 1, 2017***. Draft reports are due by December 31, 2016. As such, following general timeline for preparing an LPPRP is suggested:

Summer/Fall 2015
Assemble planning team, review Guidelines and develop a general outline of the Plan and timeline for Plan preparation; begin inventory data collection, prepare and open recreational survey to the public;

Winter 2015/Spring 2016
Continue inventory data collection and public engagement, begin level of service analysis using inventory and user demand data, develop and refine overarching goals; begin assembling draft portions of the plan;

Summer 2016
Continue inventory and user needs and demand data collection, level of service analysis and public engagement; refine goals and develop strategies for reaching goals; continue preparation of text, maps, graphics, etc;

Summer/Fall 2016
Complete a first draft of the LPPRP; solicit county internal and public input as needed per county requirements and revise the draft as necessary. Counties should also provide municipalities adequate opportunity to review draft LPPRPs and should consider municipal comments;

Fall/Winter 2016
Submit the draft LPPRP to DNR and MDP for review and feedback by December 31, 2016. Upon receipt of draft Plans, DNR will provide legislators from applicable districts with a copy of the draft LPPRP for their review and comment. DNR and MDP will also review the Plans and provide feedback to the county within 30-45 days of receipt.

Draft Plans should be submitted electronically, via email, to DNR and MDP in either Microsoft Word or PDF formats. If the draft Plan file is too large to send via email, arrangements can be made for submission via CD or another means of electronic transfer. Specific instructions on who to send the documents to will be provided to counties by late 2016.

Winter2016/Spring 2017
Edit and finish the LPPRP. Usher the final Plan through all necessary county approval processes.

July 1, 2017

Final, county approved/adopted LPPRP to be submitted to DNR and MDP. The final submission package must consist of a single, bound hardcopy and single electronic copy (PDF format preferred) on a compact disk. One final submission package must be submitted to DNR and a separate final submission package must be submitted to MDP. Specific instructions on who to send the documents to will be provided in early 2017.

LPPRP Content Overview

Preparation of 2017 LPPRPs should address the items outlined below and described in greater detail in the corresponding sections of these Guidelines:

1. Plan Introduction: Provide a general overview of county geography, population and an introduction to the existing system of preserved lands.

2. Parks and Recreation: Include an updated inventory of assets and user demand information; a level of service analysis to identify deficiencies and opportunities; and strategies for meeting recreational goals, addressing deficiencies, improving and managing county parks and recreation facilities over the next five years.

3. Natural Resource Land Conservation: Update information, analysis, goals and strategies for managing and improving county natural resource conservation land networks.

4. Agricultural Land Preservation: Update data on preserved lands; provide the goals and strategies for improving the local program. Counties whose farmland preservation programs have NOT been certified by MDP and the Maryland Agricultural Land Preservation Foundation will need to provide more information than certified counties.

5. Optional/Other: Consider reviewing relevant topics of significance in the county including but not limited to an economic analysis of parks, recreation and land conservation in the county, discussion of cultural resource preservation, historic preservation, tourism, education and environmental literacy, etc.

Plan Introduction

LPPRPs should include a brief introduction to the Plan that provides pertinent baseline information about the county, its system of public parks and recreation facilities, and preserved natural resource and agricultural lands. Suggested information to include consists of the following:

- General geographic information.
- General population/demographic information.
- Introduction to and map of the entire system of public parks and recreation facilities and preserved natural resource and agricultural land.

Guidelines for Content on Parks and Recreation

LPPRPs should include a summary of the following parks and recreation focused information. Counties should include relevant summary information from existing county plans and other pertinent public information and clearly direct readers to these other plans, program documents, reports or resources that provide more in-depth information.

1. Executive Summary / Overview of the Parks and Recreation System in the County

Include narrative, images, maps and/or other data to provide a general overview of the public parks and recreation system in the county. Counties are encouraged to highlight any major accomplishments or challenges associated with the public parks and recreation system or specific amenities, programs or needs. Explain the environmental, economic and health benefits of maintaining and enhancing parks and recreation systems that provide opportunities and amenities

for both "active" field/court based recreation (such as baseball and football fields, basketball courts, skate parks or aquatic centers) and for "outdoor" or natural resource based recreation (such as trail hiking, boating, hunting or fishing). Discuss community conditions that impact the provision of public parks and recreation amenities within your jurisdiction, whether densely populated and developed urban areas or sparsely populated rural areas.

2. Goals and Objectives for Parks and Recreation

a. General context information: Explain the types of public parks and recreational facilities in the county and the services and benefits they provide to residents and visitors. Focus on county managed infrastructure.
    1. What roles, services and benefits do public parks and recreational amenities and associated programming provide within the county?
    2. Explain why the provision of public parks and recreation facilities is important in the county.

b. County Goals: Define and explain county goals for the provision of public parks and recreation facilities. Provide an update of the county's work to reach the goals established in the 2012 LPPRP for parks and recreation.

c. State Goals: Include the list of state goals for parks and recreation in this section of the county's LPPRP. Describe how county goals complement statewide goals and how the implementation of county goals simultaneously helps implement state goals. If state and local goals differ, please explain how. A list of current state goals is included in Appendix B.

3. Implementing Programs

Provide a list and summary description of programs/funding sources used by the county to help achieve parks and recreation goals. Briefly explain how these programs are used to benefit the public. Examples include: Program Open Space, Rural Legacy, Land and Water Conservation Fund, county ordinances, etc.

4. Inventory of Existing Public Parks and Recreation Facilities

Provide an updated inventory of existing public parks and recreation facilities in the county. All counties and Baltimore City completed this inventory as part of the 2012 LPPRPs and are encouraged to build from those existing data sets. Generally the use of a spreadsheet or database is recommended for compiling and updating the inventory. A sample inventory template is included in Appendix C. In addition to the inventory itself, a summary narrative should be provided that generally describes the county parks system and the different types of recreational amenities and opportunities that are available to the public. The summary should also make note of any land or facilities that have been added to the inventory since the completion of the 2012 LPPRP inventory. All inventories should include the following baseline information:

a. Public Parks and Recreation Properties
    Publically owned by municipal, county, state and/or federal government
        i. Examples include publically owned neighborhood parks, state parks, sports complexes, county recreation centers, greenways, etc.
        ii. Counties are encouraged to utilize the most recent DNR Land Acreage Report to determine the extent of DNR owned parkland in their jurisdictions.

b. Quasi-public and/or privately owned recreational facilities or park lands that are open or available for regular public use:

Properties open to the public for recreational use via legal agreements, Joint Use Agreements, deed restrictions or other covenant, where regular public access for recreational purposes is guaranteed. Such properties may include those owned by land trusts, school properties, etc.

c. Inventory Map

Provide a GIS-based map of the parks and recreation lands and facilities included in the inventory spreadsheet and a brief narrative explaining it.

A list of available GIS datasets for state parks, other DNR owned lands and associated public recreational amenities is included in Appendix G. A list of GIS datasets requested to be submitted by counties with their LPPRPs is also included in Appendix G.

5. Measuring User Demand

Collecting and analyzing a variety of data about the use of existing county public parks and recreational facilities is important in estimating the level of service parks and recreational infrastructure are providing. Thoughtful, planned investment in parks and recreation sites can take place after the county establishes a baseline of data about the locations of amenities in relation to populations and the quantity and types of use that the facilities receive. It is also important to gain an understanding of the quality of a user's experience in order to help identify trends, deficiencies and opportunities for improvements to the parks and recreation system. At a minimum, counties should gather and analyze information through a combination of the means and sources, including those outlined below. Findings from the analysis of the different data sets should then be reviewed and a composite view of the level of service provided by the county parks and recreation system should be provided through narrative, maps and other supporting graphics (These replace the onerous but less-than-helpful data tables from previous LPPRPs). This summary, resulting from your analysis, should note any trends, strengths, weaknesses and opportunities that may impact the implementation of local recreational goals or otherwise influence the management of the county parks and recreation system or capital improvement programming from 2017 – 2022.

a. Public Engagement and Outreach

1. Public Meetings: Public meetings are crucial for engaging interested members of the community. Counties should conduct public meetings as part of the LPPRP planning process and are advised to follow existing county laws, policies and protocols for civic engagement in this public planning process.

2. Survey: Feedback from the users of county parks and recreation facilities and other members of the community should be actively sought and documented as part of the LPPRP planning process. Counties should create and administer a survey which seeks public input on the use of county owned parks and recreation facilities and programming. Surveys do not need to be administered following strict methodology for statistical validation. A summary of survey findings should be provided in the LPPRP and the use of visual aids (graphs, charts, etc.) to help explain findings is encouraged.

i. Survey questions should seek information on the full array of county parks and recreation offerings.
ii. Links to sample surveys can be found in Appendix D. Counties are also encouraged to share sample surveys.
iii. Counties are encouraged to utilize internet-based resources, including free or low cost web-survey hosting services, to help administer surveys and track results.

b. Data on Usage, Demand and Participation Rates
Counties should provide a summary of parks and recreation participation rates, known or estimated facility usage figures and other associated information the county may collect through program registration, field or amenity permitting, ticket sales or other related means that answer the following questions:
   i. How many people are known to use the parks and recreation system and/or specific parks or recreational amenities?
   ii. Can an educated estimate of the potential overall level of casual or non-documented usage of county parks and recreation facilities be deduced?
   iii. Are there unmet needs and demands for additional programs or facilities that are known but not easily identified or quantified by these figures?

c. Interpretation of Studies from Federal, State, Local, Academic or Industrial Sources:
Many government, university and interest groups provide detailed information on parks and recreation issues and trends. Some of these studies and reports are likely relevant to county parks and recreation operations, facilities and planning. Where applicable, counties are encouraged to consider using these resources **to supplement locally sourced data** to inform the LPPRP planning process. Examples of several relevant studies are included in Appendix E. Counties are encouraged to explore any reputable source of information relevant to their parks and recreation programs, management and planning.

6. <u>Level of Service Analysis</u>

An analysis of the level of service provided by public parks and recreation systems is intended to identify areas in the county where additional investment in land or facilities may be needed to meet the needs and desires of users. In completing a level of service analysis for their public parks and recreation systems, counties may elect to use different or additional means of analysis beyond those suggested below; provided that logical justification of the basis of analysis is clearly documented in their Plan. Regardless of the analytical methodology used, the results must clearly indicate any opportunities or deficiencies in the existing recreational system. As proposed these guidelines allow the local jurisdictions the flexibility to use a methodology that is useful for them; provided that it makes the case for how the local jurisdictions will address the recreational needs of their users.

Historically in Maryland this analysis was completed using only a single metric of # acres per 1,000 population; with the state's default goal for all counties and the City of Baltimore to provide 30 acres of parks and recreational land per 1,000 population. Advancements have been made in technology and methods for considering multiple factors (user demand, population density, facility distribution) to identify the level of service provided by parks and recreation facilities since the adoption of the 30 acres /1,000 population acreage goal. Evolving from this single metric to an analysis that accounts for additional factors is essential to improving our understanding of how accessible park and recreation systems are to the public and how well these facilities are meeting user needs. By analyzing and mapping a county's parks and recreation

inventory in relation to population density and taking into consideration the known needs and demands of users (as determined via surveys, participation rate figures, public input, etc.), a more accurate determination of deficiencies in service can be made and better plans formulated to address them; versus reliance on the single acres/population metric.

In seeking to improve our understanding of the level of service provided by public parks and recreation facilities in Maryland, two innovative means for conducting this analysis, that incorporate the use of geographic information systems, are suggested for counties to utilize in preparing their 2017 LPPRPs. Not only do these two methods provide means for analyzing multiple factors impacting the level of service provided by public parks and recreation amenities, they also are used to create maps that illustrate existing conditions and findings. These visual tools can help clearly convey key level of service related information to decision makers and general public.

a. Proximity Analysis
   Conduct a geospatial analysis utilizing the county's inventory of parks and recreation facilities and population data to generally determine where the public can readily access these amenities and where they cannot. Provide a map (or maps) and brief narrative that discusses findings from the analysis and identifies any deficiencies, and consider how the findings should shape the county's goals for parks and recreation. The Department of Natural Resources completed this type of analysis to help gauge the level of service provided by state and national parks in Maryland as part of the 2014-2018 Statewide Land Preservation and Recreation Plan. A link to this Plan is included in Appendix E.

   Information on conducting a proximity analysis is located in Appendix F.

b. Park Equity Analysis
   The Park Equity Analysis is an important new tool for identifying population centers that are lacking access to parks and recreational facilities. Counties are encouraged to use DNR's Park Equity Analysis to prepare a park equity map for inclusion in the LPPRP. The Park Equity Analysis is an interactive, web-based, geospatial and quantitative tool that can aid in identification of areas where underserved populations do not have easy access to parks close to home.

   Additional information, including where to access this tool, is located in Appendix F.

7. <u>Capital Improvement Plan</u>

Based on stated goals and review of analysis, a 5-year parks and recreation capital improvement plan for land acquisition, facility development and rehabilitation priorities must be developed and included in the LPPRP. Counties may choose to also include longer-term planning horizons, but it is not required. It is suggested that counties utilize a spreadsheet for this purpose and include approximate acreage to acquire, number, type and locations of facilities to develop or rehabilitate and estimated associated costs.

Guidelines for Content on Natural Resource Land Conservation

Land conserved for natural resource purposes typically serves multiple functions that benefit people and the communities where they live, work and play. Forests, wetlands, river corridors, open meadows and other landscapes preserved in their natural state provide ecosystem services like filtering water that we ultimately consume, enhancing local biodiversity and providing areas for outdoor recreation.

LPPRPs should include summaries of the following natural resource land conservation information. In providing such information, counties should include text to direct readers to other existing county plans, program documents, reports or resources that provide more in-depth information on this topic.

1. Executive Summary / Overview of Natural Resource Land Conservation in the County

Provide a general overview of the areas preserved in the county for their natural resource and outdoor recreation value, supplemented by any supportive images, maps or other data. Counties are encouraged to highlight any major accomplishments or challenges associated with managing or preserving natural resource lands.

Explain the public benefits of maintaining and enhancing the county's system of natural resource lands and associated outdoor recreation amenities including:

a. What are the existing opportunities and areas in the county for people to connect with nature?
b. Are there opportunities at county parks and recreation areas to offer additional amenities or opportunities to connect people with nature?
    - For example, might there be wetland or wooded areas on parkland, adjacent to some other facility, where a small interpretive trail could be constructed? Is there access to water where stewardship of natural resources might be discussed?

2. Goals for Natural Resource Land Conservation

a. General context: Describe the environmental and social benefits that natural resource conservation land provides for people living and visiting the county.
    - Examples of environmental/social services provided by natural resource lands include natural filtration of air and water, outdoor recreation opportunities, economic and public health benefits, wildlife habitat and biodiversity, etc.

b. County goals: List the county/local goals for natural resource land conservation. Explain why the preservation of land for natural resource conservation is important to the county. Provide a summary update on the status of the county's work to achieve goals for the preservation of natural resource land since the last LPPRP in 2012.

c. State goals: Include the list of state goals for natural resource land conservation in this section of the county's LPPRP. Provide a summary of how county/local goals are complementary or differ from the statewide goals. A list of current state goals is included in Appendix B.

3**.** Inventory of Protected Natural Resource Lands

a. Complete and provide a spreadsheet documenting existing preserved natural resource lands in the county. A sample template is included in Appendix C of these Guidelines.
b. Provide a copy of the county's adopted Tier Map showing Tiers I-IV across the county.
c. Counties may use a different spreadsheet than the template provided; however, at a minimum, it should include all items/information requested in the template.

4. Mapping

a. Mapping: Counties should create and/or utilize any number of maps that may be needed to clearly illustrate and convey the following information related to natural resource land conservation in their county:
    i. Local and State Targeted Growth and Conservation Areas
    ii. GreenPrint areas and county focus areas for natural resource land conservation;
    iii. Publicly owned parcels of land designated for natural resource conservation, greenways, park land or other public open space. Delineate parcels by ownership (federal, state and local);
    iv. Public parks and recreation properties (GIS dataset from the Parks and Recreation Inventory Map). Note if and how parks and natural resource conservation land complement one another. Are trails or other outdoor recreation amenities crossing between parks and conservation lands?
    v. Parcels protected for natural resource conservation purposes through long-term conservation easements, licenses, agreements, etc; that are held by public entities (federal, state or local). Delineate parcels by easement ownership;
    vi. Land preserved by deed covenants, such as homeowners association designated open space, land preserved by land trusts through ownership or easement, etc.;
    vii. Areas where landscape features are preserved or protected from development by zoning or other regulatory programs, such as wetlands, floodplains and steep slopes;

b. A list of available GIS datasets for state parks, other DNR owned lands and associated public recreational amenities is included in Appendix G. A list of GIS datasets requested to be submitted by counties with their LPPRPs is also included in Appendix G.

5. Implementing Ordinances and Programs

Outline the principal implementing ordinances and programs that the county uses to work towards achieving its goals for the conservation of natural resource land. Include a summary list, table or narrative that provides baseline information on these ordinances and programs.

Guidelines for Content on Agricultural Land Preservation

Working agricultural lands in Maryland help define the character of the state's rural areas, provide a number of services and are vital to rural economies. LPPRPs should document and convey essential data and information on local goals for agricultural land preservation and efforts to achieve those goals. Many counties already collect and disseminate key information on agricultural land preservation via their participation in the Program for the Certification of County Agricultural Land Preservation Programs, administered jointly by MDP and MALPF.

The counties with agricultural land preservation programs certified by MDP and MALPF as of July 2015 are Anne Arundel, Baltimore, Calvert, Caroline, Carroll, Cecil, Frederick, Harford, Kent, Montgomery, Prince George's, Queen Anne's, St. Mary's, Talbot, Washington and Worcester.

Counties without agricultural land preservation programs certified by MDP and MALPF as of July 2015 are Allegany, Charles, Dorchester, Garrett, Howard, Somerset and Wicomico.

Counties should address the items noted below through narrative summaries, tables or spreadsheets and maps in their LPPRPs to convey a current "snapshot" of the status of agricultural land preservation in the county. Certified counties can accomplish this in a streamlined manner by including references to their certification plans and reports.

1. Executive Summary / Overview of Agricultural Land Preservation in the County

   Provide a short executive summary, supplemented by any supportive images, maps or other data, to provide a general overview of the county's agricultural land preservation efforts and existing areas of preserved agricultural lands. Counties are encouraged to highlight any major accomplishments or challenges associated with managing or preserving working farms and forests. Explain the public benefits of maintaining and enhancing the county's system of agricultural lands.

2. Goals for Agricultural Land Preservation

   a. County Goals for uncertified counties: Define and summarize county goals for agricultural land preservation. Provide a general update on the status of the county's work to achieve goals for the preservation of agricultural land since the last LPPRP in 2012.

   b. State Goals for uncertified counties: Include the list of state goals for agricultural land preservation in this section of the county's LPPRP (see Appendix B-3). Provide a summary of how county/local goals are complimentary or differ from the statewide goals.

3. Inventory of Preserved Agricultural Land

   Complete and provide a spreadsheet documenting existing preserved agricultural land in the county. A sample inventory spreadsheet is included in Appendix C of these Guidelines.

4. Mapping

Provide a map of agricultural land preserved in the county and any existing Priority Preservation Areas. Preserved parcels on the map should match those documented in the preserved agricultural lands inventory (per Guideline #3, above).

a. In the map legend, distinguish between properties that are publicly owned and those under easements. Disaggregate easement by program, including MALPF, Rural Legacy, CREP, MET, and local PDR/TDR.

b. Explain any differences between properties highlighted in this map and those listed in the associated inventory of preserved agricultural lands in the county.

5. Additional Agricultural Land Preservation Guidelines

a. Counties WITH and WITHOUT agricultural land preservation programs certified by MDP and MALPF:
   i. Describe which strategies or actions presented in the county's 2012 LPPRP have been implemented and what the effect has been.
   ii. Which strategies or actions presented in the county's 2012 LPPRP were not implemented? Why?

b. Only counties WITHOUT certified agricultural land preservation programs:
   i. Has the county established priority preservation areas in its comprehensive plan? Are these areas mapped and is the map included in the comprehensive plan? If so, note where in the comprehensive plan this is discussed and if not, explain why.
   ii. How are the county's goals implemented though its zoning and other land use tools?
   iii. How is the county monitoring and evaluating the effectiveness of these programs?
   iv. What are the findings and conclusions of the most recent evaluation of these programs or ordinances?

<u>Appendices Content:</u>

Appendix A:
State Goals
B-1: Parks and Recreation
B-2: Natural Resource Land Conservation
B-3: Agricultural Land Preservation

Appendix B:
Sample Inventory Spreadsheet

Appendix C:
Sample Survey Questions

Appendix D:
Parks and Recreation Studies to Consider

Appendix E:
Proximity Analysis – Level of Service
Park Equity Analysis Tool

Appendix F:
GIS Data Sharing

Appendix A: State Goals

A-1: State Goals for Parks and Recreation

- Make a variety of quality recreational environments and opportunities readily accessible to all of its citizens and thereby contribute to their physical and mental well-being.

- Recognize and strategically use parks and recreation facilities as amenities to make communities, counties and the State more desirable places to live, work, play and visit.

- Use state investment in parks, recreation and open space to complement and mutually support the broader goals and objectives of local comprehensive / master plans.

- To the greatest degree feasible, ensure that recreational land and facilities for local populations are conveniently located relative to population centers, are accessible without reliance on the automobile and help to protect natural open spaces and resources.

- Complement infrastructure and other public investments and priorities in existing communities and areas planned for growth through investment in neighborhood and community parks and facilities.

- Continue to protect recreational open space and resource lands at a rate that equals or exceeds the rate that land is developed at a statewide level.

A-2: State Goals for Natural Resource Land Conservation

- Identify, protect and restore lands and waterways in Maryland that support important aquatic and terrestrial natural resources and ecological functions, through combined use of the following techniques:
    - Public land acquisition and stewardship;
    - Private land conservation easements and stewardship practices through purchased or donated easement programs;
    - Local land use management plans and procedures that conserve natural resources and environmentally sensitive areas and minimize impacts to resource lands when development occurs;
    - Support incentives for resource-based economies that increase the retention of forests, wetlands or agricultural lands;
    - Avoidance of impacts on natural resources by publicly funded infrastructure development projects; and
    - Appropriate mitigation response, commensurate with the value of the affected resource.

- Focus conservation and restoration activities on priority areas, according to a strategic framework such as the Targeted Ecological Areas (TEAs) in GreenPrint (which is not to be confused with the former easement program also called GreenPrint).

- Conserve and restore species of concern and important habitat types that may fall outside of designated green infrastructure (examples include: rock outcrops, karst systems, caves, shale barren communities, grasslands, shoreline beach and dune systems, mud flats, non-forested islands, etc.)

- Develop a more comprehensive inventory of natural resource lands and environmentally sensitive areas to assist state and local implementation programs.

- Establish measurable objectives for natural resource conservation and an integrated state/local strategy to achieve them through state and local implementation programs.

- Assess the combined ability of state and local programs to achieve the following:
    - Expand and connect forests, farmland and other natural lands as a network of contiguous green infrastructure;
    - Protect critical terrestrial and aquatic habitats, biological communities and populations;
    - Manage watersheds in ways that protect, conserve and restore stream corridors, riparian forest buffers, wetlands, floodplains and aquifer recharge areas and their associated hydrologic and water quality functions;
    - Adopt coordinated land and watershed management strategies that recognize the critical links between growth management and aquatic biodiversity and fisheries production; and
    - Support a productive forestland base and forest resource industry, emphasizing the economic viability of privately owned forestland.

A-3: State Goals for Agricultural Land Preservation

- Permanently preserve agricultural land capable of supporting a reasonable diversity of agricultural production;

- Protect natural, forestry and historic resources and the rural character of the landscape associated with Maryland's farmland;

- To the greatest degree possible, concentrate preserved land in large, relatively contiguous blocks to effectively support long-term protection of resources and resource-based industries;

- Limit the intrusion of development and its impacts on rural resources and resource-based industries;

- Ensure good return on public investment by concentrating state agricultural land preservation funds in areas where the investment is reasonably well supported by both local investment and land use management programs;

- Work with local governments to achieve the following:
    - Establish preservation areas, goals and strategies through local comprehensive planning processes that address and complement state goals;
    - In each area designated for preservation, develop a shared understanding of goals and the strategy to achieve them among rural landowners, the public-at-large and state and local government officials;
    - Protect the equity interests of rural landowners in preservation areas by ensuring sufficient public commitment and investment in preservation through easement acquisition and incentive programs;

- Use local land use management authority effectively to protect public investment in preservation by managing development in rural preservation areas;
- Establish effective measures to support profitable agriculture, including assistance in production, marketing and the practice of stewardship, so that farming remains a desirable way of life for both the farmer and public-at-large.

Appendix B: Sample Inventory Spreadsheet

See the attached LPPRP Inventory Sample Spreadsheet

Appendix C: Sample Parks and Recreation Surveys

The surveys noted below are for example only. Counties should prepare their own survey to seek feedback on their own parks facilities, programs and needs.

Maryland Samples

Washington County Recreation Survey:
http://www.washco-md.net/parks_facilities/pr_survey1.shtm

Howard County Trail Use Survey:
https://www.surveymonkey.com/r/?sm=Ri45QXbAFYFEeCLYLnfuog%3d%3d

Montgomery Parks User Satisfaction Survey:
https://s.zoomerang.com/Survey/WEB22CMYNCAYF4/

Maryland DNR Land Preservation and Recreation Plan Survey 2013 Final Report (Appendix H):
http://www.dnr.state.md.us/land/Stewardship/pdfs/LPRP/Appendix.pdf

Samples from outside of Maryland

Appleton, WI – 6 parks, recreation, facility and satisfaction surveys:
http://www.appletonparkandrec.org/surveys

Columbia, MO – Parks and Recreation Survey:
https://www.gocolumbiamo.com/ParksandRec/About_Us/documents/2015survey_section7.pdf

National Recreation and Park Association – Park and Recreation Month 2014 National Survey Findings:
http://www.nrpa.org/july-National-Survey-Findings/

Winston-Salem, NC Recreation Customer Service Survey:
http://www.cityofws.org/departments/recreation-parks/recreation-customer-service-survey

Appendix D: Federal, State and Other Studies and Information Sources to Consider

State of Maryland

Maryland Land Preservation and Recreation Plan 2014-2018:
http://dnr.maryland.gov/land/Stewardship/LPRP_2014-2018.asp

DNR Owned Lands Acreage Report:
http://dnr.maryland.gov/land/stewardship/land_unit_types.asp

Maryland Trail Atlas:
http://dnr.maryland.gov/land/MD_Trails/Trail_Atlas.asp

Maryland State Park Visitor Use and Services Goucher Poll:
http://www.goucher.edu/Documents/Maryland%20State%20Parks%20Survey%20Release%2012-2-14.pdf

2010 Maryland State Parks Economic Impact and Visitor Study:
http://dnr.state.md.us/publiclands/pdfs/economicimpactstudy2010.pdf

Maryland GreenPrint:
http://greenprint.maryland.gov/

Sustainable Communities:
http://www.mdhousing.org/website/programs/dn/communities.aspx

Federal Government

U.S. Fish and Wildlife Service 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation:
https://www.census.gov/prod/2012pubs/fhw11-nat.pdf

National Park Service Visitor Use Statistics:
https://irma.nps.gov/Stats/

Non-Governmental

American Planning Association – City Parks Forum Briefing Papers:
https://www.planning.org/cityparks/briefingpapers/

Outdoor Industry Association – Research Reports on Outdoor Recreation Participation and Economic Impacts:
https://outdoorindustry.org/research-tools/research-reports/

National Recreation and Parks Association – Various reports, studies and tools including:
Safe Routes to Parks:
http://www.nrpa.org/uploadedFiles/nrpa.org/Publications_and_Research/Research/Papers/Park-Access-Report.pdf

Prescribing Parks for Better Health:
https://www.nrpa.org/uploadedFiles/nrpa.org/Grants_and_Partners/Health_and_Livability/FINAL%20Prescribing%20Parks%20for%20Better%20Health%20Success%20Stories.pdf

Appendix E: Level of Service Analysis – Proximity Analysis and Park Equity Analysis

Proximity Analysis

By more accurately pinpointing the places where parks and recreation facilities are most needed, the proximity analysis is valuable for enhancing the quality of life in existing communities. As a result, it helps local jurisdictions to meet both state and local smart growth objectives. The Department of Natural Resources completed this type of analysis to help gauge the level of service provided by state and national parks in Maryland in Chapter 3 of the 2014-2018 Statewide Land Preservation and Recreation Plan. A link to this Plan is included in Appendix E.

To conduct the proximity analysis, Determine where public parks and recreation sites and/or amenities are located in the county in relation to the population and identify areas where the population has greater or lesser access to public parks and recreational sites. Define a catchment area (set distance from a designated point or points, such as all parks, or individual public aquatic facilities, playgrounds or trailheads) and examine the extent of parks and recreation facilities within the catchment area. Areas found to be outside of catchment areas for a facility should be considered a "gap," where the population may not have easy access to the type of park or recreational facility being examined.

Catchment area size can and should vary depending on the size and population density of areas being examined. The following criteria are suggested for use in defining proximity analysis catchment areas:

c. *Large-scale/rural area/county wide area analysis catchment: 5 miles*
   This distance is suggested because it approximates a 15-minute drive and reflects how far a casual park or recreational facility user may travel by car, public transportation or via bicycle or foot to access a particular park or recreational amenity.

d. *Smaller-scale/urban/ highly developed area catchment: 1/2 mile (or some other fraction of a mile) or a set number of city blocks*
   Within urban or densely developed areas, it is anticipated that a higher number of park or recreational facility users live and/or work within fairly close proximity to public parks and recreation facilities and likely will not rely on an automobile to travel to and from these places.

Parks and recreation facilities to review and map via a proximity analysis should include the following items, as well as additional parks and recreation amenities of higher importance to be defined by each county within their LPPRP:

Entire parks and recreation system – Identify areas where general gaps in access to the public parks and recreation system exist. Gaps in access will be illustrated through the proximity analysis as those areas shown outside of the defined catchment area.

Water Access – Identify areas where gaps in public access to water bodies and waterways exist. Public facilities that provide water access can include beaches, swimming areas, boat ramps and canoe/kayak launches, shoreline or piers open for fishing, etc.

Trails – Identify where gaps in public access to trails may exist. For this analysis, any/all types of trails may be examined separately or as a larger grouping. Types of trails to consider should include natural surface hiking or mountain biking trails, bike paths and rail trails, hard-surfaced

walking paths, equestrian and off-road vehicle trails and paddling/water trails. It is suggested that the catchment area for these linear amenities be set from managed trail heads or approved points of access where users would most likely gain access to the trail.

Picnic Facilities – Identify where gaps in public access to picnic facilities at public parks and recreation facilities may exist. Picnic facilities should generally be considered areas within parks or recreation facilities that provide picnic benches and/or pavilions that can accommodate multiple users or user groups.

Suggested additional public parks and recreation amenities to review via proximity analysis include sports fields or courts, athletic complexes, aquatic facilities, playgrounds, skate parks, hunting or fishing areas, etc.

Park Equity Analysis

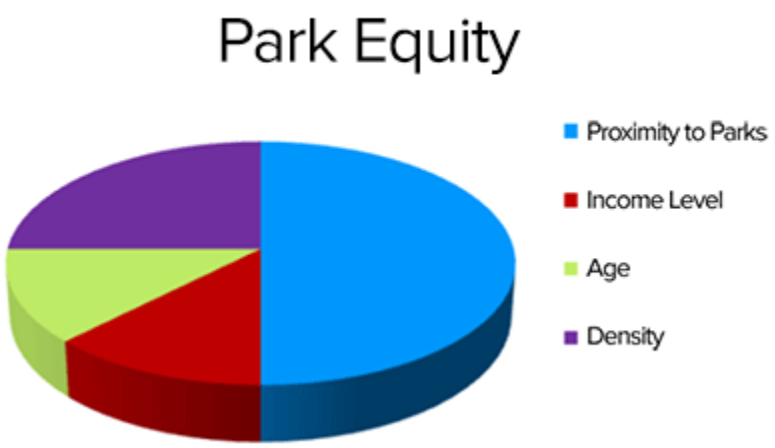
The Park Equity Analysis is an important new tool for identifying population centers that are lacking access to parks and recreational facilities. This tool uses national, statewide and local data in its analysis to illustrate areas of high population density, high concentration of children, high concentration of poverty and low access to public parks and natural areas. Through the Analysis, a combined score is computed for these four data sets and illustrated by census tract on a statewide map. Areas with higher combined scores that are illustrated in red or orange on the Park Equity Map are considered to be those with underserved populations in higher need of additional access to parks and natural areas.

Park Equity Analysis Tool Website: http://www.dnr.maryland.gov/park_equity.asp

Park Equity Model

The Park Equity Analysis is built upon the US Census data analyzed at the Census Tract Block Group level, combined with statewide maps of public and local parks. The model prioritizes underserved areas of Maryland in need of park space by identifying areas with:

- High concentration of children under the age of 17
- High concentration of populations below the poverty line
- High population density
- Low proximity to public park space



Each of these factors is represented in the model as a separate data layer. The layers include Census Tract Block Groups that are scored for the importance of these factors. The layers are added to produce a combined score for prioritizing need for park space.

Half of the combined score is based on these identifying population factors, while the other half is based on geographic proximity to park space and access to trails.

Appendix F: GIS Data Sharing

DNR maintained GIS datasets available for county use:

1. State protected public lands (DNR owned lands and conservation easements)
2. Campgrounds on DNR lands
3. General points of interest on DNR lands -includes playgrounds, picnic areas, scenic vistas/views
4. Public parking areas at DNR lands, including trailhead parking
5. Maintained structures on DNR lands such as restrooms, shelters and pavilions
6. Maintained roads on DNR lands
7. Public land and water trails
8. Public water access locations (boat ramps and canoe/kayak launches)
9. Public hunting areas on DNR lands
10. Public fishing sites

GIS datasets maintained by DNR can be downloaded from DNR's Geospatial Data Center website (http://dnrweb.dnr.state.md.us/gis/data/) and the Maryland GIS Data Catalog (http://data.imap.maryland.gov)

GIS datasets required from counties for future statewide analysis:

1. County protected public lands (county owned parks, natural areas and lands with agricultural or conservation easements)
2. Public land and water trails in county parks and natural areas – preferably with any notes on use restrictions (ex. Hikers only, equestrian, mountain bike, etc.)
3. Parking at county parks and trailheads
4. Public hunting areas in county parks or natural areas (if applicable)
5. County park amenities – such as picnic areas, campgrounds, playgrounds, recreation centers or sports fields
6. Public fishing sites
7. County water access locations (boat ramps and canoe/kayak launches)

Please send datasets to Rodney Vese at rodney.vesejr@maryland.gov