

Appendix 6:

Capacity Analysis for Defined Planning Path





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Section 1.0 Introduction

In 2004, the State of Maryland and local governments committed to include a development capacity analysis in Comprehensive Plans in accordance with a Memorandum of Understanding and an Executive Order from the Governor. This analysis was prepared in support of the *Sustainable Smart Growth Management Strategy* identified in Section 1.0: Land Use Element and as supported by other Plan Elements.

The analysis contained in this section is the *Capacity Analysis Defining the Planning Path* for Queen Anne's County. This analysis further describes the strategy for achieving the goal of *encouraging land uses and infrastructure improvements that will protect our waterways, conserve our natural resources and support sustainable and responsible agriculture* as identified on Map LU-7A: Comprehensive Plan Map: Countywide Land Use and quantified in Table 1-4 contained in Section 1.0: Land Use Element; the capacity for preservation contained in Section 3.0: Priority Preservation Area (PPA) Element; and, the capacity to manage growth outlined in Section 1.0: Land Use Element and Section 5.0: County/Town Planning Framework Element. This analysis provides the basis for growth management and preservation policies contained in the County's 2010 Comprehensive Plan.

A development capacity analysis, sometimes also referred to as "build-out analysis" or "buildable lot inventory" is an estimate of the total amount of development that may be built in an area under a certain set of assumptions, including applicable land-use laws, policies (e.g. zoning) and environmental constraints. This analysis includes the following components:

- Methods and Assumptions for Capacity Analysis; and
- Defining the Planning Path to achieve the vision for Queen Anne's County:
 - Capacity Analysis Summary;
 - Assessment of Capacity Analysis for Preservation (referenced in Section 3.0: PPA Element, Preservation Yield Option 2); and
 - Assessment of Capacity to Manage Growth applying various strategies in support of the rural land use preservation strategy detailed in Section 3.0: PPA Element and the sustainable smart growth management strategy described in Sections 1.0: Land Use Element and 5.0: County/Town Planning Framework Element.

The Maximum Capacity Build-Out Analysis under current zoning is contained in Appendix 5: Build-Out Report. The Maximum Capacity Build-Out results were used as a basis for discussions with the community to assist in *defining the planning path* to achieve the desired future plan.

Section 1.1 Methods & Assumptions for Capacity Analysis

The following methods and assumptions were used in conducting the capacity analysis for the purpose of estimating the theoretical capacity for new residential development within the entire County. This is an analysis of the land area available for residential development, including infill development and residential components as part of mixed-use projects within the designated County Planning Areas.

The following subsections describe methods and assumptions utilized to estimate the County's development capacity applying the *Sustainable Smart Growth Management Strategy* outlined in Section 1.0: Land Use Element.



Section 1.1.1 Method for Identifying Developable Land

The following outlines the methods used to support the capacity analysis defining the planning path for the County:

- Parcel data and tax assessment records maintained by the County were used to determine developable lands.
- Zoning Maps and calculations of zoning yield are used as a guide to where and what type of future development is allowed. The maximum density allowed in each zoning category is identified in Appendix 5: Build-Out Analysis Report.
- Future Town Annexation properties applying *smart growth* minimum density of 3.5 dwelling unit per acre.
- County Planning Areas' lands available for infill development versus and development.
- Major and Minor Subdivisions approved from January 2002 to April 2009 to identify both existing development since the last comprehensive plan update in 2002 as well as new development potential as a result of recent subdivision activity.
- Lands excluded from calculation of capacity:
 - Protected land and lands with environmental constraints.
 - Permanently preserved land.
 - Common use facilities (common areas in subdivisions).
 - Properties with exempt status such as churches, schools, cemeteries, state highway property, county property (public works).

Section 1.1.2 Capacity Analysis Assumptions

This section outlines the various assumptions applied to calculate development capacity for areas outside County Planning Areas, Town Annexation Areas and inside County Planning Areas.

Outside County Planning Areas

The following assumptions were applied to determine capacity for lands outside of County Planning Areas:

1. Agriculture (AG) and Countryside (CS) Zoning

- 1:20 density – maximum of 5 development rights on-site.
- Development on-site is maximized.
- Remaining development rights can be transferred at a 1:8 transfer ratio.
- All lots on-site will be clustered with 15% of net buildable area for each property.
- Lots that are improved and less than 20 acres will be excluded. These lots have no further development rights.
- Only allow minor subdivisions.

2. Suburban Estates (SE) Zoning

- Development capacity based upon 1.25 acre minimum lot size to meet the Environmental Health Department requirements for on-site sewerage disposal systems.

3. Estate (E) Zoning

- Assumes an approximate 2 acre lot.



4. Neighborhood Conservation (NC) Zoning

- Assumes 1 development right per vacant parcel. The total number of vacant parcels is 2,055.
- Approximately 1,612 of these vacant lots are located on Southern Kent Island with documentation of no available new lots with on-site sewerage disposal systems.
- Vacant lots within the NC Zoning Districts may or may not be buildable due to environmental conditions and Environmental Health Department requirements for on-site sewerage disposal systems.

Town Annexation Areas

The following assumptions were applied for Town Annexation Areas:

- Capacity was calculated applying the *smart growth* minimum density of 3.5 units per acre; and
- Existing development capacity was calculated by applying the County's allowable density of one unit per eight acres for County zoned land prior to annexation and Town upzoning.

Inside County Planning Areas

The following assumptions were applied for inside of County Planning Areas:

- Capacity was calculated based upon maximum density of current zoning districts for lands available for new development.
- Infill lots of record were assumed 1 dwelling unit per lot.

Section 1.2 Capacity Analysis Summary

Table 1 on the following page summarizes development capacity when applying the *Sustainable Smart Growth Management Strategy* outlined in Section 1.0: Land Use Element. Development capacity on undeveloped land has been based on the assumptions and maximum development densities outlined previously in Section 1.1.2 of this appendix. This analysis is supported by growth management and preservation policies as outlined in the Assessment of Capacity Analysis for Preservation and Assessment of Capacity for Growth Management contained in subsequent sections of this appendix (Sections 1.3 and 1.4). The results of this analysis clearly indicate that there is sufficient land to accommodate reasonable future growth in Queen Anne's County with the ability to achieve desired levels of preservation of rural lands.

This Capacity Analysis Summary presents a theoretical potential of 19,039 new dwelling units, as shown in Table 1: Residential Development Capacity Analysis Summary. Of those 19,039 new dwelling units, the capacity has been defined for both inside Planning Areas and Outside of Planning Areas.

- 13,443 new dwellings representing growth from infill lots and new lots on undeveloped land inside Planning Areas. Of the calculated capacity:
 - 1,917 new dwelling units estimated from infill development associated with vacant lots of record in existing neighborhoods and completion of construction of residences on lots within recently approved subdivisions;
 - 2,208 new dwellings represent estimated growth on undeveloped land within the County's Planning Areas.
 - 9,318 new dwellings represent growth on undeveloped land that will be newly upzoned within Town Annexation Areas applying *smart growth* minimum density of 3.5 units per acre.
 - Of which approximately 5,266 of those dwelling units on new lots could potentially result from TDRs sent from lands zoned Agriculture (AG) and



Countryside (CS) targeted for permanent preservation as part of the County's Priority Preservation Area (PPA).

- 5,596 new dwellings representing growth on undeveloped land that will be newly upzoned outside of Planning Areas. The breakdown consists of:
 - 2,670 new dwelling units estimated from development within the Agriculture (AG) and Countryside (CS) zoning districts.
 - 2,926 new dwelling units estimated from undeveloped lands within Suburban Estates (SE), Estates (E) and Neighborhood Conservation (NC) zoning districts.

Table 1: Residential Development Capacity Analysis Summary

County/Town Planning Areas	Zoning Designation	Acres	Capacity (Number of New Dwelling Units On-Site)	Capacity for TDRs*
Capacity Inside Planning Areas	Inside Priority Funding Areas (PFAs)			
	• Residential Infill Lots - County Lands	705	1,917	
	• Residentially Zoned County Land	731	2,208	
	Town Annexation Areas	3,072	9,318	
	Subtotal	4,508	13,443	
Capacity Outside Planning Areas	Agriculture (AG) and Countryside (CS)	119,004	2,670	5,266
	Suburban Estates (SE)	939	751	
	Neighborhood Conservation (NC)**	2,575	2,055	
	Estates (E)	240	120	
	Subtotal		5,596	5,266
Total Capacity		122,758	19,039	5,266

*Capacity for TDRs is the number of dwelling units that can be transferred off-site to a designated receiving area for development.

**Includes the 1,612 undeveloped lots of record in the Southern Kent Island Study Area.

The ability to achieve desired levels of growth management and preservation of rural lands outlined in Section 1.3 of this appendix and detailed in Section 3.0 PPA Element while allowing reasonable levels of growth has the potential for:

- Meeting the County's short-term preservation goal of 100,000 acres; and
- Meeting the County's long term preservation goal of approximately 114,861 acres of lands zoned Agriculture (AG) and Countryside (CS) through use of a PPA.



Section 1.3 Assessment of Capacity Analysis for Preservation

The lands within the designated PPA as depicted on Map ESA-10 include lands zoned Agricultural (AG) and Countryside (CS) with the exceptions described in Sections 1.1.1 and 1.1.2 of this appendix. The following option for rural land use preservation is the key preservation strategy supportive of the **Sustainable Smart Growth Management Strategy** identified in Section 1.0 Land Use Element and Section 3.0 PPA Element. The following assumptions are identified for this agricultural/rural lands preservation strategy:

- Option 2 Described in Section 3.0 Priority Preservation Area (PPA) – Application of **alternative agricultural/rural land use preservation strategy** with the following assumptions:
 - on-site development density at 1 dwelling unit per 20 acres on parcels up to 100 acres, with a limit of 5 units, which includes any existing dwellings;
 - farm employee dwelling units are excluded;
 - new lots are clustered with an average minimum lot size that meets the Environmental Health Department requirements where the remaining portion of the parcel is placed in deed restricted open space; and
 - for parcels that are greater than 100 acres, after on-site development at one unit per 20 acres, the remaining acreage is calculated at a density of one unit per eight acres for TDRs in keeping with the PPA Preservation Goal.

Note: The above are assumptions for the purpose of calculating various preservation strategy options as described. The assumption for average size of new lots (1.25 acres) is for purposes of assessing Option 2 and is not an existing or recommended zoning regulation.

Table 2: Capacity for Preservation

Long Term PPA Preservation Potential		Approximate Acres
		PPA Goal – 95,203
(1)	Total Number of Acres within Designated PPA (also approximate undeveloped acreage)	119,004
(a)	Environmentally sensitive areas preserved through zoning and other regulations (acreage is included in lines 1, 2, 3 and 4)	30,604
(b)	75 pending MALPF applications for preservation potential (acreage is included in lines 1, 2, 3 and 4)	11,047
(2)	Preferred rural area land use – 1 unit per 20 acres up to 100 acres capped at 5 units total with dwelling units clustered on an average 1.25 acre lot each* with requirement for deed restricted open space and use of TDRs	114,861
(3)	Yield for potential preservation	114,861
(4)	PPA Preservation Goal	95,203
(5)	Potential Amount Exceeding PPA Goal	19,658

Source: Calculated using datasets provided by Queen Anne’s County, Department of Land Use, Growth Management and the Environment, 2009

*Actual lot size will be based upon environmental health factors.

The application of the **preferred rural land use strategy** described as Option 2 above, results in a yield for potential preservation of 114,861 acres. If the maximum yield were achieved to preserve land under this option, the County has the potential to exceed the PPA goal for preservation by 19,658 acres. This



option supports the County's preservation goal for the PPA and the Sustainable Smart Growth Management Strategy identified in Section 1.0 Land Use Element.

Section 1.4 Assessment of Capacity to Manage Growth

Achieving sustainable smart growth through preservation of rural agricultural land and protection of water resources and environmental sensitive lands can be accomplished through application of a variety of land use/land management strategies. These strategies emphasize infill and redevelopment opportunities, rural land preservation using Transfer of Development Rights (TDRs) and development potential in future Town Annexation areas.

Section 1.4.1 Infill Development Strategy

Infill development strategies support realizing growth in County Planning Areas where public investment has been made for infrastructure. These Planning Areas, also designated as state Priority Funding Areas (PFAs), are required to establish minimum density standards of 3.5 dwelling units per acre. In order to meet agricultural preservation goals outlined in Section 3.0 PPA Element, future development in Queen Anne's County must meet minimum density standards. Infill development is development that takes place on vacant, undeveloped or underutilized parcels within an area that is already characterized by development such as the County's Planning Areas.

Under current zoning, applying the highest permitted density, the estimated potential infill dwelling unit capacity is identified in Table 3 on the following page. Infill dwelling unit capacity accounts for development within County Planning Areas on vacant and unimproved lots in approved subdivisions and new units on undeveloped land. This analysis indicates the potential for 1,917 dwelling units as infill development in existing approved subdivisions and the potential for 2,208 new dwelling units on undeveloped land with a total of 4,125 dwelling units through infill development.

Infill development strategies include redevelopment opportunities. The analysis for this table does not include redevelopment opportunities which could exceed current densities.



Table 3: County Planning Area Infill Dwelling Unit Capacity

County Planning Areas	Planning Area Characteristics	Planning Area Potential Based Upon Current Zoning			
		Vacant Lots in Subdivisions Platted Prior to 2002*	Unimproved Lots in Subdivision Approved Since 2002*	Acres Available for New Subdivision on Undeveloped Land	Potential New Dwelling Units on Undeveloped Land
Chester/Stevensville	Mixed Land Use Patterns (Infill, Redevelopment and Specified New Development)	94	1,769**	306.39	941
Kent Narrows	Mixed Land Use Patterns (Infill and Redevelopment)	0	0	1.05	11
Grasonville	Growth & Development (Infill, Redevelopment and New Development)	21	33	424.01	1,256
Total Capacity of County Planning Areas		115	1,802	731.45	2,208

*Vacant lots in subdivisions and unimproved acre lots of record.

**Four Season's Development Proposal – 1,350 Units are included in the total count.

Notes: Dwelling units can consist of apartments, single-family dwellings, townhouses and condominiums.

All vacant properties associated with subdivisions were estimated to have one development right.

Redevelopment was not considered in this analysis.

Properties that were improved and less than 0.5 acre after wetlands were removed were not considered to have further development potential.

Improved properties with split zoning would be considered to be improved twice. (Approximately 20 split zoned properties).

Section 1.4.2 Rural Land Preservation Strategy Using TDRs

In order to achieve preservation goals established in Section 3.0 PPA Element, an assessment of the ability to successfully manage growth using a viable TDRs program considers the following:

- The potential number of TDRs for areas within the PPA consisting of lands available for preservation zoned Agriculture (AG) and Countryside (CS) approximately 119,004 acres as identified in Table 1-7 of Section 1.0 Land Use Element;
- The potential capacity for Town Planning Areas to receive TDRs as identified in Table 1-8 of Section 1.0 Land Use Element;
- The establishment of minimum densities for zoning districts;
- The capacity for development in County Planning Areas where investment of infrastructure has been made;
- The capacity for municipal growth based upon the expansion of infrastructure; and
- The potential for a new Planning Area(s) where additional infrastructure investment will occur.



Available capacity to preserve rural agricultural lands may be achieved through various options that make use of different ratios for utilizing TDRs to send development rights to Planning Areas identified in the County provided that smart growth Priority Funding Area (PFA) densities of 3.5 units per acre are achieved. For example, a scenario may use a ratio of 50% by-right and 50% TDR or 60% by right units and 40% TDRs. No units may be developed without employing a ratio of by-right development rights and TDRs development rights.

This approach requires the County refinement of the TDR program with the possibility for use of additional tools to realize preservation goals such as:

- Joint Planning Agreements with Towns to establish receiving areas and provide adequate public facilities to support development;
- Land banking of receiving areas;
- Continued use of PDR Program and Critical Farms Program to purchase TDRs;
- Continued use of MALPF funds for preservation; and
- Enhanced PDR and TDR Programs.

The following summarizes the assumptions used to determine the potential number of TDRs for rural agricultural lands zoned Agriculture (AG) and Countryside (CS) under the preferred preservation strategy for agriculture/rural land use preservation:

- **Option 2** – Application of *alternative agriculture/rural land use preservation strategy* with the following assumptions:
 - on-site development density at 1 dwelling unit per 20 acres on parcels up to 100 acres, with a limit of 5 units, which includes any existing dwellings;
 - farm employee dwelling units are excluded;
 - new lots are clustered with an average minimum lot size that meets the Environmental Health Department requirements where the remaining portion of the parcel is placed in deed restricted open space; and
 - for parcels that are greater than 100 acres, after on-site development at one unit per 20 acres, the remaining acreage is calculated at a density of one unit per eight acres for TDRs in keeping with the PPA Preservation Goal.

Note: The above are assumptions for the purpose of calculating various rural land use preservation strategy options as further described in Section 3.0 PPA Element. The assumption for average size of new lots (1.25 acres) is for purposes of assessing Option 2 and is not an existing or recommended zoning regulation.



Table 4: Potential Number of TDRs for Areas within the Designated PPA

Preservation Option	Area Description	Acres	Maximum TDR Sending Rural Agricultural Lands	TDR Sending Rural Agricultural Lands Preservation
Option 1	Acres within Entire Designated PPA Available for TDRs utilizing 1 unit/8 acres	119,004	14,876 DUs	NA
Option 2	Acres Available for TDRs after each parcel utilizes available 1 unit /20 acre development rights (equaling approximately 2,674 development rights)	42,498*	NA	5,266 DUs

**Utilizes a TDR density calculation of 1 unit/8 acres. DU=Dwelling Units.*

Note: The 2,674 development rights were calculated using the County's GIS data including the parcel layer based upon assumptions presented in Option 2. Refer to Map ESA-10: Designated Priority Preservation Areas.

Table 4 identifies the potential number of potential TDRs within the County's designated PPA based upon the previously described strategy options for preservation of rural lands. Table 5 on the following page identifies the potential for TDR receiving capacity within the areas identified by incorporated Towns for annexation. Map LU-6 identifies current incorporated Town boundaries as well as identified annexation areas within Town Fringe Areas.

Section 1.4.3 Development in Future Town Annexation Areas Strategy

Future Town Annexation areas are identified in Town Municipal Growth Areas for the purpose of managing future growth. These areas have been identified as the Town Fringe or areas for future upzoning (an increase in density associated with zoning from County's AG or CS Districts to a Town Zoning District). In order for the County to implement a viable TDR Program, these lands need to be designated as TDR Receiving Areas. Table 5 identifies the potential development capacity or TDR receiving capacity the Town Fringe (future annexation areas).

When comparing the potential TDRs sending from rural agricultural lands applying the options for land preservation in the previous section, the opportunity to receive TDRs within the Town Fringe or Annexation Areas may depend upon a development density and zoning density of 3.5 units per acre. The Town Fringe areas as identified in Town Municipal Growth Elements can easily accommodate the potential of 5,266 dwelling units under Option 2. The maximum estimated dwelling units to be received within the Town Fringe areas is approximately 9,700 dwelling units which falls short of the potential 14,876 dwelling units if all rights are transferred from rural agricultural lands under Option 1. If the desire is to reach the maximum amount of preserved rural land under Option 1, the County's Planning Areas would need to receive approximately 3,879 dwelling units or there would be a need to explore further expansion of Planning Areas or creation of additional Planning Areas; or achieve densities higher than 3.5 within Planning Areas.



Table 5: Potential Development Capacity or TDR Receiving Capacity in Town Fringe (Future Annexation Areas)

Planning Area and Municipality	Column A: Planning Area and Municipal Growth Strategies	Acres in Town Fringe	Column B: Capacity Applying Smart Growth Density of 3.5 Units/Acre (Town Fringe or Annexation Area)	Column C: Development Capacity Allowed under County Density 1 Unit / 8 Acres*	Column D: Net (Column B-C) Dwelling Units
Incorporated Towns					
Centreville	Capacity to receive growth is planned.	1,720 acres	4,967 units*	215 units	4,752 units
Queenstown	Capacity to manage growth is based upon transfer of development rights within Planning Area.				
Church Hill	Capacity to receive growth is planned.	226 acres	791 units	28 units	763 units
Sudlersville	Capacity to receive growth is planned.	345 Acres Inner Loop	1,208 units	43 units	1,165 units
		675 acres Outer Loop	2,363 units	84 units	2,279 units
Millington	No capacity to receive growth is planned in County. Town is also in Kent County.				
Templeville	Limited capacity to receive growth is planned in County. Town is also in Caroline County.	30 acres	105 units	3 units	102 units
Barclay	Capacity to receive growth is planned.	76 acres	266 units	9 units	257 units
Queen Anne	No growth is planned in County.				
TOTAL CAPACITY		3,072 acres	9,700 units	382 units	9,318 units

*Column C reflects the number of potential dwelling units based upon existing density for County zoned land prior to annexation and Town upzoning. (Refer to Section 3.5, Goal 2, Objective 2, Recommendation 2.b)



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