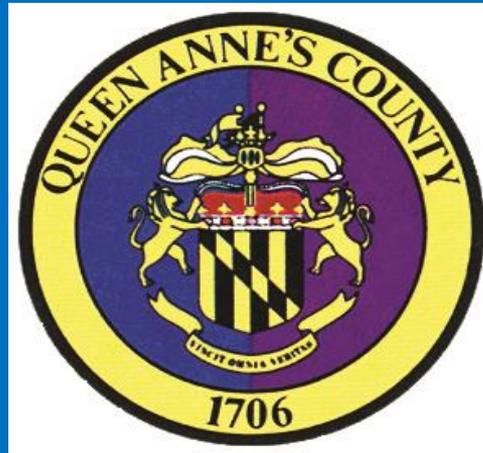


Southern Kent Island Sanitary Project



Maryland Groundwater Symposium
September 30, 2015

www.qac.org/ski

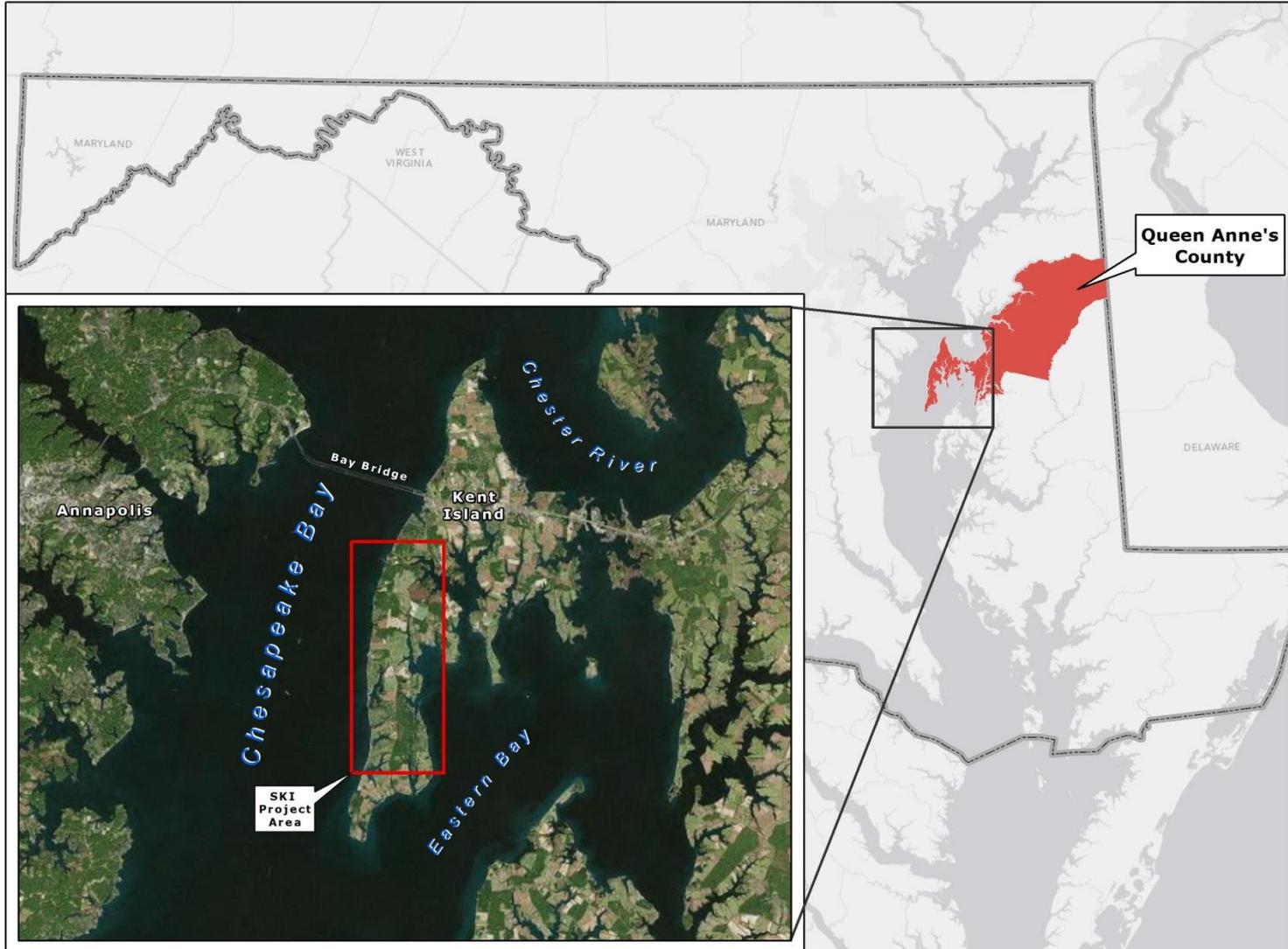
Southern Kent Island Sanitary Project Goal

Correct a longstanding public health problem within existing 1950's & 60's era communities that were developed before modern public health and land use regulations.

- Affordably
- Growth Limits



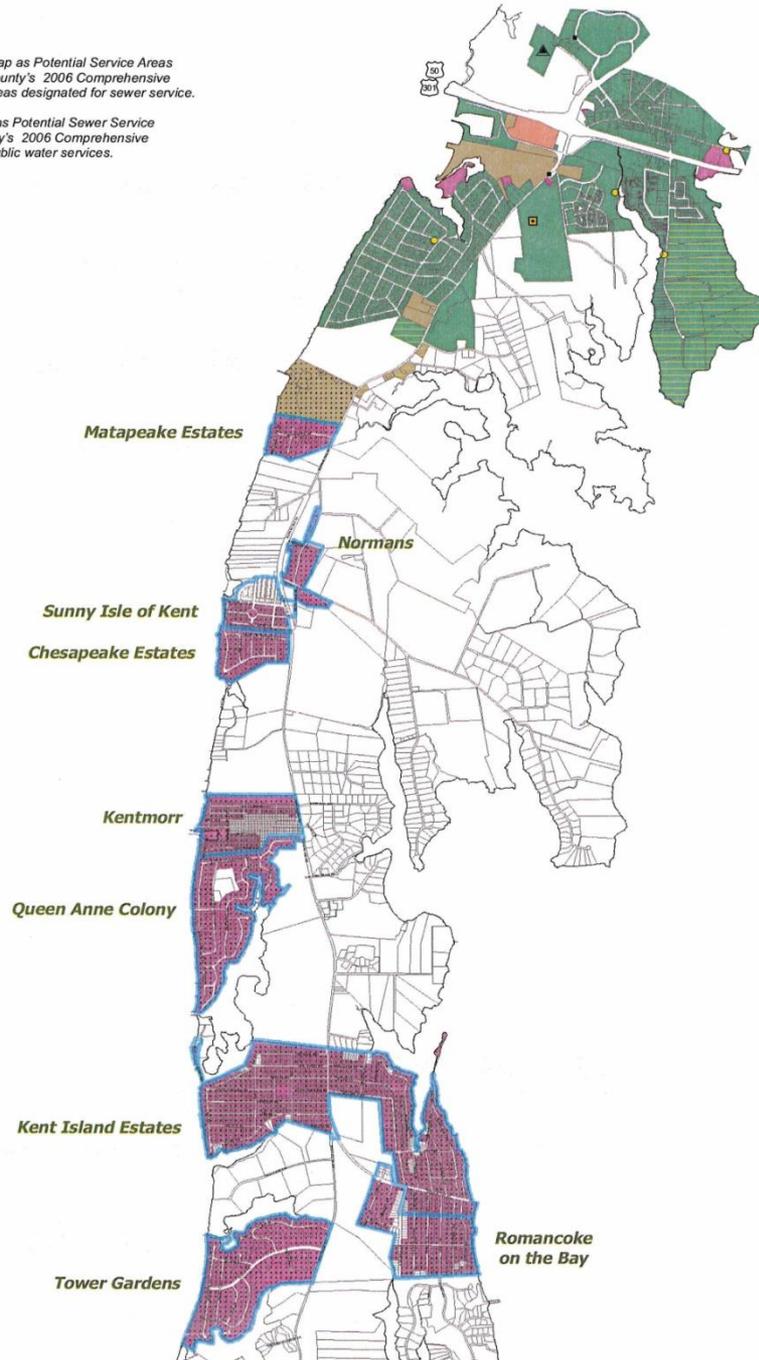
Location Map



South Kent Island (SKI) Service Area

**Note: Areas identified on this map as Potential Service Areas include areas identified in the County's 2006 Comprehensive Water and Sewerage Plan as areas designated for sewer service.*

No areas identified on this map as Potential Sewer Service Areas are identified in the County's 2006 Comprehensive Water and Sewerage Plan for public water services.



Southern Kent Island Sanitary Project Problem

Failing Onsite Septic Systems

- 1,518 existing homes
- 1,600 Vacant Lots of Record

80% of existing homes discharging directly into groundwater

Communities situated miles away from public Sewer Service Area

Not within a PFA or designated Growth Area

Concerns about Growth from a public sewer line extension

Huge project cost with long term impacts

Historical County Efforts

1975 - SKI Communities identified as areas to be served by public sewer in Water & Sewer Plan

1989 - 216 Previously Approved “Perc” tests over-turned

2004 - Reserved 500,000 gallons of ENR treatment capacity

2005 – Attorney General Opinion affirmed specific Service Area Boundaries could be established

2007 - Nationally recognized de-centralized waste disposal expert, Dr. Robert Rubin, concluded “extension of public sewer as most cost effective solution and best for Nutrient reduction”

Historical County Efforts

2008 - Retained engineering/planning firm, JMT to evaluate options for a public sewer system to serve South Kent Island

2010 - Comprehensive Plan adopted reflecting future public sewer service to SKI Communities

2012 – Local Advisory Board concludes that “public sewer collection and treatment is warranted.”

- Limit Infill
- Establish an Economic Benefit Premium (EBP)
- Obtain State Grants

County Efforts - Planning

Project Attributes Identified for Success

- Affordable Cost to Residents
- Minimize Growth Potential
 - Only 9 existing Communities to receive service
 - Limit service within Communities to developed areas
- Unbuildable / interspersed “Infill Lots” within Communities pay more via EBP
- State Assistance still needed

State & County Efforts - Planning

Began regular meetings with MDE & MDP to craft a plan to balance infill development with project financing and costs to residents

- Bay Restoration Fund
- State Revolving Loans

Local Health Department adopts “Holding Tank Policy” for failed septic system areas

- 7 homes and 2 businesses currently on holding tanks
- 500+ additional homes identified for holding tanks



Avoid Holding Tanks

Average House

\$200 - \$240 per Pump Out

\$7,200 - \$8,640 per Year

about \$600 per month

County Efforts - Planning

Retained experienced Expert Counsel

Introduced Lot Consolidation Ordinance #13-24

- Merged adjacent lots under common ownership
- Must conform with existing zoning district NC-20

Final Project Service Area Boundaries established

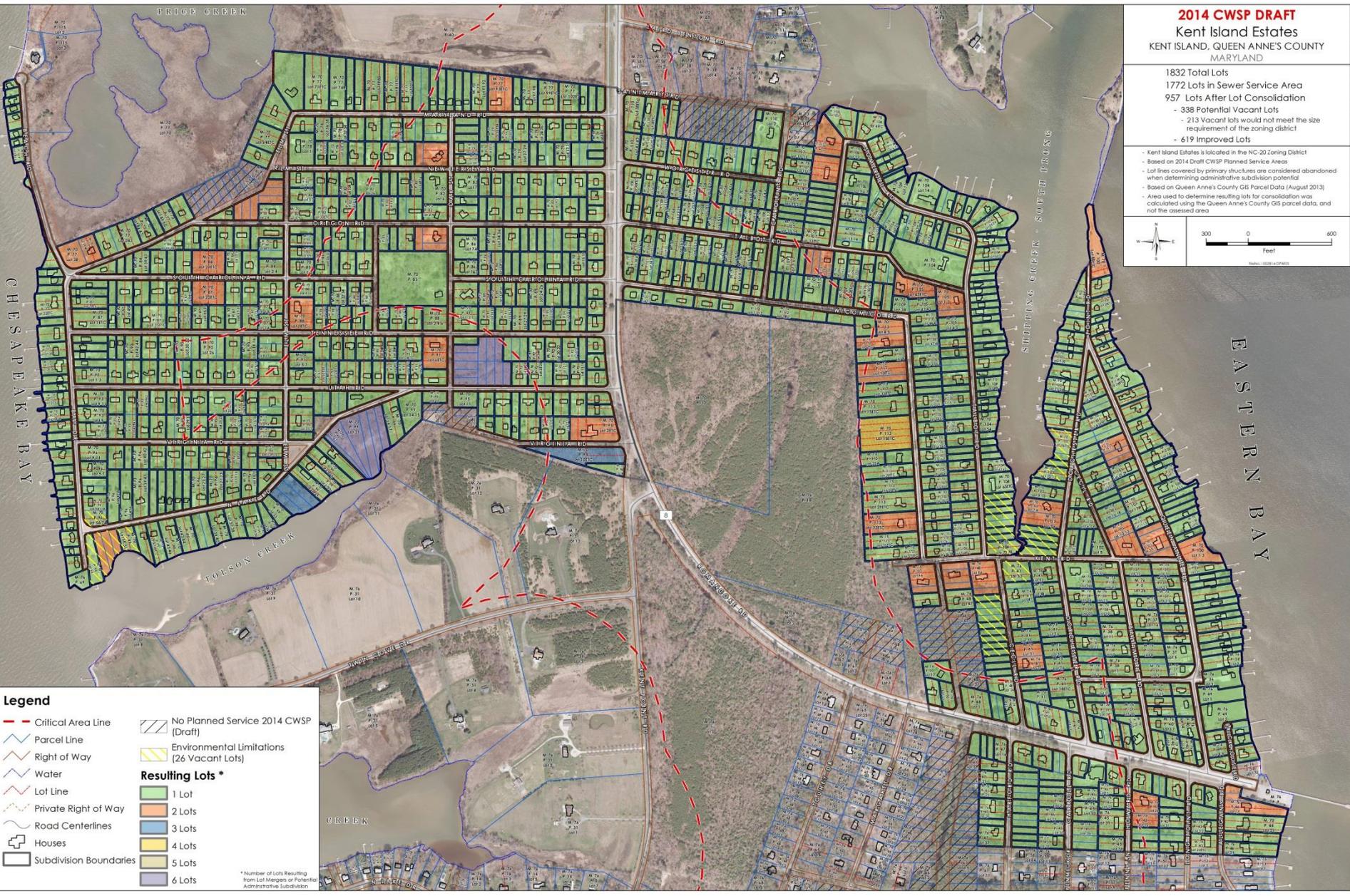
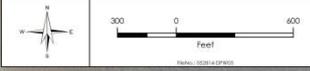
- Authorizing denied access force main
- Only offer service to vacant interspersed lots

Vacant Lot Inventory Reduced - 1,600 down to 632

2014 CWSP DRAFT
Kent Island Estates
 KENT ISLAND, QUEEN ANNE'S COUNTY
 MARYLAND

1832 Total Lots
 1772 Lots in Sewer Service Area
 957 Lots After Lot Consolidation
 - 338 Potential Vacant Lots
 - 213 Vacant lots would not meet the size requirement of the zoning district
 - 619 Improved Lots

- Kent Island Estates is located in the NC-20 Zoning District
- Based on 2014 Draft CWSP Planned Service Areas
- Lot lines covered by primary structures are considered abandoned when determining administrative subdivision potential
- Based on Queen Anne's County GIS Parcel Data (August 2013)
- Area used to determine resulting lots for consolidation was calculated using the Queen Anne's County GIS parcel data, and not the assessed area



Legend

Critical Area Line	No Planned Service 2014 CWSP (Draft)
Parcel Line	Environmental Limitations (26 Vacant Lots)
Right of Way	Resulting Lots *
Water	1 Lot
Lot Line	2 Lots
Private Right of Way	3 Lots
Road Centerlines	4 Lots
Houses	5 Lots
Subdivision Boundaries	6 Lots

* Number of Lots Resulting from Lot Mergers or Potential Administrative Subdivision

2014 CWSP DRAFT

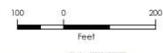
Kentmorr

KENT ISLAND, QUEEN ANNE'S COUNTY
MARYLAND

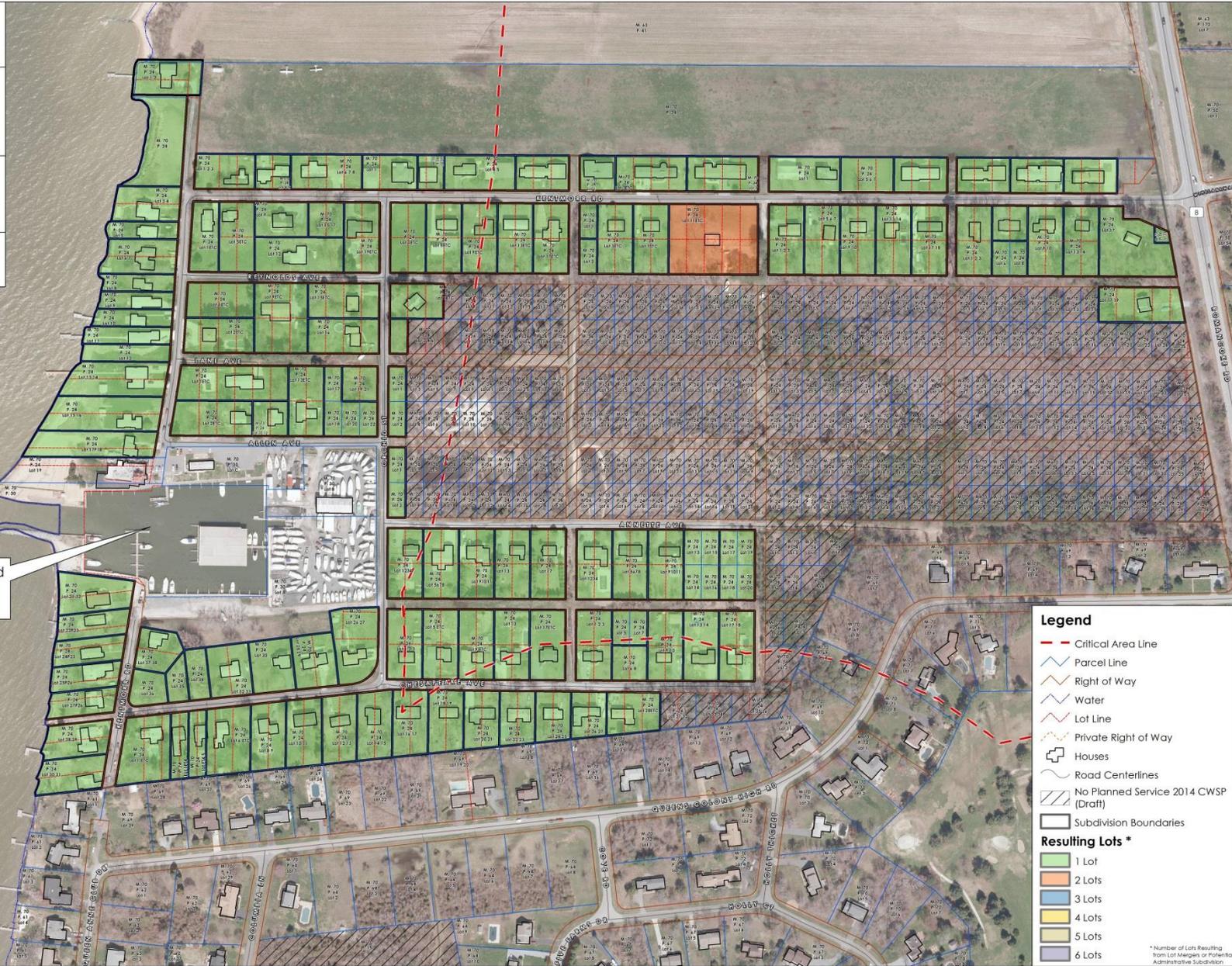
622 Total Lots
345 Lots in Sewer Service Area
125 Lots After Lot Consolidation

- 23 Potential Vacant Lots
- 19 Vacant lots would not meet the size requirement of the zoning district
- 102 Improved Lots

- Kentmorr is located in the NC-20 Zoning District
- Based on 2014 Draft CWSP Planned Service Areas
- Lot lines covered by primary structures are considered abandoned when determining administrative subdivision potential
- Based on Queen Anne's County GIS Parcel Data (August 2013)
- Area used to determine resulting lots for consolidation was calculated using the Queen Anne's County GIS parcel data, and not the assessed area



Commercially Zoned Properties Omitted From Lot Counts



Legend

- - - Critical Area Line
- ~ Parcel Line
- ~ Right of Way
- ~ Water
- ~ Lot Line
- ~ Private Right of Way
- ⊕ Houses
- ~ Road Centerlines
- ▨ No Planned Service 2014 CWSP (Draft)
- ▭ Subdivision Boundaries

Resulting Lots *

- 1 Lot (Green)
- 2 Lots (Orange)
- 3 Lots (Blue)
- 4 Lots (Yellow)
- 5 Lots (Light Purple)
- 6 Lots (Dark Purple)

* Number of Lots Resulting from Lot Mergers or Potential Administrative Subdivision

County Efforts - Planning

Developed concept design using STEP system Technology with consultants H50 Solutions and “Virtual Utilities” Software

Appraisal to set EBP value for vacant lots that become buildable

Introduced Special Benefit Resolution #14-07 with EBP component to levy project costs

County Efforts - Planning

November 2013 – Launched Public Outreach Campaign

- SKI project webpage for public access
- Held Outreach Open House Style Workshops
- Provided Citizens direct access with County and State Officials
- Completed an independent and professional survey of residents – Anne Arundel Community College

State & County Efforts - Planning

MDE sponsored legislation to change state law

Supported HB 11 Legislation to facilitate BRF grant eligibility - Delegate Steve Arentz BILL PASSED!

County held Public Hearings for

- Lot Consolidation Ordinance #13-24
- Special Benefit Resolution #14-07
- Project as required by ratified HB11

THE

1799-2014



STAR

DEMOCRAT

June 4, 2014

SERVING THE MID-SHORE FOR 214 YEARS

EASTON, MARYLAND \$1.00

QA's OKs south KI sewer project

By ANGELA PRICE

baytimes@kibaytimes.com

STEVENSVILLE — Queen Anne's County Commissioners approved the \$53.1 million plan to extend public sewer service to communities with failing septic systems on southern Kent Island in a 4-1 vote May 27, with Commissioner Dave Olds opposing.

The commissioners previously voted to address the three measures related to the project together: the sewer project as a whole; a resolution by the county commissioners, sitting as the Sanitary Commission,

Existing homeowners will see a \$100 a month fee for the next 20 years, while owners of buildable vacant lots would pay \$216 a month under the current economic benefit projections.

to establish a South Kent Island Wastewater Subdistrict, defining its boundaries and financing a public sewage collection and transmission system for it; and County Ordinance 13-24, regarding the use and merger of substandard lots in the neighborhood conservation district. And they voted on

them as one block.

Under Ordinance 13-24, owners of adjoining lots zoned NC-20 (neighborhood conservation) will be required to merge substandard lots, identified as lots consisting of less than 20,000 square feet. The nine communities targeted for sewer expansion, Mata-

peake Estates, Normans, Sunny Isle of Kent, Chesapeake Estates, Kentmorr, Queen Anne Colony, Kent Island Estates, Tower Gardens and Romancoke on the Bay, are all zoned NC-20.

The plan received a favorable recommendation from the planning commission Dec. 12 after more than three hours of discussion and the stated understanding that the ordinance was a necessary first step in the county's long-term goal of obtaining Bay Restoration Fund dollars from the state.

The planning commission recommended final approval of Ordinance 13-24

be delayed until the county commissioners are satisfied that state funding for the extension of sewer for southern Kent Island has been authorized by all relevant state agencies.

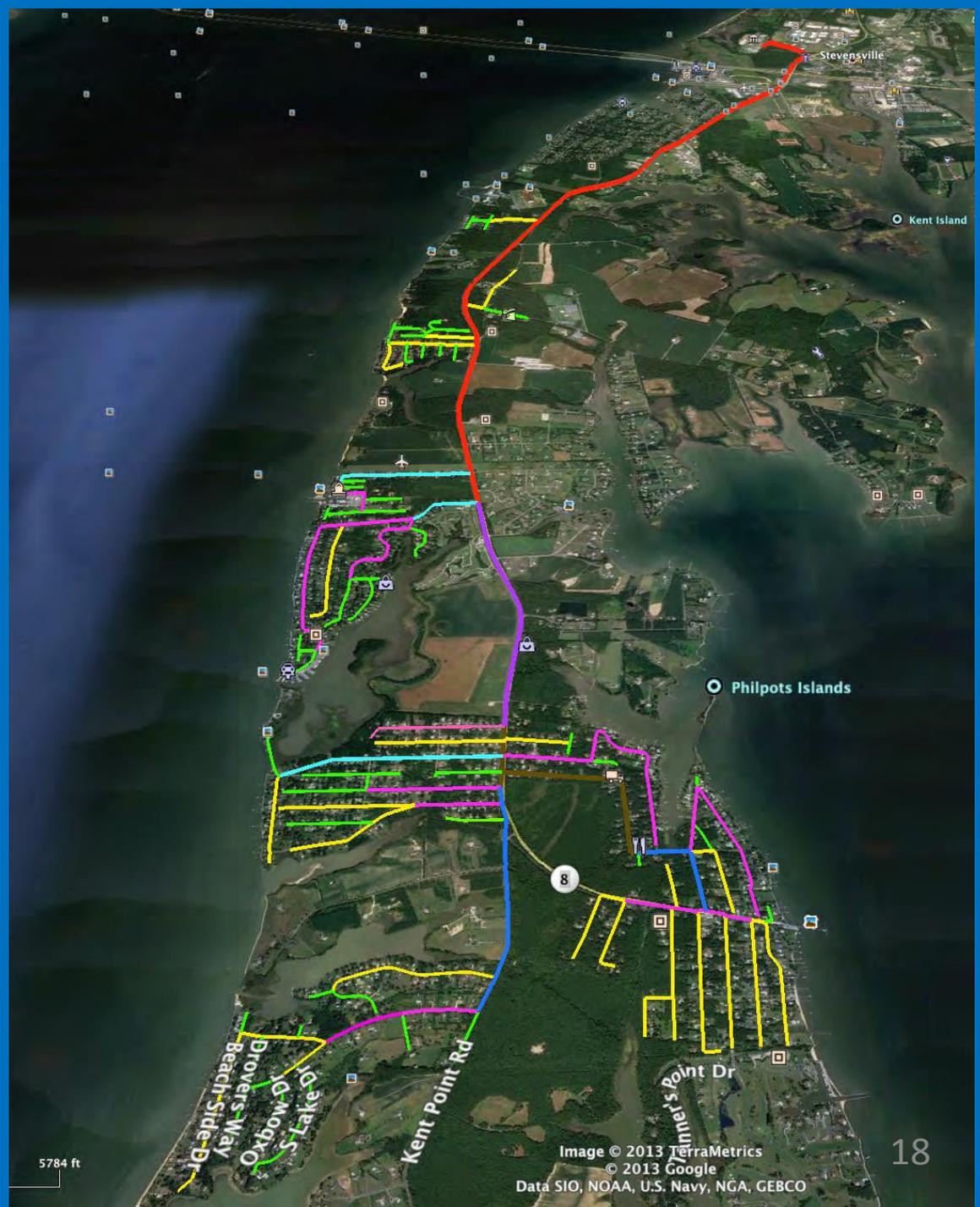
The passage of House Bill 11, signed April 8 by Gov. Martin O'Malley, opened the way for the project to obtain state funding. The new law allows specified fee revenue collected for the Bay Restoration Fund to pay specified debt issued by a local government for the cost of connecting

See **SEWER**

Page A13

Proposed Project System in Virtual Utility

- Red** — 16" Dia.
- Purple** — 12" Dia.
- Brown** — 10" Dia.
- Dark Blue** — 8" Dia.
- Light Blue** — 6" Dia.
- Pink** — 4" Dia.
- Yellow** — 3" Dia.
- Green** — 2" Dia.



Project System

Sepic Tank Effluent Pumping



Project System

STEP System Advantages

- Uses directional drill technology
- Closed system minimizes I & I
- Eliminates need for intermediate pump stations
- Provides emergency storage during power outages
- Service call issues are minor (isolated to individual home vs. hundreds of homes)
- Easy to pinpoint and correct problems
- Pumps are economical yet robust





Design/Construction Schedule

Phase 1: Trunk Line Kent Island Estates & Romancoke	2015 – 2020
Phase 2: Tower Gardens	2019 – 2021
Phase 3: Queen Anne Colony & Kentmorr	2020 – 2022
Phase 4: Chesapeake Estates, Sunny Isle of Kent Batts Neck & Matapeake Estates	2021 - 2023

Southern Kent Island Service Area

Queen Anne's County
MARYLAND



Phase	Design Phase	Construction Phase
Phase 1	2015	2016 - 2020
Phase 2	2019	2020 - 2021
Phase 3	2020	2021 - 2022
Phase 4	2021	2022 - 2023

County Efforts - Financing

Estimated aggregate project cost is \$54 million

- \$16.3 million for wastewater treatment capacity
 - BRF Pays Allocation Fee for Homes
 - Vacant Lots Pay Allocation Fee
- \$37.4 million for wastewater conveyance infrastructure
 - State Revolving Loan Fund
 - Multiple Loans

SKI Financing Template

Existing homes served	1518
Existing non residential properties served	8
Vacant lots served	560 *
Buildable vacant lots served	12
Estimated Total Construction Cost Of Infrastructure	\$37,433,326
Economic Benefit Premium (vacant lots only)	\$25,600 **
Estimated Average STEP System Cost	\$12,500
Allocation (Treatment) Fee	\$ 7,750

Financing Template – Homes

Base Cost *	=	\$ 1,917
STEP Cost	=	\$12,500
Allocation Fee (Bay Restoration Fund Grant)	=	<u>\$ 0</u>
Total cost if paid up front	=	\$14,417

Monthly Debt Service (20 year payoff)	=	\$70
Operations & Maintenance per month	=	<u>\$30</u>
Total Monthly Payment	=	\$100

* Base cost calculated by Formula in Resolution 14-07

Financing Template – Vacant Lots

Base Cost *	=	\$ 1,917
Economic Benefit Premium	=	<u>\$25,600</u>
Total cost if paid up front	=	\$27,517

Monthly Debt Service	=	\$ 134
Operation & Maintenance per month	=	<u>\$ 30</u>
Monthly Payment	=	\$ 164

Additional Fees & Costs **\$\$\$**

Allocation Fee (payable at time of permit issuance)	=	\$ 7,750
STEP System (included in the home's cost)	=	\$12,500
Impact Fee	=	\$11,800
Total Addition Fees & Costs for Vacant Lots	=	\$\$\$ 32,050

Community Revitalization

With SKI Project Implementation

- Holding tanks will be eliminated
- Home sale contracts are no longer denied
- Additions to homes can be approved
- Limited development increases property values

Permanently solve the public health problem

Reduce nutrient loadings – 17,300 lbs. less

Helps local WIP – 33% of State Septic Goals



SKI Future

Phase 1 Design Contracts Authorized Jan. 2015

- 50% Complete

Public Outreach

- Continuing Community Workshops
- Door to Door Campaign

December 2015 Solicit Construction Bids

- Force Main
- Community Mains
- STEP On-Lots Systems



Queen Anne's County Department of Public Works
Todd R. Mohn, PE
Director

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