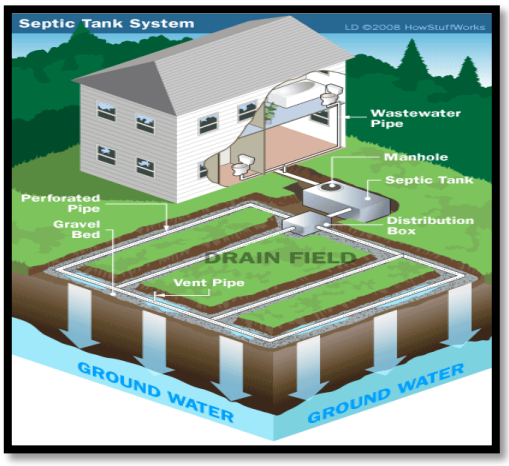
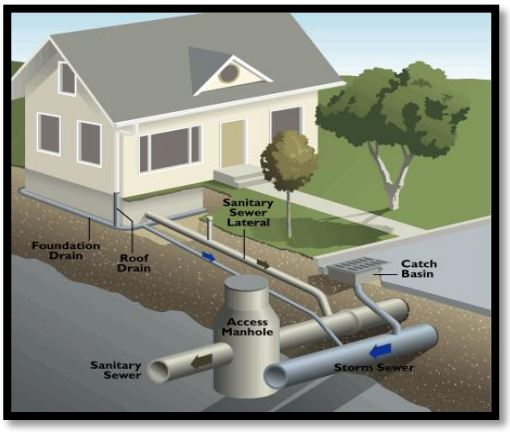
ANNE ARUNDEL COUNTY

SEPTIC TASK FORCE

FINAL REPORT

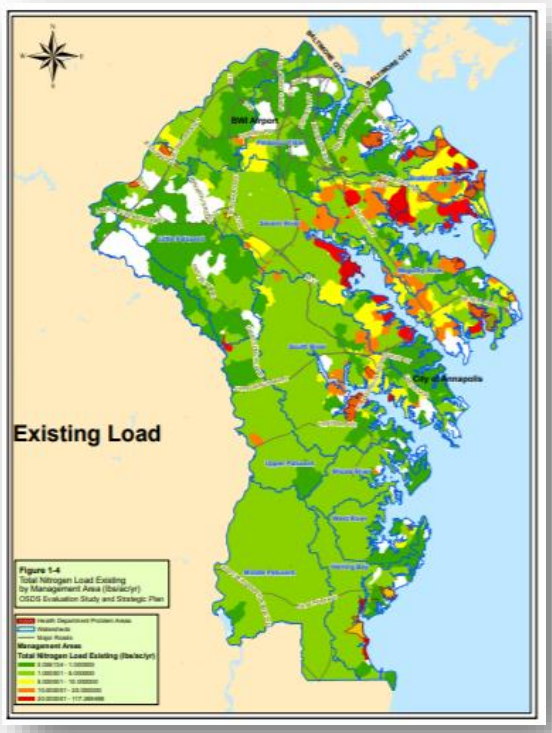
JUNE 2018





I. Background

Development of OSDS Database & 2008 OSDS Study



Following the creation of the Bay Restoration Fund (BRF) in 2006, Anne Arundel County updated databases identifying existing septic systems, also known as "onsite sewage disposal systems" (OSDS), and began to consider long term management options for these systems. In 2008 the Department of Public Works (DPW) completed the Septic Strategic Plan, also referred to as the "2008 OSDS Study".

This study had several objectives, including identifying and categorizing OSDS by assembling a geographical information system (GIS) database of all OSDS throughout the County, developing a prioritization system based on nitrogen loading, developing preliminary treatment strategies and costs, and developing an implementation strategy. The 2008 OSDS study identified over 40,000 OSDS in the County and provided new tools for analyzing and mapping the existing OSDS.

Chesapeake Bay TMDL & Watershed Implementation Plans

In 2010, the Environmental Protection Agency (EPA) issued the Chesapeake Bay Total Maximum Daily Load (TMDL) rule. The Chesapeake Bay TMDL (Bay TMDL) established a "pollution diet" to guide actions to restore water quality in the Chesapeake Bay. Also in 2010, individual states affected by the Bay TMDL were required to submit "Phase I", state-level Watershed Implementation Plans (WIPs). These Phase I plans identified nutrient load reductions by source sectors including wastewater treatment plants, urban stormwater, agricultural, and septic systems.

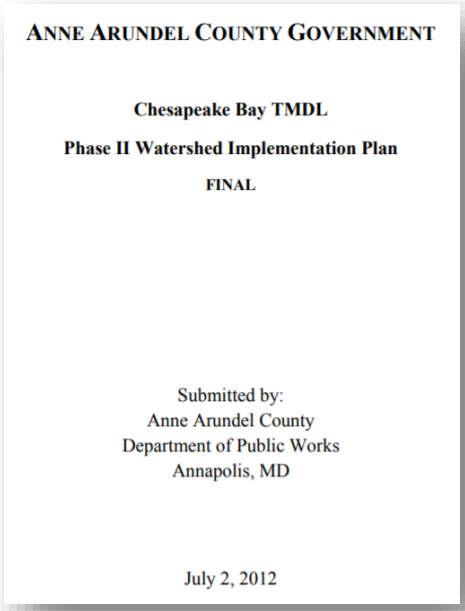
ENVIRONMENTAL PROTECTION AGENCY

[FRL–8955–4]

Clean Water Act Section 303(d): Preliminary Notice of Total Maximum Daily Load (TMDL) Development for the Chesapeake Bay

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice and initial request for public input.



ANNE ARUNDEL COUNTY GOVERNMENT

Chesapeake Bay TMDL

Phase II Watershed Implementation Plan

FINAL

Submitted by:
Anne Arundel County
Department of Public Works
Annapolis, MD

July 2, 2012

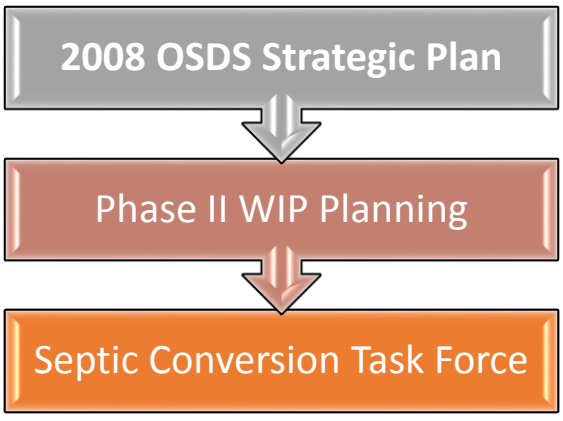
In Phase II, local governments were provided with pollutant load reduction targets that were consistent with the overall load reductions developed at the state level and were required to develop local-level WIPs for the State's review and approval. Anne Arundel County's Phase II WIP was submitted in July 2012.

The Phase II WIP required significant pollutant load reductions in three major areas, wastewater, stormwater (urban), and septic systems. For septic systems specifically, the Phase II WIP proposed a 46% reduction in nitrogen loads. To develop the Phase II WIP, DPW performed several planning studies to examine how a septic conversion program could be implemented through a series of capital projects, prepared conceptual layouts, and developed preliminary costs.

DPW has identified approximately 20,000 properties currently served by septic systems that could be connected to the public system. The preliminary estimates for the entire program approach $1.5 billion, and would represent a significant increase in DPW's assets. Extending or providing public sewer would require an additional 80 sewer pumping stations, 65 miles of force main, 88 miles of low pressure sewer, and 216 miles of gravity sewer.

II. Septic Task Force & Mission

In researching similar efforts in other regions of the country, there are a myriad of possible approaches that could be used to implement a large scale program to connect OSDS to the public system and reduce nitrogen loads. Differences were considered reflective of local and/or regional issues or concerns, and highlighted that there was no "one size fits all" approach to this type of program. To assist with strategic planning efforts developing appropriate policy approaches, DPW convened a Septic Task Force ("Task Force") in late 2016 to assist in the development of the septic conversion program.



The Task Force mission was identified as the following:

- Develop a suite of recommendations that will inform decision makers.
- Identify near-term strategies to support effort.
- Identify long-term strategies and approaches.
- Identify areas requiring additional investigation for County Staff.

Background information, including the 2008 OSDS Study and the County's Phase II WIP were made available to the Septic Task Force for review and consideration. Also made available were preliminary layout drawings prepared by DPW for the potential connection of different OSDS management areas.

III. Task Force Members

Task Force members were drawn from different backgrounds to provide varying perspectives, and were supported by Anne Arundel County Government staff. The Task Force Members are identified below:

Community Representatives

Jerry Pesterfield	Heritage Harbor
Lloyd Lewis	Mayo community
Jim Doyle	Edgewater Beach community
Kate Fritz	South River Federation
Sally Hornor	AA Community College/Severn River
Jeff Holland	West/Rhode Riverkeeper
Kincey Potter	League of Conservation Voters
Eric Devito	Stone Matteis Xenopoulos & Brew, PC
Eliot Powell	Whitehall Development
Ben Weschler	Linowes and Blocher LLP
Karen McJunkin	Elm Street Development

Anne Arundel County Representatives

Chris Phipps	Department of Public Works - Director
Erik Michelsen	Department of Public Works - Watershed Protection and Restoration
Chris Murphy	Department of Public Works - Engineering
George Heiner	Department of Public Works - Engineering
Lynn Miller	Office of Planning and Zoning – Planning Division
Kerry Topovski	Department of Health - Sanitary Engineering
Karen Henry	Department of Public Works – Assistant Director
LaKisha Giles	Department of Public Works – Business & Financial Services

Smaller working groups were established to hold focused discussions on key topic areas. The working groups are identified below:

LAND USE WORKING GROUP	FISCAL WORKING GROUP	POLICY WORKING GROUP
Kate Fritz	Eric DeVito	Jim Doyle
Sally Hornor	Jerry Pesterfield	Ben Wechsler
Lloyd Lewis	Jeff Holland	Kincey Potter
Eliot Powell		Karen McJunkin
COUNTY LIAISON	COUNTY LIAISON	COUNTY LIAISON
Lynn Miller	LaKisha Giles	Karen Henry

IV. Meetings

The Task Force met collectively in six meetings during the first half of 2017. The Task Force meetings were held on the following dates:

Meeting Date	General Topic
February 21, 2017	Introduction and Background Discussion
March 21, 2017	Working Groups and Key Questions
April 18, 2017	Current County Procedures & Case Studies
May 16, 2017	Policy Topics and OSDS Management Strategies
June 20, 2017	Working Group Updates
July 25, 2017	Working Group Discussion and Summary
March 27, 2018	Close out meeting

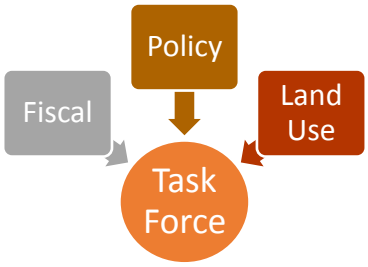
Individual working groups held meetings and/or conference calls independent of the main group. Appendix A summarizes the discussions and analysis related to meetings held by the Fiscal Working Group.

Each collective Task Force meeting covered a general topic where DPW staff presented relevant subject matter, highlighted what was considered to be important information, and facilitated a general discussion.

V. Task Force Discussions

The collective Task Force and separate Working Groups discussed key questions related to policy development. Overall, the Key Questions were identified as follows:

- How and where could residents connect?
- How will the septic conversion projects be financed?
- What policies are needed to develop a successful program?



The key insights provided by the Septic Task Force will be used to assist in identifying which of numerous approaches available appear to be the most appropriate for the residents of Anne Arundel County. It was recognized that due to the complexity and specialized nature of some subjects, Working Groups may not be able to provide detailed or even specific guidance on all subjects.

DPW will be engaging the services of an OSDS Conversion Program Manager in 2018, and will use the feedback and information from the Septic Task Force to develop tasks for the program management team to examine areas in greater depth.

Task Force members were not asked to develop specific statements or measures that would be voted on in a formal setting. Rather, Task Force presentations and separate group discussions were used to provide background on the OSDS in Anne Arundel County, the Bay TMDL program, and the main issues that need to be addressed in developing an OSDS conversion program.

VI. Recommendations Summary

The summary below provides the guidance and recommendations from the Septic Task Force and the respective working groups.

A. Task Force Overall Guidance and Recommendations

Based upon the feedback during the main group meetings and the general discussions, there appeared to be some consensus on the following overall recommendations and guidance related to developing aspects of the septic conversion program.

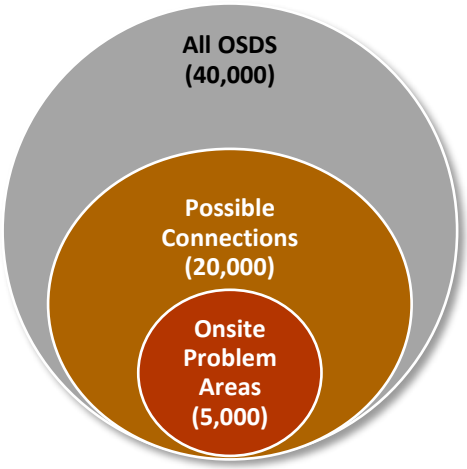
1. Develop a New Process for Septic Connections - Develop a new process similar to the petition process that enables the County to have a more active role in identifying potential projects and determining project boundaries.

- Explore different approaches and options for developing a program that could be more voluntary initially, but could be transitioned to a mandatory program if warranted by lack of progress or by outside direction (i.e. MDE or EPA).
- The County must take a leadership role in designating a "Priorities List" that will receive targeted efforts and attention.
- DPW Engineering must play a more affirmative role in defining petition boundaries – having "gerrymandered" sewer layouts increases overall costs.
- Create options for the community to choose the method for establishing assessment fees, such as on a per property basis instead of only using front footage. In many locations the front foot assessment basis can appear arbitrary or unfair.
- Provide some flexibility to ensure that relatively small changes to the boundaries of project areas do not send the process back to the beginning; boundaries should be adjustable.

2. Ranking & Prioritization System - Develop a ranking and prioritization system that can be used to identify projects and schedules. Identify areas essential to the overall program early in the process and work with these communities. Key factors should include cost effectiveness and receptivity (including the community's history of petitioning for public sewer expansion).

   In general the following priorities are suggested:

   - OSDS in Critical Area (approximately one-third of total)
   - OSDS in Health Department Problem areas (excluding Critical Area and Cluster Treatment Areas)
   - OSDS in "Tier 2" planning areas
   - OSDS in areas identified as cluster treatment areas



3. Obtain Long Term Funding Commitments - Secure long-term commitment from MDE for BRF funding; determine requirements and obligations for obtaining funds. Explore other County funding sources to provide long-term financial support.

4. Public Outreach and Education - Develop a robust public relations and outreach program to engage and educate the public about the need for the program and the benefits of the improvements.

   - County should actively encourage conversions from traditional septic systems to either BATs or public sewer.

5. Revenue Approaches – The Task Force does not recommend pursuing a separate, designated fee, (similar to the stormwater fee) at this time.

6. Cost Sharing & Subsidies – The Task Force recommends sharing costs with stakeholders including County, State, individual homeowners, and other stakeholders where possible in recognition of the fact that the benefits of improved surface water quality are experienced by the broader community.

   The current petition model, wherein all costs are borne by petitioners, leads to costs that in most cases exceed the level that the community is able or willing to support.

   - Consideration should be given to providing subsidies or reducing costs for individual homeowner in cases of financial hardship.
   - Analyze different subsidy strategies to maximize implementation (e.g. uniform vs. targeted subsidies, adjustments over time, etc.)
   - To simplify the decision making for homeowners, consider including "typical" on-site costs with the information provided to the community.
   - Inclusion of the on-site costs with the public infrastructure costs (an "all-inclusive cost") would be ideal, but it is recognized that this would be very difficult to determine because of individual lot variability.

7. Financing Timelines – Consider extending financing timelines. Given that the public sewer connection is essentially permanent, extension of the payment terms appears reasonable since future property owners will have the benefit of the connection.

   - Financial modeling estimates indicated that 40 year payment options reduced annual costs by approximately 15% compared with the more typical 30 year plan.
   - Consider either waiving sewer capital facility connection charges (CFCCs) or allowing the financing of CFCCs over longer periods.
   - Current CFCC is approximately $6,700.
   - Presently two-thirds of the CFCCs can be financed over 30 years, while one-third of the CFCC is finance over five years.
   - Consider 0% financing, liens to properties, or other measures that can take affordability into account.

8. Examine Alternatives to Centralized Public Sewer –

   - Examine in greater depth the opportunity for BAT systems and small cluster systems to support the program in lieu of more expensive sewer extension projects.
   - Outside the Critical Area, a "fee-in-lieu" approach to offset loads may be more cost effective than requiring BAT Systems.

- Work with regulators to establish the credits available for different BAT systems.

9. Transferable Development Rights – Task Force does not recommend pursuing a program relying Transferable Development Right (TDRs) at this time.

    - TDRs were examined previously by the County Office of Planning & Zoning (OPZ) as related to agricultural and rural preservation (the most typical use of TDRs); was not examined specifically for septic communities.
    - Receiving areas would need to be established in the GDP or through legislation.
    - Majority of areas in the County that would likely qualify as potential receiving areas, in terms of development allowances and community support, are already planned and zoned to allow as much density as the market would likely support, at least at the current time.

B. Land Use Working Group Guidance and Recommendations

Individual working groups provided additional feedback on specific discussion items. The Land Use Working Group guidance and recommendations are summarized below:

10. Maintain Consistency with Smart Growth Policies - Implementation should be done in a manner consistent with General Development Plan and Water and Sewer Master Plan Policies.

    - Majority of OSDS "Priority Management Areas" (PMAs) are in Tier 2 (within current sewer service areas) and public sewer extension would be consistent with current planning policies.
    - Exceptions are in the Lake Shore (Bodkin area), Epping Forest and Sherwood Forest areas, and Patuxent Manor community, which are outside current service areas.
    - Current GDP policy is that sewer extension should not be a justification by itself to change the land use plans and zoning of a property or area.
    - Sewer extension through a No Public Service area is permitted as long as the area to be served is planned for service; lines could be designated as "no access" lines in the No Public Serve area to prevent additional connections.

11. Consider the Impact of Sewer Extension as Related to Infill Development –

    - Recent holding capacity estimates indicates there are roughly 2800 remaining residential units that could be developed under current zoning within the 11 PMAs.
    - While some lots may be developed in the future regardless of the availability of public sewer, extension of public sewer to these areas may facilitate infill development.

- Any land us changes related to sewer extensions should be clearly linked to TMDL and WIP goals via clear policy directives in the General Development Plan.

12. Explore "Banking System" for Development Credits – Examine alternatives for developing "banking" credit system that could be transferable across projects. A working group should include OPZ, I&P, DPW, and MBIA to discuss the concept further.

    - Credits are not necessarily limited to nitrogen loading; could be applied towards impact fees or exemptions from certain development requirements
    - For a banking system concept, credits can be "banked" for use on future projects. For example, a developer funds a sewer extension to a nearby septic community, and in turn receives some tangible credit that could be applied to the current development project or a future development project.
    - A similar approach is applied towards road improvements; a developer can make improvements beyond those directly required by the project and receive credits for traffic impact fees. Generally the concept appears to be consistent with the State's "Aligning for Growth" efforts.

C. Fiscal Working Group Guidance and Recommendations

The Fiscal Working Group considered several financing scenarios and provided the following additional recommendations:

13. Develop Program Budget - Develop a program budget for future years aligned with program priorities. General priorities for the budget should be consistent with the ranking and prioritization system

14. Focus on Most Cost Effective Locations – As shown in Figure 1, average costs per parcel for different program levels (5,000 locations; 10,000 locations, etc.) were relatively consistent until the inclusion of the least cost effective 5,000 locations. Where these locations are not critical to the development of other infrastructure, DPW should look for other ways to substitute these locations with more cost effective approaches.

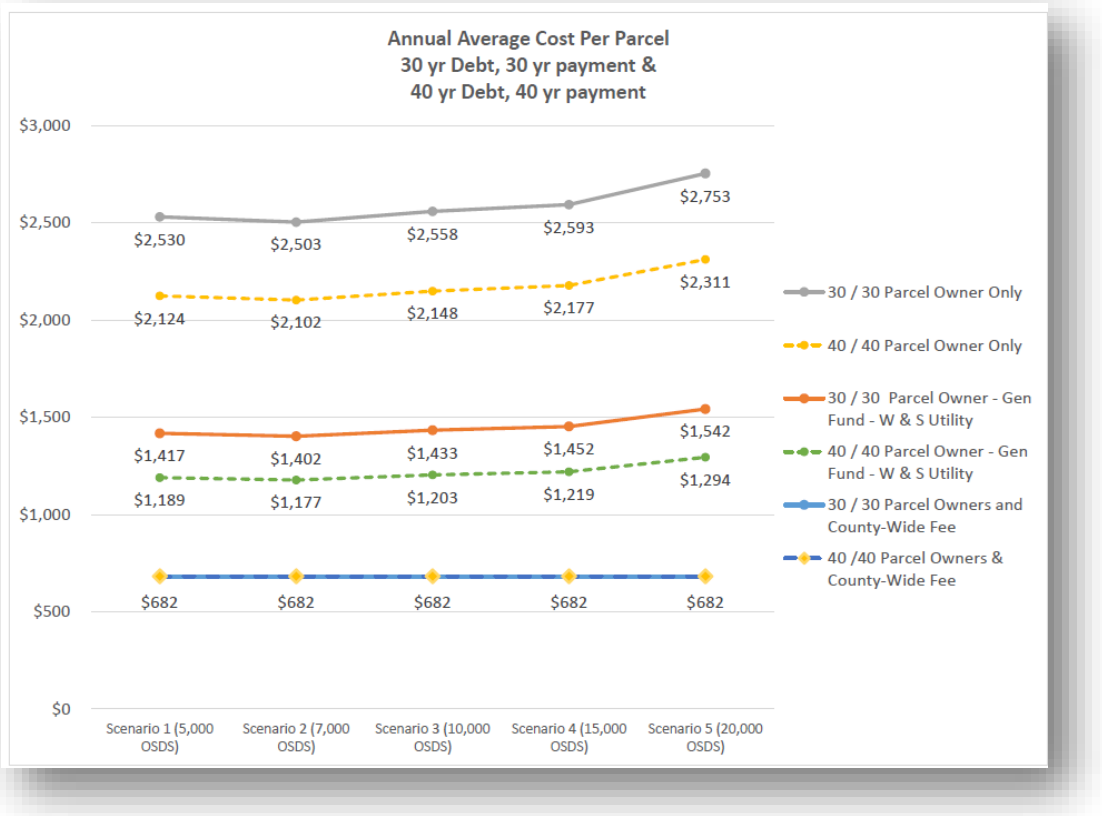


Figure 1 - Impact of Payment Terms & Number of Connected OSDS

15. Consider Funding Subsidies – Recognizing that current process is unaffordable to most homeowners (see Appendix A for more detail). Figure 2 represented a scenario wherein the owner paid 45% of the total and the BRF 25%, with additional General Fund and Utility Fund subsidies of 20% and 10% respectively.

    While there are many additional combinations that can be examined moving forward, provision of additional subsidies from the General Fund, the Utility Fund, BRF, or other sources, may provide an opportunity to reduce the average parcel owner cost to more affordable levels.

Figure 2 - Impact of Subsidies on Parcel Owner Costs

D. Policy Working Group Guidance and Recommendations

The Policy Working Group held several separate meetings and provided the following additional recommendations:

16. Develop Incentive System - The County should develop methods to incentivize the retirement of traditional septic systems in the priority areas.

- Petition process should be initiated at the community level, but perhaps with encouragement from the County through education and outreach.
- Incentives could include targeted financial assistance.
- A well organized and adequately funded public relations/outreach strategy would be helpful to improving outcomes.
- The public needs to better understand the costs of a "do nothing" approach – specifically the eventual costs of new septic and private well.
- For communities that are critical to the overall program develop strategies where voluntary measures may not be enough if progress is lacking.

17. Determine Public Interest or Valuation of Sewer Service – The County should attempt to determine what cost communities may be willing to support when considering a potential project. This may be unique for different communities, but could be useful in gauging the viability of a potential project.

- Provide more information to the public regarding the potential benefits of the project to the community and the Bay overall.
- Consideration should be given to communities that are willing to contribute more.

18. Participation Requirement – While there was no consensus regarding a mandatory vs non-mandatory approach, there was some general agreement that if public funds are covering a large share of the cost, then a more mandatory approach may be acceptable. Conversely, if most of the cost is put on the property owner, a more voluntary approach appears warranted. It was agreed that the current voluntary process, wherein all costs are placed on residents, is not working.

19. Early Hook-up Incentives - Incentives to hook up to public should include giving discounts for residents that complete connections quickly.

20. Transfer of Ownership – Connect a particular element of the program to the sale of the home, such as connection cost or hook-up requirement.

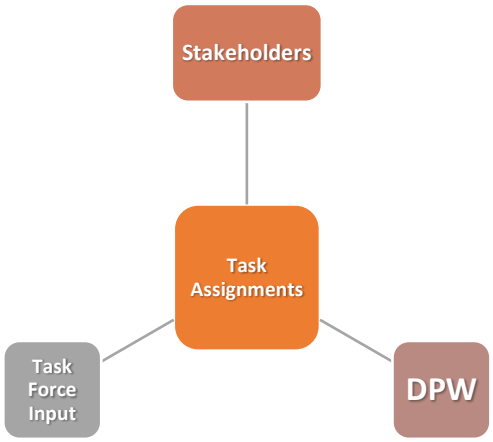
21. Alternative Financing Rate - Consider modifying the finance rate from 8% to a different rate, such as prime +2 at time of the petitioner vote.

22. Pollutant Impact Fee – Consider use of an impact fee tied to nitrogen load for new construction. The fee could be used to subsidize projects and provide an incentive for high impact locations to either connect to public sewer or upgrade existing systems.

VII. Future OSDS Efforts

DPW is working on procurement of an OSDS Conversion Program Manager. The program management team is to have expertise, at a minimum, in the following areas:

- Engineering & Construction
- Financial Planning
- Public & Environmental Policy
- Public Relations / Education
- Program Management



DPW will be using the input from the Septic Task Force, from DPW's previous efforts, and from other stakeholders to develop tasks for the OSDS Conversion Program Manager.

It was suggested that the Task Force be reconvened in the future to review findings from tasks completed by the OSDS Conversion Program Manager.

APPENDIX A

FISCAL WORKING GROUP SUMMARY

Fiscal Working Group Summary

The Fiscal Working Group held several meetings during the latter half of 2017 to discuss alternatives for funding the overall program. Alternatives for developing program funding included examining funding sources, program size, and the impact of changing the time frame on the overall cost to the parcel owner.

Funding Approaches

Several basic funding approaches were identified:

- All funding provided by homeowner (current petition process)
- Funding through homeowner and General Fund
- Funding through homeowner, General Fund, and Utility Fund sources
- Funding through a Countywide fee

It was assumed that funding through the Bay Restoration Fund would remain available and be utilized to reduce the program costs in all scenarios. It was recognized that other outside funding sources may be available, but these were not included in the analyses.

Relative Contributions

While the working group did not deliberate issues associated with equity in depth, several considerations were acknowledged:

- The current petition process model, wherein all costs are born by the parcel owner was resulting in costs that were too high for communities to support.
- While it is a County-wide issue, a broad County-wide fee, while lowering cost to the parcel owner, would also require substantial contribution from residents already connected to public sewer and therefore not contributing to the septic loads.
- The State's Bay Restoration Fund (BRF) should be available to provide a funding source, but the current approach reimburses connections as they occur and would be difficult to utilize for financial planning.
- The County as an entity has an obligation to meet the nitrogen load reductions under the TMDL, therefore the County in general receives a benefit when a connection is made.

Below is an example from one analysis, with an approximate split assumed as shown in Figure 3. While other combinations of relative contributions can be the subject of future examination, the distribution examined lowers the burden on the parcel owner by providing subsidies from other County sources, but owner still requires the owner to make the greatest contribution. The State contribution from the BRF fund is assumed to remain relatively constant at $12,000 per OSDS connected.

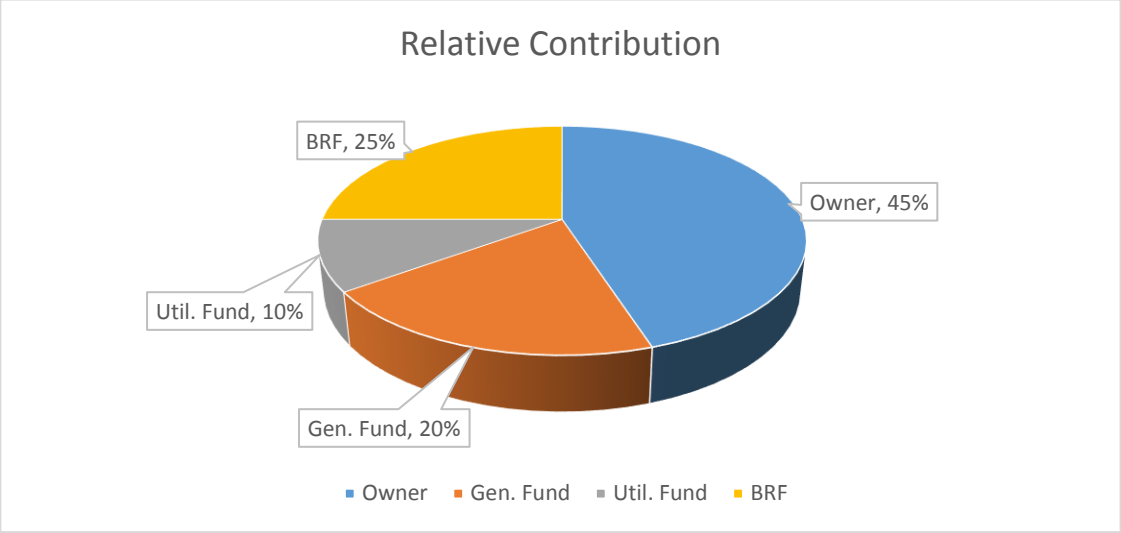


Figure 3- Example of Possible Funding Split

Program Magnitude & Timeline

The overall number of parcels to be connected greatly impacts any annual contribution from the General Fund and Utility Fund. Potential septic connection layouts, identified as management areas, were sorted on a cost per pound nitrogen ($ / lb TN) basis and program magnitudes of 5,000; 7,000; 10,000; 15,000; and 20,000 were examined.

The program time frame was also examined over 30-year and 40-year time spans. In these analyses, a 30 year debt was assumed with a 30 year payback period, and a 40 year debt was assumed with a 40 year payback period. The results of the analysis are provided in the tables below and in Figure 4.

Table 1 - Combined Contributions - 30 year Timeframe

Annual Contributions	Annual Property Owner Contributions	30 / 30 Annual General Fund Support	Annual Bay Restoration Fund Support	30 / 30 Total Other Funding Support (Utility Subsidy)	Total
Scenario 1 (5,000 Parcels)	$3,508,146	$1,879,364	$2,000,000	$877,036	$8,264,546
Scenario 2 (7,000 Parcels)	$5,007,297	$2,682,480	$2,800,000	$1,251,824	$11,741,602
Scenario 3 (10,000 Parcels)	$7,129,364	$3,819,302	$4,000,000	$1,782,341	$16,731,007
Scenario 4 (15,000 Parcels)	$11,000,837	$5,893,305	$6,000,000	$2,750,209	$25,644,351
Scenario 5 (20,000 Parcels)	$14,946,339	$8,006,967	$8,000,000	$3,736,585	$34,689,891

Table 2- Combined Contributions - 40 year timeframe

Annual Contributions	Annual Property Owner Contributions	40 / 40 General Fund Support	Annual Bay Restoration Fund Support	40 / 40 Total Other Funding Support (Utility Subsidy)	Total
Scenario 1 (5,000 Parcels)	$3,357,933	$1,798,893	$2,000,000	$839,483	$7,996,309
Scenario 2 (7,000 Parcels)	$4,792,893	$2,567,621	$2,800,000	$1,198,223	$11,358,737
Scenario 3 (10,000 Parcels)	$6,824,097	$3,655,766	$4,000,000	$1,706,024	$16,185,887
Scenario 4 (15,000 Parcels)	$10,529,800	$5,640,964	$6,000,000	$2,632,450	$24,803,214
Scenario 5 (20,000 Parcels)	$14,306,362	$7,664,123	$8,000,000	$3,576,591	$33,547,076

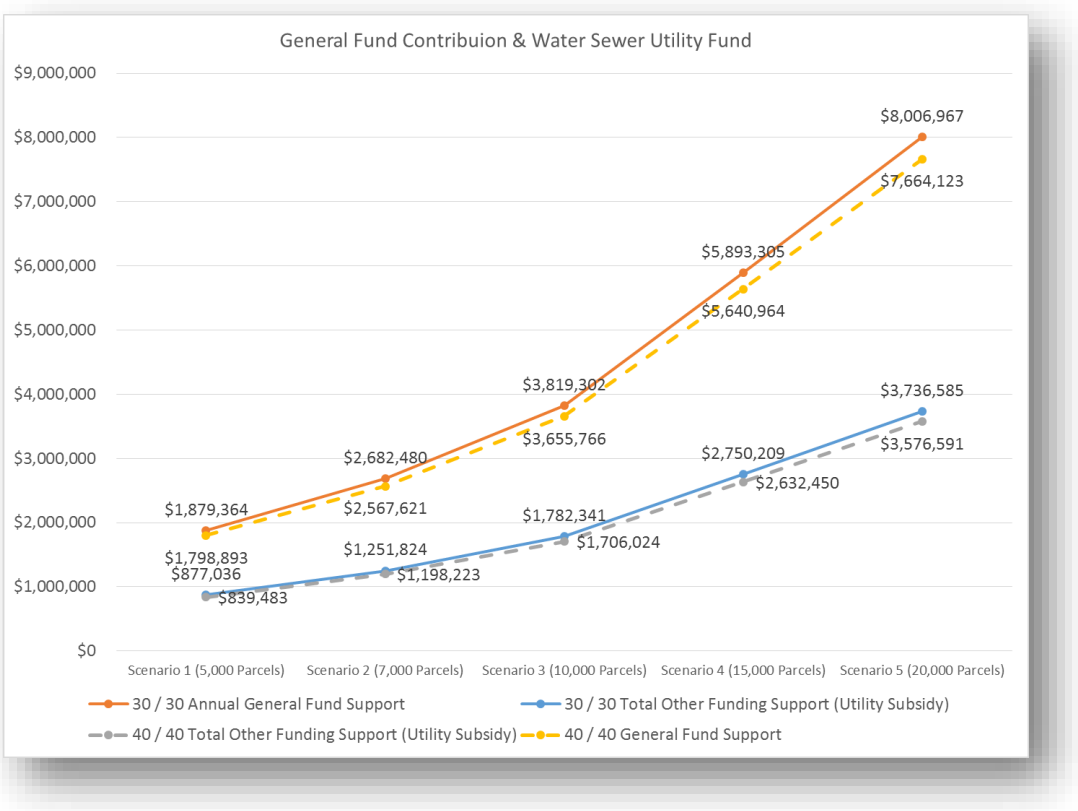


Figure 4 - Effect Program Size of Level of Subsidy

Preliminary Findings

Overall the Fiscal Working Group considered the contribution levels identified for the General Fund and Utility Fund to be feasible, provided that the program magnitude was based on a smaller overall program. Any additional outside funding sources could further reduce the overall program costs or enable additional locations to be added.

While further and more detailed financial planning is necessary to develop the program, the Fiscal Working Group was of the opinion that a financially viable program could be developed. It was recommended that the program priorities be set out as noted in the main document, with the highest priorities being the OSDS in the Critical Area, those located in the Health Department's Onsite Wastewater Management Problem Areas, and other areas known to have failing septic systems.