Advancing environmental stewardship in Anne Arundel County

OSDS Strategic Planning
Task Force Meeting No. 1

July 22, 2019
# Septic Task Force Members

<table>
<thead>
<tr>
<th>Community Representatives</th>
<th>Institution/Community</th>
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<tbody>
<tr>
<td>Jim Doyle</td>
<td>Edgewater Beach Community</td>
</tr>
<tr>
<td>Jeff Holland</td>
<td>West/Rhode Riverkeeper</td>
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<tr>
<td>Jesse Iliff</td>
<td>South River Federation</td>
</tr>
<tr>
<td>Sally Hornor</td>
<td>AA Community College/Severn River</td>
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<tr>
<td>Lloyd Lewis</td>
<td>Mayo Community</td>
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<tr>
<td>Jerry Pesterfield</td>
<td>Heritage Harbor</td>
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<tr>
<td>Eric Devito</td>
<td>Stone Matteis Xenopoulos &amp; Brew, PC</td>
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<tr>
<td>Eliot Powell</td>
<td>Whitehall Development</td>
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<tr>
<td>Ben Wechsler</td>
<td>Linowes and Blocher LLP</td>
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<tr>
<td>Karen McJunkin</td>
<td>Elm Street Development</td>
</tr>
</tbody>
</table>
# Septic Task Force Members

<table>
<thead>
<tr>
<th>Anne Arundel County Representatives</th>
<th>Department of Public Works – Business and Financial Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kim Cluney</td>
<td>Office of the County Executive – Environmental Policy Director</td>
</tr>
<tr>
<td>Matthew Johnston</td>
<td>County Councilmember</td>
</tr>
<tr>
<td>Jessica Haire</td>
<td>Department of Public Works – Engineering</td>
</tr>
<tr>
<td>George Heiner</td>
<td>Department of Public Works – Assistant Director</td>
</tr>
<tr>
<td>Karen Henry</td>
<td>Department of Health – Sanitary Engineering</td>
</tr>
<tr>
<td>Albert Herb</td>
<td>Department of Public Works – Watershed Protection and Restoration</td>
</tr>
<tr>
<td>Erik Michelsen</td>
<td>Office of Planning and Zoning – Long Range Planning Division</td>
</tr>
<tr>
<td>Cindy Carrier</td>
<td>Department of Public Works - Engineering</td>
</tr>
<tr>
<td>Chris Murphy</td>
<td>Department of Public Works - Director</td>
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Task Force Objectives & Schedule
Task Force Objectives

- County Administration and Council considering new septic conversion policies to be introduced in Nov.
  - Options can include
    - Subsidies (ex. Wastewater Management Problem Areas, Critical Areas)
    - Deferred collection of fees, charges, and assessments at property transfer
  - Confirm prioritization of program areas (today)
  - Steer DPW’s development of a conversion policy framework
    - Incentives
    - Subsidies
    - Funding
    - Public Outreach
Task Force Schedule

- Meeting No. 1 – July 22, 2019
  - Prioritization of program areas
  - Re-convene Working Groups as necessary (and available)
- Meeting No. 2 – August 22, 2019
  - DPW draft policy framework
  - Incentive / subsidy alternatives
- Meeting No. 3 – September 19, 2019
  - Proposed funding strategy
  - Proposed incentive criteria
- Meeting No. 4 – October 15, 2019
  - Proposed administrative process for OSDS conversions
  - Project identification and implementation schedule
Task Force Schedule – Working Groups

- Land Use – no further action unless determined in upcoming sessions.
- Fiscal – to support TF Meeting No. 2 discussion
  - Incentive / subsidy alternatives
  - Funding alternatives
- Policy – to support TF Meeting No. 3 & 4 discussion
  - Proposed incentive criteria
  - Proposed administrative process for OSDS conversions

- If any members of Land Use Working Group interested in participating in other working groups, please let us know.
Introductions & Meeting Objectives
Meeting Objectives

Overall objective – obtain feedback on prioritization of program areas.

- Review Task Force Report recommendations and recent progress
- Discuss objectives and schedule for upcoming Task Force meetings
- Review Lessons Learned from other septic conversion programs
- Discuss prioritization of program areas and confirm approach
- Discuss objectives of Customer Survey
03 Task Force Report & Recent Progress
OSDS Planning History

Stages in OSDS Planning Initiatives

OSDS Strategic Planning Work Initiated in Sept. 2018

- 2008 OSDS Study
- Phase II WIP Planning
- Septic Conversion Task Force
- OSDS Strategic Planner
- Develop New Process
Bay TMDL Implementation Stages

- **Phase I Watershed Implementation Plans** – States developed load allocations based on EPA direction

- **Phase II Watershed Implementation Plans** – State governments work with local governments to set target sector loads & develop implementation plans

- **Phase III Watershed Implementation Plan** – States assess progress and refine approaches for achieving 2025 reduction goals.
Anne Arundel Co Phase II WIP Loads - Basis of Planning

**Wastewater Sector**
- Current Enhanced Nutrient Removal (ENR) projects will meet treatment plant allocations

**Stormwater Sector**
- Urban Stormwater to be reduced by 32%

**Septic Sector**
- Septic system loads to be reduced by 46%

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**Table 2.1 Anne Arundel County Total Delivered Nitrogen Final Target Load by Source Sector**

*Source: MAST June 2012

<table>
<thead>
<tr>
<th>Source Sector</th>
<th>2009 Progress (1)</th>
<th>Interim Target Load 2017 (60% of final target)</th>
<th>Final Target Load 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>884,663</td>
<td>717,203</td>
<td>605,563</td>
</tr>
<tr>
<td>Agriculture</td>
<td>176,336</td>
<td>135,187</td>
<td>107,755</td>
</tr>
<tr>
<td>Septic</td>
<td>518,458</td>
<td>376,382</td>
<td>281,664</td>
</tr>
<tr>
<td>Forest</td>
<td>214,444</td>
<td>213,080</td>
<td>212,170</td>
</tr>
<tr>
<td>Wastewater</td>
<td>1,278,983</td>
<td>1,073,965</td>
<td>937,287</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,072,884</strong></td>
<td><strong>2,515,817</strong></td>
<td><strong>2,144,439</strong></td>
</tr>
</tbody>
</table>

(1) The 2011 progress load was not available for all sectors so the 2009 Progress was reported instead.
Conceptual CIP Program

WIP Phase II envisioned connecting up to 20,000 OSDS

Added Assets (Projections)
- 216 miles of gravity sewer
- 65 miles of force main
- 88 miles of low pressure sewer
- More than 80 new pumping stations
- 6,900 new grinder pumps

Significant expansion of current assets

Total project costs estimated at approx. $1.5B
Septic Task Force

- Task Force Final Report issued in June 2018
- Key Recommendations
  - Develop a new septic connection process
  - Develop a prioritization system, focusing on high impact areas
  - Non-mandatory if possible
  - Consider decentralized alternatives
  - Enhance public education & outreach
  - Determine public interest/valuation of sewer

New Concepts & Approaches

Septic Connection Alternatives

- Examining small “minor” treatment facilities for opportunities
- Studying cluster treatment alternatives
- Studying water reuse options

Managed Aquifer Recharge

- Significant Potential to Reduce Pollutant Load (Complement Septic System Conversion)
- Groundwater Recharge—Water Supply Sustainability
- More centralized / less disruptive

Higher Unit Cost  Lower Unit Cost
OSDS Strategic Planner

• Providing expertise in key areas – “Core Competencies” originally identified as essential for developing new OSDS program

• Expertise can be utilized to support new concepts & approaches in addition to development of OSDS Program
Recent Progress

• OSDS Conversion Program Manager under contract September 2018 (HDR)
• Reviewed progress of current program
• Considered integrated strategies to meet nutrient goals
• Adjusted goals based on draft Phase III WIP issued by the State
• Began developing public outreach strategies
• Reviewed approach with MDE

⭐ Developed new targets for septic connections
Wastewater Program Status

- All enhanced nutrient removal (ENR) treatment plant upgrades are operational as of 2017;
- Mayo WRF off-line in 2017
- Treatment plant performance is well below nutrient allocations
- Allows for a smaller OSDS program while maintaining targets.
Integrated Program Concept

- Viewing overall septic program as having three program elements
  - Minor system takeovers (MST)
  - Managed aquifer recharge (MAR)
  - OSDS connection program (OSDS)

- Utilize OSDS program manager to coordinate overall strategy
  - Funding plan
  - Communications
  - Scope input
  - Policy approaches
WIP III Overview

- Updated Chesapeake Bay model
- Overrides WIP II
- Modified sectors, baseline, and target reduction
  - Resulting decrease in County’s septic reduction target

<table>
<thead>
<tr>
<th>Sector</th>
<th>2017-2025 Reduction in # TN</th>
<th>Change</th>
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<tbody>
<tr>
<td></td>
<td>WIP II</td>
<td>WIP III</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-27,432</td>
<td>-45,392</td>
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<tr>
<td>Urban (Stormwater)</td>
<td>-111,640</td>
<td>-20,200</td>
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<tr>
<td>Natural</td>
<td>N/A</td>
<td>-44,127</td>
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<tr>
<td>Forest</td>
<td>-910</td>
<td>N/A</td>
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<tr>
<td><strong>Septic</strong></td>
<td><strong>-94,718</strong></td>
<td><strong>-26,817</strong></td>
</tr>
<tr>
<td>Wastewater</td>
<td>-136,678</td>
<td>-379,310</td>
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WIP III – Projected Nutrient Accounting
(if we do nothing)

- 2017
  - Natural: 444,127 lb/yr
  - Septic: 415,000 lb/yr
  - Wastewater @ 3.25 mg/L: 316,586 lb/yr
  - Total w/o SW: 1,175,713 lb/yr
- 2025
  - Natural: 400,000 lb/yr
  - Septic: 388,183 lb/yr
  - Wastewater @ 3.25 mg/L: 313,500 lb/yr
  - Total w/o SW: 1,101,683 lb/yr
- 2030
  - Natural: 438,278 lb/yr
  - Septic: 409,528 lb/yr
  - Wastewater @ 3.25 mg/L: 346,266 lb/yr
  - Total w/o SW: 1,194,072 lb/yr
- 2035
  - Natural: 434,622 lb/yr
  - Septic: 406,108 lb/yr
  - Wastewater @ 3.25 mg/L: 361,106 lb/yr
  - Total w/o SW: 1,201,837 lb/yr
- 2040
  - Natural: 430,967 lb/yr
  - Septic: 402,688 lb/yr
  - Wastewater @ 3.25 mg/L: 375,946 lb/yr
  - Total w/o SW: 1,209,601 lb/yr
- 2045
  - Natural: 427,311 lb/yr
  - Septic: 399,268 lb/yr
  - Wastewater @ 3.25 mg/L: 390,786 lb/yr
  - Total w/o SW: 1,217,366 lb/yr
- 2050
  - Natural: 423,656 lb/yr
  - Septic: 395,848 lb/yr
  - Wastewater @ 3.25 mg/L: 405,626 lb/yr
  - Total w/o SW: 1,225,130 lb/yr

Δ 100,000 – 130,000 lb/yr (vs. 165,000 – 200,000 lb/yr, ~20,000 septic tanks for WIP II)
Management Strategies

- Management Strategies Developed over 30 years
- Combine to reduce septic program by 72%
- Ranges considered:
  - Stormwater – 30% Equivalent Impervious Area Reduction
  - Onsite Wastewater Management Problem Areas (OWMPA)
  - Small Septic Programs – Adjacent to OWMPA
  - Large Septic Programs
  - Managed Aquifer Recharge – up to 3 Facilities
  - Minor System Upgrades
  - Nitrogen Reducing Units (NRUs) – up to 200/year
Preferred Management Strategy

Minor System Upgrades
$3,000/lb

Septic conversions – 5,400
$7,000/lb
Includes capital connection charge (minimal WLA transfer)

MAR – Patuxent WRF
$2,100/lb
Prioritization of Program Areas
Prioritization of Program Areas

- Purpose
  - Identify conversion areas essential to overall program success
  - Develop definable criteria for setting outreach priorities

- Area groupings and implementation factors considered for prioritization
  - Onsite Wastewater Management Problem Areas (OWMPA)
  - Critical Areas
  - Proximity to existing sewer infrastructure
  - Cost per pound TN
    - Cost to connect a neighborhood or “management area”
    - Total nitrogen removal potential
Prioritization of Program Areas (First 53,000 lb TN Removal)

- Scenario 1
  - 33% OWM Problem Area
  - 33% Critical Area
  - 17% Proximity
  - 17% Cost
  - 15 Management Areas
  - $281M total cost

- Scenario 2
  - 25% OWM Problem Area
  - 25% Critical Area
  - 25% Proximity
  - 25% Cost
  - 17 Management Areas
  - $271M total cost

- Scenario 3
  - 17% OWM Problem Area
  - 17% Critical Area
  - 33% Proximity
  - 33% Cost
  - 23 Management Areas
  - $260M total cost

Top 5 Management Areas Same for Each Scenario
Scenario 1 Prioritization

- Top 5 Management Areas
  - Edgewater Beach (north of airport)
  - Southdown Shores (south of airport)
  - Amberly
  - Shore Points Around Lake Placid
  - Clearview Village
Scenario 2 Prioritization

- Top 5 Management Areas
  - Edgewater Beach (north of airport)
  - Southdown Shores (south of airport)
  - Amberly
  - Clearview Village
  - Shore Points Around Lake Placid

- Remainder of MAs for 53,000 lb TN Reduction
Scenario 3 Prioritization

- **Top 5 Management Areas**
  - Edgewater Beach (north of airport)
  - Southdown Shores (south of airport)
  - Clearview Village
  - Amberly
  - Shore Points Around Lake Placid

- Remainder of MAs for 53,000 lb TN Reduction
Prioritization of Program Areas

- Discussion
  - Does low sensitivity of prioritization variables translate to fairness?
    - Including 4 variables reduces sensitivity of any one factor
    - Practical considerations for extension of infrastructure: Cost and Proximity
    - Environmental benefit: OWMPA and Critical Areas
  
  - Should other factors be included in a second tier of prioritization?
    - Willingness to pay (assumptions based on survey results)
    - Strong property owner interest (similar to current petition process)
Lessons Learned – Other Septic Conversion Programs
Lessons Learned from Other Septic Conversion Programs

- Reviewed 11 septic conversion programs
  - Interviewed representatives from Olympia, WA and Suffolk County, NY
- Survey of policy elements
  - Program drivers
  - Technology preferences
  - Funding / Financial Options
  - Mandatory vs. Voluntary
  - Public education strategies
Lessons Learned – Mandatory vs. Voluntary

- Mandatory programs drive high conversion rates
  - Sarasota / Philippi Creek, Florida
    - Nearly 10,000 OSDS conversions to date (began 2001)
  - Indianapolis
    - 7,000 OSDS conversions from 2009-2013
  - Charlotte County, Florida
    - 4,769 planned connections; 2,455 connected from 2015-2018
    - County Master Plans prioritize mandatory areas

- Voluntary programs have potential to drive high conversion rates, but typically lower
  - Suffolk County, New York (Long Island)
    - Driven by clam industry decline (job losses), OSDS failures from Superstorm Sandy
    - 6,400 connections planned (new program)
Lessons Learned – Policy & Funding

• Prioritization for sequencing and/or eligibility
  • Typically centered on reducing Nitrogen loads
  • Cost, economic development impact also considered

• Property owners’ willingness to pay drives policy approach
  o Suffolk County, NY ballot vote
    • 2 communities passed annual tax ($470, $532) to pay for 5,600 conversions
    • 1 community voted no on $755 tax

• Readiness-to-Serve charges common for voluntary programs
Lessons Learned – Policy & Funding

• Grant & loan funding important and varies widely
  • FEMA, regional watershed restoration funds, SRFs part of comprehensive funding strategy

• Incentives structured depending on programs’ unique financing sources
  • Incentive fills need depending on funding sources (loan, grant, or CIP?)
  • Rebates for recently installed septic systems
  • Long-term financing options (i.e. deferred payments, bond terms)
  • Not “one size fits all”
Lessons Learned – Public Outreach

- Robust Public Outreach campaigns drive program success
  - Charlotte Co, Florida (mandatory program)
    - Educational materials - septic system basics; relationship between nitrogen levels and aquatic hypoxia
    - Trailers on site for in-person response to property owner’s questions and paperwork
    - Economic impact highlighted
    - Links to media coverage help to be transparent
  - Olympia, Washington (voluntary program)
    - Conversion cost components explained clearly on website
    - Interactive map on website
Lessons Learned – Summary

<table>
<thead>
<tr>
<th>Lesson Learned</th>
<th>Strategy for Anne Arundel County</th>
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<tr>
<td>500+ units/yr conversion rate not likely tenable under voluntary program</td>
<td>Adaptive management to maintain sustainable participation</td>
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<tr>
<td>Property owners’ willingness to pay drives policy approach</td>
<td>Evaluate willingness to pay assumptions and use probabilistic model to set cost/incentive structure</td>
</tr>
<tr>
<td>Grant funding important to keep property owner costs down</td>
<td>Engage MDE for Bay Revolving Fund opportunities</td>
</tr>
<tr>
<td>Robust public outreach programs drive success</td>
<td>Strategic communications plan</td>
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Customer Survey
Communications Plan

Communications Strategy

The following tools and techniques will provide a detailed outline of the process used to inform, consult, involve, and collaborate with identified stakeholders.

01 Initiation
- Branding
- Website
- Brochure
- Social media

02 Strategize
- Website
- Speaker's bureau
- Brochure
- Social media
- Media
- Videos
- Bill insert
- Pop-ups/mobile unit
- Guerrilla marketing demo
- Internal quarterly report
- Community blog

03 Develop
- Influencing—updated to be focused and targeted based on the alternatives
- Website
- Speaker's bureau
- Brochure
- Social media
- Media
- Videos
- Bill insert
- Pop-ups/mobile unit
- Guerrilla marketing demo
- Internal quarterly report
- Community blog

04 Optimize
- Strategic communications plan customized to build consent on management alternative.

05 Deliver
- Construction outreach plan focused on directly impacted stakeholders.

Big Ideas
- Pop-ups/mobile unit
- Guerrilla marketing demo
- Hype video
- Community partnerships

Market research survey (statistically significant)
Taskforce/Advisory group

Results/Outcome: _____________________________
Results/Outcome: _____________________________
Results/Outcome: _____________________________
Customer Survey – Objectives & Desired Outcomes

• Objectives
  o Gather a baseline understanding of general attitudes and awareness on water quality and its impact on quality of life
  o Measure willingness to pay by those who may connect
  o Measure willingness to pay by others

• Outcomes
  o Information that will guide development of funding approach and size of incentives/subsidies
  o A better understanding of socio-economic factors to consider (i.e. affordability)
  o Further advance the communication strategy, branding and messaging to customers’ and impacted landowners
  o Aid in sequencing program implementation
Customer Survey Methodology

• Survey Administration
  o Combination of mail, online, and phone
  o Survey tested with small sample of residents before broad implementation
  o Select households receive in mail with postage-paid return envelope
  o Email and follow-up calls concentrated on demographic and geographic areas where response to mail survey is low.
  o Will not survey Bodkin Point

• Survey Analysis
  o 1,200 surveys from septic and non-septic households need to be completed to obtain statistically significant results.
  o Market research firm will analyze results and provide a final report.
07 Decisions & Next Steps
Decisions
Task Force Schedule

• Meeting No. 2 – August 22, 2019
  o DPW draft policy framework
  o Incentive / subsidy alternatives
• Meeting No. 3 – September 19, 2019
  o Proposed funding strategy
  o Proposed incentive criteria
• Meeting No. 4 – October 15, 2019
  o Proposed administrative process for OSDS conversions
  o Project identification and implementation schedule
Next Steps

• Survey issued (OSDS Program Team)
• Evaluate willingness to pay (OSDS Program Team)
• DPW evaluating County contribution
• Prepare for Task Force Meeting No. 2
  • Fiscal group – Range of Incentives & Subsidies and Participation Rates
• Before Task Force Meeting No. 3
  • Policy Group – New OSDS Conversion Process