Wastewater Infrastructure Policy Working Group
November 18, 2021, 10 a.m. to 12 p.m.
Meeting Summary

Meeting Location:
Virginia Department of Health
5th Floor Main Conference Room
109 Governor Street
Richmond, VA 23219

Virtual:
Virtual meeting access via WebEx platform.

List of Attendees:

Working Group Members

David Paylor,
Director
Virginia Department of Environmental Quality (DEQ)
Chair

Stephanie Hamlett
Executive Director
Virginia Resource Authority (VRA)

Jay Grant,
Director of Outreach, Planning and Compliance
Virginia Department of Housing and Community Development (DHCD)

Lance Gregory,
Division Director
Virginia Department of Health (VDH)
(Designee)

Other Participants

Karen Doran, Program Manager, Office of Clean Water Financing and Assistance, DEQ
Danna Revis, President Elect, Virginia Onsite Wastewater Recycling Association (VOWRA)
James Grandstaff, Henrico County Public Utilities
Brent Hunsinger, Friends of the Rappahannock
Elizabeth Andrews, Director, Virginia Coastal Policy Center at William and Mary
Gabriel Irigaray, Roanoke Valley Alleghany Regional Commission
James Dillon, Technical Assistance Provider, Southeast Rural Community Assistance Project (SERCAP)
Jimmy Adkins, Lenowisco Planning District Commission
John Bateman, Northern Neck Planning District Commission
Julie Henderson, Director, Office of Environmental Health Services (OEHS), VDH

Karri Atwood, Legal Affairs, OEHS, VDH
Katie Sallee, Special Assistant for Policy and Communications to the Secretary of Natural Resources
Molly Mitchell, Center for Coastal Resources Management at the Virginia Institute of Marine Science
Patrick Fanning, Chesapeake Bay Foundation
Tanya Pettus, Department of Professional and Occupational Regulations
Luke Peters
Michelle Gowdy
Mike Ritchie

1. **Call to Order, Welcome and Introductions**

Director Paylor welcomed the Working Group and stakeholders.

2. **Review summary from July 12, 2021 meeting.**

Director Paylor asked if there were any comments or edits to the previous meeting summary.

There were no suggested edits.

3. **New Business**

   i. **Report out of feedback from regional roundtable discussions. (Lance Gregory)**

Mr. Gregory shared a summary of feedback from the three regional roundtable discussions held in September 2021 (see attached). He noted that the feedback is included in the draft report to the general assembly. The feedback was grouped under four primary question:

- How to promote public education about the importance of adequate wastewater treatment?
- How to encourage collaboration among, local, state, and federal government entities, including consistent collaboration and coordination of grant requirements and timelines?
- How to endorse community-based and regional projects as opposed to cumulative and repetitive site-by-site individual solutions and integrated solutions across sewer and onsite wastewater treatment systems?
- How to support prioritized, focused and innovative uses of state and federal funding to address needs determined pursuant to the wastewater infrastructure needs assessment required under § 62.1-223.3.

   ii. **Update on wastewater infrastructure needs assessment. (Karen Doran)**

Ms. Doran provided an updated on the wastewater needs assessment, required pursuant to § 62.1-223.1-3 of the Code of Virginia (see attached presentation). The needs assessment was included in the legislation establishing the Commonwealth's policy to prioritize universal access

to wastewater treatment that protects public health and the environment and supports local economic growth and stability.

Ms. Doran note the Code requires DEQ and VDH to work with stakeholders to determine the estimated funding necessary to implement the Commonwealth's policy, specific to needs not eligible for Water Quality Improvement Fund grants. The first report is due to the General Assembly by July 1, 2023; with additional assessments conducted every four years thereafter. She noted the next steps for DEQ and VDH are to: i) develop a needs survey and outreach plan; ii) implement the outreach plan; iii) implement the needs survey; iv) collect and analyze the date; and v) then develop the report.

iii. Review and discuss initial draft first annual report for submission to the Governor and General Assembly. (Lance Gregory)

Mr. Gregory walked through the initial draft of the Working Group's report to the Governor and General Assembly (see draft attached). He noted that draft was based on an early draft report created by the initial Wastewater Infrastructure Workgroup in 2020, with revisions to update the Working Group's activities in 2021. Mr. Gregory requested feedback from VRA, DEQ, and DHCD on recommendations to move forward from the working group.

4. Presentation by Karen Doran and Lance Gregory on American Recovery Plan Act (ARPA) funding for wastewater infrastructure.

Ms. Doran first provided a presentation updating the Working Group on DEQ's ARPA funding (see attached). DEQ receive funding for three separate projects: i) $75,000,000 for septic, straight pipe, and sewer collection system repair, replacement, and upgrades; ii) $125,000,000 for combined sewer overflow grants to Alexandria, Lynchburg, and Richmond, and iii) $100,000,000 for nutrient removal projects and infrastructure improvements in the Town of Pound and City of Petersburg.

Ms. Doran noted the funds must be obligated by December 31, 2024, and expended by December 31, 2026. DEQ has develop draft implementation plans for the three funding projects, and the plans are currently under review.

Mr. Gregory then provided a quick updated on VDH's ARPA funding. VDH received $11,500,000 to fund improvements to well and septic systems for homeowners at or below 200% of the federal poverty guidelines. This funding will be used to repair failing septic systems, replace straight pipes, replace pit privies, fund sewer connections, and replace inadequate private wells. VDH is still working to finalize their implementation plan for these funds.

5. Set December meeting to discuss final draft report.

The Working Group agreed on December 17, 2021 from 10:00 to 12:00 for the next meeting. Mr. Gregory requested revisions to the report by December 7, 2021.

6. **Public comment.**

There were not public comments.

7. **Adjournment**

Wastewater Infrastructure Working Group Regional Roundtable Summary

How to promote public education about the importance of adequate wastewater treatment?

- Most local health department interactions with the public are person to person, which provides a good opportunity to educate homeowners.
- Septic Smart week includes the potential for community wide materials, news releases, and other outreach opportunities at a statewide level (e.g. Governor's proclamation).
- Incorporate wastewater treatment into programs for K-12 education and Envirothon events.
- Establish a statewide pump out requirement; VDH is in a better position to educate the public through pump out programs; need to tie them more into the public health benefits.
- Sewage haulers do a good job of educating home owners.

How to promote public education about the importance of adequate wastewater treatment?

- Local health departments need more handouts for education.
- Mirror SERCAP's grant program requirements for homeowners to attend an informational program on basic septic tank information.
- Encourage coordinated effort to educate owners when a home with an onsite system is purchased.
- Septic system inspection should be required as part of a home purchase.
- Incorporate public education about septic health into existing clean water outreach and education.
- Develop marketing plan with emphasis on a core message that all partners across state, local and nonprofit agencies utilize.
- Provide regular media releases to a group newsletter over time at a regular interval.

How to promote public education about the importance of adequate wastewater treatment?

- Put educational flyers with water bills.
- Biggest hurdle is gaining acceptance by local governments and political boards that onsite sewage can be a permanent solution.
- Find ways to do outreach through churches and existing community groups that are already trusted sources.
- Reach people under the poverty line who see septic as a higher level problem; with support from planning district commissions, DEQ, or community groups.
- Do local water quality fairs or similar events.
- Promote economic stability and new job creation of wastewater infrastructure projects to local governments. Example, Clinch River State Park can be an economic draw; important to address straight pipes and failing systems to maintain good water quality.
- Offer assistance to people to help with making applications for funds.

How to encourage collaboration among local, state, and federal government entities, including consistent collaboration and coordination of grant requirements and timelines?

- Mirror DHCD's housing rehabilitation interagency workgroup that is used to tailor grant products to the needs.
- Having grants on the agenda for every meeting of the Working Group.
- Continue to do the work to get partners to participate with the Working Group.
- Bring accountability to participants in Working Group meetings. Possibly establish some committees (not too many) to help bring more accountability.
- Need a way to streamline the process for individual homeowners that are not part of a community based project.
- Appropriate planning before implementation. Cannot have a drawn out planning process.
- Look to help with capacity building through planning district commissions.

How to encourage collaboration among local, state, and federal government entities, including consistent collaboration and coordination of grant requirements and timelines?

- Develop a streamlined grant application for single family households.
- Coordination, collaboration and continued communication with stakeholders on the work of the Working Group is key.
- Develop one grant application template for all funding sources for subsets of wastewater needs.
- Build and maintain a web portal dedicated to wastewater treatment outreach and education with a table, flow chart or questionnaire to guide users to specifically available funding sources.
- Offer trainings on how to apply for grant funding for local stakeholders.
- Connect with USDA Rural Development's funding and financing regional workshops for system operators and owners.
- Local watershed groups can be an excellent source of grant information.

How to encourage collaboration among local, state, and federal government entities, including consistent collaboration and coordination of grant requirements and timelines?

- Find ways to combine Indoor Plumbing Rehabilitation funding, with other funds available at DEQ and VDH.
- Develop a pilot program to gather information on needs and troubleshoot issues.

How to endorse community-based and regional projects as opposed to cumulative and repetitive site-by site individual solutions and integrated solutions across sewer and onsite wastewater treatment systems?

- Community involvement and the counties commitment to finding a solution was important to move the Catlett Calverton project in Fauquier County forward.
- Designating an area as a service district is helpful from a planning and zoning perspective.
- Use existing data. Example Northern Neck Planning District Commission has a database of 400-500 people we've done a pump out for that could identify clusters of need.
- Advocate for VDH updating the database, and make the reporting of conventional system maintenance required. Service providers can populate the data.
- Collect and report to VDH evaluations of the status of an onsite system through existing pump out programs. Work with private sector to provide these evaluations.

How to endorse community-based and regional projects as opposed to cumulative and repetitive site-by site individual solutions and integrated solutions across sewer and onsite wastewater treatment systems?

- Increase funding when there is cooperation across jurisdictions.
- Score regional projects higher or provide a great amount of funding for regional based projects.
- Emphasize that underlying federal statutes state a preference for regional projects.
- Recommendation to establish by memorandum of understanding or similar mechanism for long-term oversight and maintenance of regional solutions through a local service authority.
- Would be helpful to have local government entities willing to take ownership of smaller community based solutions, and charge owners a monthly fee. Many local entities do not want the liability.

How to endorse community-based and regional projects as opposed to cumulative and repetitive site-by site individual solutions and integrated solutions across sewer and onsite wastewater treatment systems?

- Complete a wastewater infrastructure needs assessment.
- Conduct a long term cost comparison between individual systems versus community based systems.
- Address barriers to discharge systems when they are the best solution for a community.
- Improve data reporting to help identify pockets of needs.

How to support prioritized, focused and innovative uses of state and federal funding to address needs determined pursuant to the wastewater infrastructure needs assessment required under § 62.1-223.3.

- Think it helps to have programs that prioritize low and moderate income households.
- Would be helpful if the timing of those funding programs were aligned. DEQ solicits applications once a year for some programs, ongoing applications for others.
- Open submission would be preferable. Probably more true for competitive programs.
- Fully endorse the way DHCD does CDBG program. Forces people to plan out their project in advance.
- Use area median income to help align low and moderate income across programs.
- May be worth going back to look at language for the indemnification fund to use area median income rather than 200% of federal poverty guidelines; 80% of area median income is the gold standard for prioritizing low to moderate income households.

How to support prioritized, focused and innovative uses of state and federal funding to address needs determined pursuant to the wastewater infrastructure needs assessment required under § 62.1-223.3.

- Mirror program in Washington and Oregon. They have private and public funding for all types of home loans and homeowners. They blend the money from the different programs to meet the need.
- Provide planning grants to support local government-driven wastewater needs assessments.
- Allow for skilled labor contributions on projects to be counted towards the match contribution. The DHCD water program supports this approach, called the self-help program.
- Develop a program where people can gain work skills, obtain licensure working under a licensed professional.
- Get support from VDH Population Health to assist with these types of Community Health Assessments.

Wastewater Needs Assessment Update

Karen Doran
Clean Water Financing and Assistance Program Manager
November 18, 2021

Wastewater Needs Assessment Update

- Governing legislation – *VA Code § 62.1-223.1-3*
- Commonwealth Wastewater Infrastructure Policy
  - Prioritize universal access to wastewater treatment that protects public health and the environment and supports local economic growth and stability
- Commonwealth Wastewater Infrastructure Needs Assessment
  - DEQ and VDH with stakeholders determine estimate of funding necessary to implement the policy, needs not eligible for WQIF grant

DEQ

Wastewater Needs Assessment Update

- First report due to GA – July 1, 2023
- Conduct assessment every four years
- Next steps
  - DEQ and VDH with stakeholders
    1. Develop needs survey and outreach/communication plan
    2. Implement outreach/communication plan
    3. Implement needs survey
    4. Collect and analyze data
    5. Develop report
- Questions?

DEQ

WASTEWATER INFRASTRUCTURE WORK GROUP REPORT

December, 2021

Wastewater Infrastructure Working Group

I. EXECUTIVE SUMMARY

In July of 2019, the Secretary of Natural and Historic Resources, the Secretary of Health and Human Resources, and the Secretary of Commerce and Trade, signed a joint letter of agreement (Appendix A) establishing an interagency Wastewater Infrastructure Work Group to assess wastewater infrastructure needs in the Commonwealth and to develop policy recommendations. The Wastewater Infrastructure Work Group explored the prevalence of failing septic systems, particularly in Tidewater and Southwest Virginia, learned of a pilot program to assess and resolve problems with small municipal sewer systems, and discussed existing barriers to adequate waste treatment. The Wastewater Infrastructure Work Group recommended establishing a policy that prioritizes the Commonwealth's commitment to providing all Virginians access to affordable waste treatment that supports their health, local economies, and clean water. To position the Commonwealth to seek and prioritize limited funding, the Wastewater Infrastructure Work Group identified research and data needs to more comprehensively and effectively assess wastewater infrastructure problems. Several recommendations from the Wastewater Infrastructure Work Group centered on educating students and the public about wastewater treatment and to prevent infrastructure failures through adequate oversight and proper maintenance. Finally, the Wastewater Infrastructure Work Group identified opportunities to maximize use of existing funding sources for wastewater treatment and recommended increased funding.

In 2021, the General Assembly approved Chapter 382 of the Acts of Assembly (SB1396) which codified certain recommendations from the Wastewater Infrastructure Work Group. SB 1396 amended the Code of Virginia (the Code) to strengthen the Commonwealth's wastewater infrastructure by adding § 62.1-223.1 to the Code establishing a policy for the Commonwealth to

prioritize universal access to wastewater treatment that is protective of public health and the environment, and supports local economic growth and stability. The legislation accomplishes the policy through education, collaboration of government entities, coordination and innovative use of available wastewater infrastructure funding, the consideration of climate change impacts in wastewater regulations, and with a preference for community-based solutions. SB 1396 also added § 62.1-223.2 to the Code to codify the Wastewater Infrastructure Policy Working Group (the Working Group) to consist of appropriate government entities and stakeholders to support and advise the Administration and General Assembly regarding the Commonwealth's wastewater policy. The legislation also added § 62.1-223.3 to the Code to direct the Department of Environmental Quality (DEQ) in partnership with the Virginia Department of Health (VDH) to estimate the amount of wastewater infrastructure funding necessary to implement the Commonwealth's wastewater policy every four years. The legislation amended § 32.1-164 of the Code to authorize VDH to include considerations for the impacts of climate change in the regulations for design and permitting of onsite sewage systems. Lastly, the legislation amended §32.1-164.1.01 of the Code to authorize VDH to use the funds collected and deposited into the Onsite Sewage Indemnification Fund for loans and grants to assist qualifying homeowners with repairing or improving onsite sewage systems.

PROBLEM STATEMENT

While the majority of Virginia residents have access to adequate wastewater treatment, even in 2021 a number of individuals and communities throughout the Commonwealth continue to lack access to affordable wastewater solutions that are protective of their health and the environment, some even live without access to any indoor plumbing. A recent effort, described in this report, by the Center for Coastal Resources Management at the Virginia Institute for

Marine Science (CCRM), College of William and Mary and the Virginia Department of Health (VDH) identified no less than 75 communities without adequate wastewater infrastructure, and 17 "shovel ready" solutions requiring an estimated $49.5 million in funding. Inadequate and failing wastewater treatment, whether onsite sewage (septic) or sewerage systems, threatens human health, water quality, and economic development in the Commonwealth.

Despite significant efforts by multiple state agencies, local government organizations, the federal government and nongovernmental organizations, the existence of pockets of failing wastewater infrastructure remains a statewide issue of grave concern. The goal of the Working Group is to better understand the scope and extent of the problem, to provide specific and actionable recommendations for improving coordination and alignment of programs, and to identify means to target limited state and federal resources to deliver the greatest results for individuals and communities in need.

In a Revis and Gregory article entitled "Onsite Sewage Systems and Environmental Justice in Virginia,"[1] VDH identified the problem of "wastewater islands." These are "areas in Virginia where a higher than average number of individuals within communities do not have access to affordable onsite waste solutions protective of health and the environment and/or where a concentration of failing wastewater systems exist." Wastewater islands can be found in rural areas with poor soils that do not support adequate septic systems, and small lots in urban and suburban communities without adequate capacity to properly maintain small sewer systems. Communities with inadequate wastewater treatment are also limited in opportunities for economic growth and stability.

[1] Danna L. Revis and James L. Gregory, Onsite Sewage Systems and Environmental Justice in Virginia. Virginia Department of Health. 2015.

Proper ongoing operation and maintenance of existing wastewater infrastructure is equally vital to the protection of public health and the environment and economic growth. For instance, communities served by small sewer systems must take steps, such as eliminating stormwater overflows, to ensure their systems can properly function. Further, for the more than 1 million Virginia households served by septic systems, their systems will not last forever even if they are well-maintained. The Environmental Protection Agency (EPA) estimates that after 15 to 40 years, septic systems can become clogged and fail, potentially discharging directly into the ground or nearby waterways. VDH estimates that over half of onsite septic systems are over 40 years old, permitted under less stringent requirements, meaning thousands of Virginians need to be planning for their next wastewater solution today.

Sea level rise can exacerbate the problems already present in low-lying areas and wastewater islands. Many of Virginia's coastal communities have a moderate to high level of risk for sea level rise with a large number of those communities largely reliant on onsite septic systems. Recurrent flooding due to sea level rise can cause septic system failure by exposing systems in low lying areas to surface water flooding or inundation from rising groundwater levels, both of which can impede or completely stop wastewater treatment.

Failing wastewater systems can discharge excess nitrates into groundwater, or cause untreated wastewater to reach surface water. High levels of nitrates in groundwater pose a risk to human health, specifically for infants, who rely on groundwater as a source of drinking water. High nitrates in drinking water has been linked to infant methemoglobinemia, certain cancers, and thyroid disease. There are also a number of pathogens found in sewage which can cause illness.

When pollutants from improperly treated wastewater reach surface waters, algal blooms can form, which consume oxygen and create "dead zones" that block sunlight, hindering fish, shellfish, and underwater grasses and aquatic life. Given that the Chesapeake Bay provides economic and recreational benefits estimated at $33 billion a year[2], keeping Virginia's waters healthy is important to the state and local economies. Improper wastewater treatment can cause closures of recreational and shellfish harvesting waters, which can impact Virginia's economy and recreational tourism. This water quality concern is not isolated to Virginia's Chesapeake Bay watershed; the Clinch, Powell, and Holston River watersheds host the most biodiverse river systems in North America and form the backbone of an emerging economic resource – ecotourism – in economically distressed southwest Virginia.

Struggling rural and urban communities can lack access to funding and resources to provide for maintenance and upgrades to keep wastewater systems functioning properly. Failing systems can also carry criminal and civil penalties for failure to comply with wastewater regulations, which may cause many homeowners and even localities to avoid coming forward to seek funding assistance. Their struggles are often made worse by the shame of having to discuss sanitation issues in their homes and the fear of eviction if onsite septic failures are reported by a tenant.

In addition to impacting low income communities, the issue also disproportionately affects Black or African-American occupied housing units, making this a significant environmental justice concern. A 2004 report by the Rural Community Assistance Project[3]

[2] EPA Needs to Better Report Chesapeake Bay Challenges: A Summary Report, Evaluation Report (US EPA, Office of the Inspector General, July 14, 2008.
[3] Still Living Without the Basics in the 21st Century: Analyzing the Availability of Water and Sanitation Services in the United States, Rural Community Assistance Project. 2004.

found that Black or African American households accounted for 40% of all households in the Commonwealth that lacked indoor plumbing; however, Black or African Americans make up only 20% of Virginia's total population.

JOINT LETTER OF AGREEMENT

During development of the Commonwealth's Chesapeake Bay Total Maximum Daily Load (TMDL) Phase III Watershed Implementation Plan (WIP), VDH, DEQ, the Virginia Department of Housing and Community Development (DHCD), and the Virginia Resources Authority (VRA), called for establishing a Wastewater Infrastructure Work Group to urgently and intentionally elevate the funding needs necessary to address the Commonwealth's failing wastewater infrastructure. These agencies sought to coordinate and enhance their ongoing efforts to address these concerns both within the Chesapeake Bay watershed and statewide.

In July of 2019, the Secretary of Natural Resources, the Secretary of Health and Human Resources, and the Secretary of Commerce and Trade, signed a joint letter of agreement (Appendix A) to establish the Wastewater Infrastructure Work Group, which consisted of representatives from DEQ, VDH, DHCD, VRA, and the Office of Natural and Historic Resources. The administration and agencies were advised by marine scientists from CCRM and legal scholars with the Virginia Coastal Policy Center (VCPC) at William & Mary Law School. The purpose of the letter was to outline the scope, goals, and focus of the Work Group. These goals included: identify issues of greatest concern; develop recommendations for the most feasible, equitable, and appropriate approach to identify wastewater infrastructure needs; prioritize solutions within areas of greatest concern; direct joint efforts and coordinate agencies' funding and loan opportunities; and proactively engage communities identified with the greatest needs.

INITIAL WASTEWATER INFRASTRUCTURE WORK GROUP

The initial Wastewater Infrastructure Work Group held seven meetings between October 2019 and May 2020. Members of the Work Group include: Ann Jennings, Deputy Secretary for Natural and Historic Resources (now Secretary for Natural and Historic Resources); Ann Phillips, Special Assistant to the Governor for Coastal Adaptation and Protection; Dr. Parham Jaberi, Chief Deputy Commissioner, Public Health and Preparedness, VDH; Julie Henderson, Director, Office of Environmental Health Services (OEHS), VDH; Lance Gregory, Director, Division of Onsite Sewage and Water Services, VDH; Sonal Iyer, Director, Division of Data Management and Process Improvement, VDH; Karri Atwood, Legislative Affairs, Division of Onsite Sewage and Water Services, VDH ; Allen Knapp, Director, OEHS, VDH (retired); Dr. Carl Hershner, Director, CCRM (retired); Dr. Kirk Havens, Director, CCRM; Dr. Molly Mitchell, Marine Scientist, CCRM; Robert Isdell, Postdoctoral Research Associate, CCRM; Christine Tombleson, Marine Scientist, CCRM; Erik Johnston, Director, DHCD; Jay Grant, Deputy Director of Community Development, DHCD; Matt Weaver, Policy and Legislative Director, DHCD; Valerie Thomson, Director of Administration, DEQ; Karen Doran, Director, Clean Water Financing and Assistance Program, DEQ; Stephanie Hamlett, Executive Director, VRA; and Shawn Crumlish, Director of Financial Services, VRA. The Work Group was advised by Elizabeth Andrews, Director, and Angela King, Assistant Director, with VCPC at William & Mary Law School.

The initial work group determined a critical first step was to document the extent of inadequate wastewater treatment across the Commonwealth. Members discussed what, if any, documentation is gathered by state agencies and found their own sources to be limited and often outdated.

The initial work group identified and subsequently reached out to federal agencies and nongovernmental organizations for any available data on mapping or documenting wastewater infrastructure needs. Subsequent research led the initial work group to determine that the Commonwealth should invest in mapping and survey efforts to more comprehensively understand the scope and extent of the problem and funding need.

To that end, as detailed in the next section, the group worked with CCRM researchers on their efforts to develop a science-based approach to mapping "hot spots" of failing septic systems and septic systems threatened by rising sea levels in the coastal plain.[4] Discussions also focused on the existing VDH Environmental Health Database (EHD) which tracks permitted onsite septic systems but does not, at this time, offer a full picture of all existing systems. Information regarding sewer infrastructure needs is largely driven by the Water Quality Improvement Fund survey of large municipal nutrient reduction project needs in the Chesapeake Bay watershed and by localities that self-select to pursue DEQ or DHCD funding.

With input from the initial work group, VDH and CCRM launched a collaborative effort to map communities with straight pipes, failing septic systems, aging systems and "shovel ready" project needs. Working with a CCRM-developed on-line mapping tool, during mid- to late April 2020, local Health Districts documented these wastewater problems based upon their hands-on knowledge of the communities in their local service areas.

The initial work group also explored DEQ's Clean Water Financing and Assistance Program (CWFAP) southwest Virginia pilot program, detailed in this report, which is using financial incentives to fund critical wastewater projects: sewer system evaluation surveys, inflow

[4] The project was funded in part by a grant from EPA's Chesapeake Bay Regulatory and Accountability Program via VDH's Onsite Sewage System Tracking program.

and infiltration (I/I) studies, collection system repair projects to reduce I/I and/or sanitary sewer overflows (SSO), and projects that eliminate straight pipe, gray water, and partially treated wastewater discharges to surface waters in the region.

The initial work group's deliberations benefitted from previous investigations by VCPC at William & Mary Law School. VCPC provided a broad understanding of the problem and potential solutions through their study entitled "Onsite Sewage Systems: Background, Framework, and Solutions."[5]

Between meetings of the initial work group, each participating agency provided any available information on the general scope of wastewater infrastructure needs in the Commonwealth, outstanding data needs, and funding sources. The initial work group also prepared a summary of existing federal, state and private funding sources (Appendix B).

SB 1396

In 2021, the General Assembly approved SB1396 which codified certain recommendations from the Wastewater Infrastructure Work Group. The legislation incorporated several recommendations from the initial work group. The legislation had five major components: i) a Commonwealth policy for wastewater infrastructure; ii) the codification of the Wastewater Infrastructure Policy Working Group (the Working Group); iii) to have DEQ in partnership with VDH to assess wastewater infrastructure funding needs in the Commonwealth every four years; iv) to authorize VDH to include considerations for the impacts of climate change in the Sewage Handling and Disposal Regulations; and v) to authorize VDH to use the

[5] Jamie Huffman, Sarah Simonetti, and R. Scott Herbert. 2018. Onsite Sewage Systems: Background, Framework, and Solutions. Virginia Coastal Policy Center, College of William & Mary Law School.

Onsite Sewage Indemnification Fund for loans and grants to assist homeowners with repairs of onsite sewage systems.

COMMONWEALTH WASTEWATER INFRASTRUCTURE POLICY

SB 1396 amended the Code of Virginia (the Code) to strengthen the Commonwealth's wastewater infrastructure by adding § 62.1-223.1 to the Code establishing a policy for the Commonwealth to prioritize universal access to wastewater treatment that is protective of public health and the environment, and supports local economic growth and stability. The Commonwealth policy endorses public education about the importance of adequate wastewater treatment. The policy also endorses consistent collaboration and coordination of grant requirements and timelines among government entitities, along with prioritized, focused, and innovative use of state and federal funding. This legislation also establishes a preference for community-based and regional projects as opposed to individual site-by-site solutions, and integration of solutions across sewer and onsite wastewater treatment systems. Lastly, the Commonwealth policy endorses incorporation of the effects of climate change into wastewater treatment and regulatory and funding programs.

WASTEWATER INFRASTRUCTURE POLICY WORKING GROUP

SB 1396 also added § 62.1-223.2 to the Code to codify the Wastewater Infrastructure Policy Working Group (the Working Group) as an advisory board in the executive branch. The purpose of the Working Group is to continually assess wastewater infrastructure needs in the Commonwealth and develop policy recommendations. The Working Group has four ex officio members; the Director of DEQ, the State Health Commissioner, the Director of DHCD, and the Executive Director of VRA, or their designees. In addition, the Working Group is to invite participation by the Virginia Association of Counties (VACo), the Virginia Association of

Planning District Commissions (VAPDC), the U.S. Department of Agriculture Rural Development, the Virginia Onsite Wastewater Recycling Association (VOWRA), the Virginia Association of Municipal Wastewater Agencies (VAMWA), the Virginia Rural Water Association (VRWA), and the Southeast Rural Community Assistance Project (SERCAP).

Section 62.1-223.2 of the Code establishes the following powers and duties for the Working Group:

1. Assess wastewater infrastructure needs in the Commonwealth and develop policy recommendations.
2. Promote public education about the importance of adequate wastewater treatment.
3. Encourage collaboration among local, state, and federal government entities, including consistent collaboration and coordination of grant requirements and timelines.
4. Endorse community-based and regional projects as opposed to cumulative and repetitive site-by-site individual solutions and integrated solutions across sewer and onsite wastewater treatment systems.
5. Support prioritized, focused, and innovative use of state and federal funding to address needs determined pursuant to § 62.1-223.3.
6. Prioritize universal access to wastewater treatment that protects public health and the environment and supports local economic growth and stability.
7. Support incorporation of the effects of climate change into wastewater treatment regulatory and funding programs.

The Working Group is also required to submit an annual report to the Governor and the General Assembly on the activity of the Working Group. The provisions of § 62.1-223.2 of the Code which establishes the Working Group will expire in July 1, 2030.

The Working Group held its first meeting on July 12, 2021. The members of the Working Group are David Paylor, Director of DEQ, Dr. M. Norman Oliver, State Health Commissioner, Stephanie Hamlett, Executive Director of VRA, and Jay Grant, Director of Outreach, Planning and Compliance at DHCD. At the first meeting the Working Group heard remarks from Ann Jennings, Secretary of Natural and Historic Resources and Senator Ghazala F. Hashmi, patron of SB 1396. The Working Group selected Director Paylor as Chair, established guidelines for the Working Group, reviewed the list of stakeholders to be represented at Working Group meeting, and approved a 2021 work plan for the group. The full summary of the meeting can be found at www.townhall.virginia.gov. [6]

As part of the 2021 work plan, the Working Group held three regional roundtable meetings in September to hear feedback from stakeholders on four specific questions. A summary of stakeholder responses is provided below.

1. **How to promote public education about the importance of adequate wastewater treatment?**

- Most local health department interactions with the public are person to person, which provides a good opportunity to educate homeowners.
- Septic Smart week includes the potential for community wide materials, news releases, and other outreach opportunities at a statewide level (e.g. Governor's proclamation).
- Incorporate wastewater treatment into programs for K-12 education and Envirothon events.

[6] https://www.townhall.virginia.gov/L/GetFile.cfm?File=meeting\58\32627\Minutes_VDH_32627_v1.pdf

- Establish a statewide pump out requirement; VDH is in a better position to educate the public through pump out programs; need to tie them more into the public health benefits.
- Sewage haulers do a good job of educating home owners.
- Local health departments need more handouts for education.
- Mirror SERCAP's grant program requirements for homeowners to attend an informational program on basic septic tank information.
- Encourage coordinated effort to educate owners when a home with an onsite system is purchased.
- Septic system inspection should be required as part of a home purchase.
- Incorporate public education about septic health into existing clean water outreach and education.
- Develop marketing plan with emphasis on a core message that all partners across state, local and nonprofit agencies utilize.
- Provide regular media releases to a group newsletter over time at a regular interval.
- Put educational flyers with water bills.
- Biggest hurdle is gaining acceptance by local governments and political boards that onsite sewage can be a permanent solution.
- Find ways to do outreach through churches and existing community groups that are already trusted sources.
- Reach people under the poverty line who see septic as a higher level problem; with support from planning district commissions, DEQ, or community groups.
- Do local water quality fairs or similar events.

- Promote economic stability and new job creation of wastewater infrastructure projects to local governments. Example, Clinch River State Park can be an economic draw; important to address straight pipes and failing systems to maintain good water quality.
- Offer assistance to people to help with making applications for funds.

2. How to encourage collaboration among local, state, and federal government entities, including consistent collaboration and coordination of grant requirements and timelines?

- Mirror DHCD's housing rehabilitation interagency workgroup that is used to tailor grant products to the needs.
- Having grants on the agenda for every meeting of the Working Group.
- Continue to do the work to get partners to participate with the Working Group.
- Bring accountability to participants in Working Group meetings. Possibly establish some committees (not too many) to help bring more accountability.
- Need a way to streamline the process for individual homeowners that are not part of a community based project.
- Appropriate planning before implementation. Cannot have a drawn out planning process.
- Look to help with capacity building through planning district commissions.
- Develop a streamlined grant application for single family households.
- Coordination, collaboration and continued communication with stakeholders on the work of the Working Group is key.

- Develop one grant application template for all funding sources for subsets of wastewater needs.
- Build and maintain a web portal dedicated to wastewater treatment outreach and education with a table, flow chart or questionnaire to guide users to specifically available funding sources.
- Offer trainings on how to apply for grant funding for local stakeholders.
- Connect with USDA Rural Development's funding and financing regional workshops for system operators and owners.
- Local watershed groups can be an excellent source of grant information.
- Find ways to combine Indoor Plumbing Rehabilitation funding, with other funds available at DEQ and VDH.
- Develop a pilot program to gather information on needs and troubleshoot issues.

3. How to endorse community-based and regional projects as opposed to cumulative and repetitive site-by site individual solutions and integrated solutions across sewer and onsite wastewater treatment systems?

- Community involvement and the counties commitment to finding a solution was important to move the Catlett Calverton project in Fauquier County forward.
- Designating an area as a service district is helpful from a planning and zoning perspective.
- Use existing data. Example Northern Neck Planning District Commission has a database of 400-500 people we've done a pump out for that could identify clusters of need.

- Advocate for VDH updating the database, and make the reporting of conventional system maintenance required. Service providers can populate the data.
- Collect and report to VDH evaluations of the status of an onsite system through existing pump out programs. Work with private sector to provide these evaluations.
- Increase funding when there is cooperation across jurisdictions.
- Score regional projects higher or provide a great amount of funding for regional based projects.
- Emphasize that underlying federal statutes state a preference for regional projects.
- Recommendation to establish by memorandum of understanding or similar mechanism for long-term oversight and maintenance of regional solutions through a local service authority.
- Would be helpful to have local government entities willing to take ownership of smaller community based solutions, and charge owners a monthly fee. Many local entities do not want the liability.
- Complete a wastewater infrastructure needs assessment.
- Conduct a long term cost comparison between individual systems versus community based systems.
- Address barriers to discharge systems when they are the best solution for a community.
- Improve data reporting to help identify pockets of needs.

4. How to support prioritized, focused and innovative uses of state and federal funding to address needs determined pursuant to the wastewater infrastructure needs assessment required under § 62.1-223.3.

- Think it helps to have programs that prioritize low and moderate income households.
- Would be helpful if the timing of those funding programs were aligned. DEQ solicits applications once a year for some programs, ongoing applications for others.
- Open submission would be preferable. Probably more true for competitive programs.
- Fully endorse the way DHCD does CDBG program. Forces people to plan out their project in advance.
- Use area median income to help align low and moderate income across programs.
- May be worth going back to look at language for the indemnification fund to use area median income rather than 200% of federal poverty guidelines; 80% of area median income is the gold standard for prioritizing low to moderate income households.
- Mirror program in Washington and Oregon. They have private and public funding for all types of home loans and homeowners. They blend the money from the different programs to meet the need.[7]
- Provide planning grants to support local government-driven wastewater needs assessments.
- Allow for skilled labor contributions on projects to be counted towards the match contribution. The DHCD water program supports this approach, called the self-help program.
- Develop a program where people can gain work skills, obtain licensure working under a licensed professional.

[7] https://www.craft3.org/Borrow/clean-water-loans

- Get support from VDH Population Health to assist with these types of Community Health Assessments.

WASTEWATER NEEDS ASSESSMENT

SB 1396 created § 62.1-223.3 of the Code to require DEQ, in partnership with VDH, DHCD, VRA, and other stakeholders to determine every four years an estimate of the amount of wastewater infrastructure funding that is necessary to implement the Commonwealth's wastewater policy. The assessment must also determine needs that are not eligible to be covered by grant funding pursuant to the Virginia Water Quality Improvement Act. The first needs assessment must be provided by July 1, 2023, and every four years thereafter.

CONSIDERATIONS FOR IMPACTS OF CLIMATE CHANGE

SB 1396 also amended § 32.1-164 of the Code to authorize VDH to include considerations for the impacts of climate change in the regulations for design and permitting of onsite sewage systems. VDH has discussed the legislation with the Sewage Handling and Disposal Advisory Committee and developed a subgroup to work with VDH to develop an initial draft of considerations for inclusion in the Sewage Handling and Disposal Regulations (12VAC5-610, the Regulations). VDH's goal is to provide proposed revisions to the Regulations, including considerations for inclusion of impacts of climate change, by December 2023.

INDEMNIFICATION FUND

Pursuant to § 32.1-164.1.01 of the Code of Virginia, $10 of each onsite sewage system fee collected by VDH is deposited into the indemnification fund. Onsite sewage system owners may request up to $30,000 from the fund to cover the cost of repairing a failed onsite sewage system when: 1) the original system fails within three years, 2) the owner files a request for

reimbursement within one year of the failure, and 3) specific actions of VDH were negligent and those actions caused the failure. Historically, VDH received dozens of indemnification fund requests per year. Following implementation of a statewide quality assurance program, the number of requests dropped significantly. Also, more and more onsite sewage system evaluations and designs were being conducted by private sector providers. In 2018, VDH began a five year process to transition all onsite sewage system evaluations and designs to the private sector, and VDH expects that very few indemnification fund applications will be received after a full transition of evaluation and design services.

With the change in direct services and anticipated reduction in applications, the SB 1396 amended §32.1-164.1:01 of the Code to allow VDH to use the funding to provide grants and loans to property owners with income at or below 200 percent of the federal poverty guidelines to repair failing onsite sewage systems or install onsite sewage systems on properties that lack adequate sewage disposal. These funds, if used to provide zero interest loans, will assist a small number of eligible owners with repairs. It would also allow VDH to encourage owners to operate and maintain their systems in compliance with applicable law without resorting to enforcement measures.

WASTEWATER INFRASTRUCTURE MANAGER

As part of SB 1396 funding was provided to VDH for the Wastewater Infrastructure Manager at VDH. This position is responsible for: i) developing and implementing the grant and loan program from the Onsite Sewage Indemnification Fund; ii) overseeing a comprehensive assessment of onsite sewage system needs throughout the Commonwealth; iii) serving as an ongoing liaison to the Work Group and its local, federal and private partners to coordinate, align, and capitalize on available funding opportunities for septic system repairs and improvements

throughout the Commonwealth; and iv) coordinate with local health departments, state and local agencies, and other stakeholders to ensure that grant and loan funds are focused on those areas identified as having high levels of health disparities and environmental impacts resulting from failing septic systems.

ANALYSIS OF EXISTING DATA ON SEPTIC FAILURES AND RELATED ISSUES

The CCRM at VIMS and the Division of Data Management at VDH collaborated on an analysis of septic data to better inform the Working Group. The purpose of the analysis was to attempt to identify areas with high rates of septic failures, areas of emerging concern due to sea level rise, and other potential considerations (such as ecological or socioeconomic impacts).

There is no existing data concerning the location of failed or failing septic systems beyond those systems where VDH has received a complaint or an application to repair a failing system. VDH septic repair permit data set is a reasonable proxy; however, that data set was created for regulatory purposes and conclusions drawn from it require some critical caveats:

- The data does not necessarily represent the total number of septic failures because there may be currently unidentified issues. This means that repair permits could underestimate the total problem. This also could lead to geographic discrepancies in spatial patterns of failures if socio-economic factors affect the likelihood that a septic issue is identified and repaired.
- The data does not necessarily represent the total number of septic failures because it does not record the degree of severity of the problem resulting in the repair. This could mean that the repair permits are equally counting minor issues and severe drain field failures; which means the data could overestimate the total problem. This leads to an additional caveat, that the repair permits do not distinguish the reason for the repair. Areas with

high numbers of septic failures could be due to all of the systems aging or could be due to rising groundwater tables.

- Repair permits are attached to street addresses. On large parcels, the actual drain field can be some distance from the street address. Therefore, potential explanatory variables (such as the underlying soil conditions, groundwater levels, and proximity to waterways) cannot be extracted from other data sets and connected with repair permits with a high level of confidence. Broad generalizations can be made, but should be used cautiously.
- Dates on repair permits reflect a somewhat ambiguous time between when the issue occurred and when the issue was fixed. Temporal connections between septic issues and environmental impacts (such as adjacent water quality) cannot be made with a high level of confidence. Broad generalizations can be made, but should be used cautiously.
- The age of septic systems is known to be a factor in septic system failure. Construction permits for sites often occur prior to house or neighborhood construction and use tax parcel and lot numbers for permit location rather than addresses. Although this information can be used to locate the septic site, it must be done individually and a researcher cannot take advantage of the automated geocoding processes. Locating these sites individually is time-intensive; therefore, incorporating septic system age into an analysis would be very expensive.

The caveats listed above preclude the use of predictive modeling as the sole method for targeting areas where septic systems are most likely to fail now and under future sea level rise and increased rainfall intensity, duration, and frequency. Therefore, as an alternative, CCRM and VDH used a two-prong approach; 1) elicit information beyond that captured in the permit records from environmental health specialist working in local health departments, and 2)

statistically analyze the geospatial distribution of permit repairs to find underlying patterns that could help inform decision-making.

1. Elicitation of information from environmental health specialists

Environmental Health Specialists (EHS) have unique knowledge about the localities where they work that is frequently not captured in existing databases. For example, these experts may know areas where few septic failures have occurred to date, but where all the systems in the area are rapidly approaching an age where failures become common. They may also be able to distinguish between areas where failures are due to high water tables and where the failures are due to the age of the system.

To capture this knowledge, CCRM has created an interactive map on ArcGIS Online. EHS can delineate polygons around areas with known issues and then identify the issues (including septic and drinking water issues), other characteristics of concern (socio-economic issues), and whether there is a shovel-ready project to address the issues. The output of the map is a geospatial dataset of areas with septic and/or drinking water issues known to EHS and may capture septic issues that are not currently obvious from the repair permit database. It can be used to target funding projects.

The Wastewater Interactive Viewer (WIV) has been launched and is can be continuously updated with additional data. CCRM and VDH staff have discussed options for working with additional stakeholders, such as local government officials, to assist in populating the WIV in the future.

2. Statistical analysis of repair permits

CCRM's approach to the statistical analysis uses the Emerging Hot Spot Analysis tool in ArcGIS. This tool looks at patterns across both spatial and temporal scales simultaneously. It

can identify continuous hotspots (where there are constant, high numbers of repair permits) and emerging hotspots (locations representing new, intensifying, or diminishing clusters of repair permits).

For this analysis, CCRM constrained the repair permit data to the years 2008-2018 to ensure consistency of data across localities and used a single temporal scale of one year. The analysis was done at two different spatial scales (1km and 3km) to examine the extent to which spatial scale impacts the results of the analysis. The analysis was performed on both the total number of repair permits within a cell and the number of repair permits standardized to the total number of houses. These two approaches answer slightly different questions. The first approach locates the areas with the most repair permits recorded and tends to identify areas with high density of housing. Targeting these areas for mitigation measures would reduce overall issues under current conditions. The second approach highlights areas where there are unusually high failures relative to the housing density. It helps identify where failures are likely due to aging infrastructure, high groundwater tables, or other factors.

The results of the analysis suggest three basic issues are occurring. First, there are several areas where hotspots of septic failure occur annually (continuous hot spots). These may be areas with high groundwater tables that have low suitability for septic systems. Second, there are also several areas that have been hot spots in some years, but not others (sporadic hot spots). This may be due to high annual water tables associated with heavy rain or sea level variability or periodic episodes of aging septic systems. These areas are good targets for monitoring, particularly in heavy precipitation years and under sea level rise. Last, there are emerging hot spots, areas that should be investigated to see if conditions have changed or if systems are

beginning to reach the end of their lifespan. The information being gathered from the EHS may help explain these patterns.

Output for a selected analysis (1km, total number of repair permits) is included in CCRM's Final Report (found at https://www.vims.edu/ccrm/_non-public/wastewater/wastewater-infrastructure_final-report.pdf) as regional maps of repair permit hotspots. Ongoing work by CCRM includes assessing results of the hot spot analysis for their closeness to areas with water quality issues (bacterial counts) and their potential vulnerability to sea level rise impacts. Results of all the analyses will be put into a geospatial viewer:[8]

Virginia Wastewater Data Viewer (VADV)

The VADV is comprehensive and includes the current data from the WIV and will be update when future data is created. It requires login info, since there were concerns that not all of the data be made public. CCRM intends to incorporate the hot spot analysis and the sea level layers into a public map on AdaptVA for public dissemination.

This work by CCRM and VDH found that the single most important piece of data necessary to enhance our understanding of current conditions of septic systems and emerging threats to those systems is the geospatial location of each septic drain field, and the single most important model necessary to enhance our understanding of emerging threats to septic systems under sea level rise in the coastal plain is a robust groundwater model linked to sea level. The accuracy of spatial assessments of risk is dependent upon the accuracy of the underlying spatial data. Inaccurate geocoding of the address or assuming that the septic system lies at the same elevation as the structure it serves (minus ~3 feet for drain-field depth) will lead to

[8] Consideration should be given to combining mapping of wastewater hotpots with mapping of roadway and drinking water wells threatened by inundation.

underestimates of coastal septic systems vulnerable to sea level rise. Therein also lies the need for a robust groundwater model linked to sea level. As sea level rises, so too will the groundwater. As groundwater is typically at or above sea level unless there is significant withdrawal, increases in groundwater table elevation as a result of sea level rise are likely to impact the efficiency of wastewater drain fields long before direct inundation.

DEQ SOUTHWEST VIRGINIA PILOT PROGRAM

DEQ's Clean Water Financing and Assistance Program (CWFAP) is offering loan forgiveness to localities in Southwest Virginia to address critical wastewater infrastructure challenges through a new pilot program. Localities within DEQ's Southwest Regional Office boundary are eligible to apply. These are the counties of Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, and Wythe and the cities of Bristol, Galax and Norton.

This pilot program uses financial incentives, grants and loans, from the Clean Water Revolving Loan Fund to fund these types of critical projects: sewer system evaluation surveys, inflow and infiltration (I/I) studies, collection system repair projects to reduce I/I and/or sanitary sewer overflows (SSO), and projects that eliminate straight pipe, gray water, and partially treated wastewater discharges to surface waters in the region. In addition to improving and protecting water quality, the program will foster asset management and promote fiscal sustainability.

This pilot program is especially important to Southwest Virginia, in which many localities have difficulty funding certain types of projects that do not increase revenue streams. In addition to demographic challenges, the region is home to several ecologically important watersheds like the Clinch, Powell, and Holston River Watersheds. These river systems support the highest number of rare and imperiled fish and freshwater mussel species in North America,

and provide a critical water supply for several communities in Southwest Virginia. Phase 1 of the pilot program was focused on reducing inflow and infiltration and eliminating sanitary sewer overflows and began in the summer of 2020. Phase 2 of the pilot program seeks to eliminate direct discharges of sewage from straight pipes and failing septic systems. This phase is being planned for 2023. Depending on the success of the pilot program, DEQ hopes to extend this innovative funding initiative to other parts of the state, including Southside Virginia and the Eastern Shore.

RECOMMENDATIONS OF THE WASTEWATER INFRASTRUCTURE WORK GROUP

1. Research Data Needs to Fully Assess Wastewater Infrastructure Problems

The Working Group found the Commonwealth's and local governments' efforts to solve wastewater infrastructure problems are severely hampered by the lack of adequate and timely data on the extent of the need. This is true for household onsite septic systems, small community septic systems, and the wastewater utilities for less-populated local communities. Data gaps were identified by the workgroup as one of the greatest barriers to being able to fully quantify the extent of wastewater infrastructure needs throughout the Commonwealth. CCRM and VDH have pioneered several methods for documenting straight pipes, failed onsite systems, and aging systems as well as mapping "hot spots" for septic problems.

The Working Group recommends that investments in sufficient and ongoing documentation of wastewater infrastructure needs must be maintained and used to determine and

prioritize scope of funding needs to address onsite system failures. Specifically, the Working Group recommends:

A. Providing continued and sufficient funding to support the ongoing CCRM and VDH collaboration to document onsite/community septic system "hot spots" in the coastal plain and to extend the analysis statewide. The "hot spots" analysis can be a crucial tool for assessing potential target areas for funding, as well as informing public health policy analysis (e.g., community health assessments). However, the current model is a static snap-shot of 10 years of data and covers only a portion of the Commonwealth. Additional funding was provided during the 2021 General Assembly Session to expand the analysis statewide; however funding is necessary to provide for ongoing updates so that the tool can continue to serve as a guide for funding and health policy in the future.

B. Providing continued and sufficient funding to complete and periodically update the VDH/CCRM interactive mapping tool by collecting information provided by EHS about onsite and community system problem areas in their local health districts. Similar to the "hot spots" analysis, this tool provides crucial real world data from the EHS working within communities. This includes identification of potentially shovel ready projects in need of funding. Without sufficient funding, the tool would be a single snap-shot that may only provide near-term benefits.

C. Sufficiently fund and continue the VDH ongoing effort to create and maintain a complete inventory of all onsite systems in the VDH EHD and in non-EHD data systems, collect data on septic systems currently not included in EHD, develop data import capabilities in EHD to complete the inventory, and provide a public facing interface for onsite sewage system data. The EHD houses data on regulated activities including new construction, repair permits, and operation and maintenance of onsite systems. The Working Group recommends creating a

public portal for viewing the onsite system data housed in EHD to assist funding agencies in prioritizing and effectively directing limited resources.

Additionally, hundreds of thousands of onsite sewage systems were installed before VDH began tracking permitted systems in the EHD database in 2003. These records are housed in hard copy files at local health districts throughout the Commonwealth, and would require a substantial resource investment to manually enter into the EHD database However, with the advent of GIS systems for locality parcel data, and other electronic property data records, it may be possible to streamline the effort to create a complete inventory of properties served by onsite sewage systems. Combining these efforts with developing import capabilities in EHD will improve the quality of onsite septic system data displayed in the public portal.

VDH has initiated a pilot effort to inventory septic systems not currently captured as regulated activities within the EHD database. VDH worked with DEQ and local government officials in the Northern Neck, Middle Peninsula, and Eastern Shore regions of Virginia to discuss a possible transition of local Chesapeake Bay Preservation Act Pump Out programs from locality-based oversight to VDH (report on the proposed pilot program can be found at https://rga.lis.virginia.gov/Published/2021/RD342/PDF). The first steps in this transition will be the development of a complete inventory of onsite systems in the region and preparing to import systems into the EHD.

The Working Group discussed multiple barriers slowing identification of failing onsite waste treatment including the reluctance of homeowners and, particularly, renters from notifying VDH of repair needs. The VCPC at the William & Mary Law School reviewed Virginia's residential landlord/tenant laws and suggest legislative amendments to the Virginia Freedom of

Information Act to provide confidentiality protection to renters filing waste treatment-related complaints against their landlords.

The lack of a comprehensive, accurate, and timely picture of problems at existing wastewater treatment facilities was also identified as a significant issue of concern by the Working Group. Without a clearer picture of those problems, state and federal agencies are hampered in their efforts to prioritize and direct limited resources. Generally, our understanding of wastewater treatment funding needs is driven by those localities that self-select to request assistance from DEQ, VRA, DHCD, and other state agencies as well as the U.S. Department of Agriculture Rural Development. The Working Group discussed the value of documenting the backlog of wastewater infrastructure needs, particularly to prepare Virginia to take fuller advantage of federal funding opportunities. The goal of any effort should be for agencies to partner with localities to demonstrate the need and request the federal government to increase the key funding programs at VDH, DHCD, and DEQ. This goal is accomplished in part by completion of the wastewater infrastructure needs assessment required every four years pursuant to § 62.1-223.3 of the Code.

In addition to documenting the backlog of existing wastewater funding needs, the Working Group recommends consideration of proactive, regional planning to document longer-term wastewater treatment needs and long-term management, particularly for communities not served by municipal wastewater treatment facilities. Similar long-term planning for public drinking water needs is already conducted. Long-term planning for wastewater would guide the Working Group and future administrations in policy and budget recommendations. Wastewater planning should be overseen by the Working Group in partnership with local governments and local planning district/regional commissions.

2. Prevent the Human Health, Water Quality, and Economic Impacts through Public Education and Proper Maintenance

Properly constructed septic systems cannot continue to fully function forever and will have a useful life of 15 to 40 years. The useful life of a septic system is diminished by a lack of maintenance and exposure to flooding from surface and ground waters. Too often, households on septic are not fully aware of their waste treatment and, unlike a home on sewer, do not receive a monthly or bimonthly "reminder" in the form of a utility bill. Working Group members noted that the operation and maintenance of septic systems can be "free" until the system fails. The Work Group found that public education, statewide maintenance requirements, and enhanced oversight of septic systems is warranted to prevent further erosion of human health, water quality and local economies from failed wastewater treatment.

Virginia's curricula for public K-12 schools do not currently include education about wastewater treatment. Working Group members noted that the proper collection and treatment of human waste involves chemistry, biology, soil science, engineering, math, environmental science and physics. Increasing students' and parents' awareness and appreciation of the importance of wastewater treatment through public education would help to increase both public support for needed investments in wastewater treatment and understanding that adequate treatment is not always available to all Virginians.

A. The Working Group recommends incorporating an understanding of wastewater treatment in appropriate public K-12 curricula, such as STEM modules, math, science or environmental science courses.

B. For the general public, consistent messaging is necessary to rebrand wastewater treatment as critical to economic development, water quality, and public health. The Working

Group recommends working with its partner state agencies, local governments, and stakeholders to rebrand community and onsite wastewater treatment as critical infrastructure on par with drinking water, roads, and bridges and to use innovative online educational platforms to engage the public.

Proper and consistent maintenance of onsite systems can extend the life of a system and reduce homeowner costs associated with repair or replacement. Pump-out requirements exist in Tidewater Virginia pursuant to the Chesapeake Bay Preservation Act (Act).[9] The Act requires homeowners and businesses to pump out their systems once every 5 years and provides for alternative approaches including documentation that a system has been inspected, is functioning properly, and does not require maintenance. Some localities outside of Tidewater also require septic maintenance by local ordinance. The Working Group recommends consideration of extending a requirement to either report maintenance of conventional onsite systems statewide or to specifically require periodic system pump outs. Evaluating a statewide septic maintenance requirement should be done with affected stakeholders and local governments.

In part to enhance oversight of onsite system maintenance within Tidewater Virginia, VDH worked with DEQ and local government officials in the Northern Neck, Middle Peninsula, and Eastern Shore regions to assess the transition of local Chesapeake Bay Preservation Act pump out programs from locality-based oversight to VDH oversight. In 2019, the General Assembly

[9] "Tidewater Virginia" is defined as the following jurisdictions, for purposes of the Act: the Counties of Accomack, Arlington, Caroline, Charles City, Chesterfield, Essex, Fairfax, Gloucester, Hanover, Henrico, Isle of Wight, James City, King and Queen, King George, King William, Lancaster, Mathews, Middlesex, New Kent, Northampton, Northumberland, Prince George, Prince William, Richmond, Spotsylvania, Stafford, Surry, Westmoreland, and York, and the Cities of Alexandria, Chesapeake, Colonial Heights, Fairfax, Falls Church, Fredericksburg, Hampton, Hopewell, Newport News, Norfolk, Petersburg, Poquoson, Portsmouth, Richmond, Suffolk, Virginia Beach, and Williamsburg. § 62.1-44.15:68.

approved HB 2322, which required VDH to develop a plan for transitioning oversight. An interim report was provided to the 2020 General Assembly[10], with the final report provided in August, 2021. The plan outlined in the report will required additional statutory authority and funding for VDH for proper implementation.

The Working Group discussed innovative examples of local authorities providing assistance with maintenance of onsite systems. Public Service Authorities (PSA) in Wise and Tazewell Counties help to install onsite systems and collect gray water to treat either at centralized or decentralized wastewater treatment facilities. This decentralized approach can reduce local government costs associated with installing wastewater collection and treatment infrastructure. If the Virginia Clean Water Revolving Loan Fund provides funding, the cost of septic tanks can be reimbursed, provided the applicant (that is, the PSA) retains responsibility for maintenance. The Working Group recommended further evaluation of this approach with stakeholders and local governments as it could prove more effective than single homeowner maintained onsite systems. This local or regional authority approach would promote community-based or regional solutions versus site-by-site solutions, and integrate solutions across sewer and onsite systems.

With community systems connecting 10 or more homes, the Working Group discussed barriers to ensuring maintenance of those systems. Without adequate funding and effective management by technical experts, community systems can fail early in the useful life of the system, threatening human health and the environment. Repairs can impose significant costs to homeowners. These community systems are often managed by Homeowners Associations (HOAs). While VDH has authority over the design, construction, and maintenance of these

[10] https://rga.lis.virginia.gov/Published/2020/RD60

systems, there is limited oversight for ownership-structured, or HOA owned, community systems with less than 50 connections, to ensure long term success. VDH has limited authority to intervene if an HOA fails to maintain a community system or, even worse, abandons their maintenance obligations. The Working Group recommends engaging local governments and other stakeholders on consideration of a requirement for community systems with 10 or more homes to hire a Responsible Management Entity (RME) to provide for management throughout the life of the system, even if the number of homes served falls below 10, and to prohibit HOAs from owning community systems. EPA's Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems recommends an RME ownership model for community systems in environmentally sensitive areas.[11] RMEs should be required under state code to prepare a business plan with financial assurance provisions for ongoing operation and repair, as needed, of the system. An RME could include regional authorities, such as the Western Virginia Water Authority, or private entities.

For disadvantaged communities with either multiple onsite or community systems, the Working Group recommends providing incentives for RMEs to offer pro bono services. Technical experts including wastewater treatment system operators, designers, and installers are licensed by the Virginia Department of Professional and Occupational Regulation. Authorizing pro bono technical services dedicated to low income communities to meet continuing education credit, or CEC, requirements could offer a "win-win" solution.

To assess the benefits of community or regional solutions over single onsite systems, where feasible, the Working Group acknowledged that the mapping tools described in this report

[11] https://www.epa.gov/sites/production/files/2015-06/documents/septic_guidelines.pdf

documenting "hot spots" in Virginia's coastal plain and recording locations with failed septic systems statewide, could provide VDH with the information necessary to determine where community or regional solutions can be prioritized over continued site-by-site repairs. Augmenting VDH guidelines to recommend use of these tools is warranted. Regional solutions are likely to be more cost effective and provide enhanced benefits to a community than multiple, often repetitive, on-site solutions and, therefore, should be prioritized where feasible. However, the Working Group found that VDH must have funding to employ interim solutions, such as pump and haul, while a longer term, regional solution is developed.

3. Eliminate Barriers to Fully Utilize Existing Resources and Increase Funding

The Working Group discussed the fact that the Commonwealth lacks sufficient funding to effectively address failing onsite or community sewage systems and small municipal sewer systems. While the Working Group supports additional funding for this critical need, it found that the application of existing state funding programs would be improved through the establishment of clear funding priorities and the requirement to adhere to these priorities in formulating grant decisions. Priorities should be articulated in an Executive Directive and state code establishing the Commonwealth's wastewater strategic policy and, at a minimum, should include the following:

A. Proactively direct state funding to resolve the backlog of existing and perpetual community and onsite system needs in disadvantaged communities and households.[12]

[12] The Work Group recognizes the need to first prioritize funding to ensure households have safe drinking water.

B. Where possible, ensure funding programs support the full suite of needs including the maintenance, repair, and replacement of onsite systems and connections to municipal wastewater treatment.

C. Where possible, municipal wastewater system rehabilitation and expansion should be the prioritized solution for long term sustainability.

D. Prioritize regional solutions over multiple single household or individual community solutions in areas of concern, including extending sewer lines to provide connections for disadvantaged communities.

E. Consider the cumulative, long-term costs of multiple onsite repairs and replacements versus the installation of a community-based solution to wastewater treatment needs.

F. Where appropriate, provide full funding prior to project construction to eliminate the barrier caused by grant programs that only reimburse homeowners after private funds are expended.

G. Maintain multiple state funding programs (described in Appendix B) but call upon program managers to consistently collaborate, coordinating grant requirements and timelines as much as possible. Collaboration with federal and private partners must also be emphasized.

H. Utilize information on the backlog of need to consistently advocate to the U.S. Congress for federal resources, including stimulus funding.

The Working Group documented multiple private, state and federal funding programs that provide support for adequate wastewater treatment (see Appendix B) and can often be combined in support of project planning, design, and construction. These loan and grant programs have differing requirements, timelines, and application procedures that can be difficult to navigate.

The Working Group recommends that VDH work with these private, state and federal funding partners to develop a toolkit for their local health districts' EHS. The toolkit should provide local VDH staff with funding options available to address onsite and community wastewater needs, train VDH staff on processes for applying for those funds, provide handouts and other outreach tools for VDH staff to use, and identify funding partners to join in support of wastewater needs. The Working Group recommends sharing this toolkit with local governments and utilities as well as planning district/regional commissions. Also, the Working Group should explore development of a single, simplified grant or loan application for the multiple state and federal funding programs. A similar effort has been successful for the Affordable and Special Needs Housing Program administered by DHCD.[13]

The Working Group discussed the value of non-state partners in addressing local wastewater needs, and specifically, the Southeast Rural Community Assistance Project, Inc. (SERCAP)[14] which began its efforts in the 1960's to bring safe drinking water to low-income rural residents in the Roanoke Valley. Over the years, SERCAP has expanded its services to include a wide range of financial, technical, and training assistance programs to improve water and wastewater infrastructure throughout the Southeastern United States. SERCAP is frequently the first resource local health department staff identify for low-income residents in need of assistance with onsite sewage system repairs, as they have provided assistance to residents throughout the Commonwealth for many years.

[13] https://www.dhcd.virginia.gov/asnh
[14] http://sercap.org/.

The state budget includes $1,568,442[15] in DHCD funds to be provided to SERCAP each year for operating costs and water and wastewater grants. However, with the average cost of $7,500 for a conventional onsite sewage system, and $18,500 for an alternative onsite sewage system, these funds do not meet the demand for assistance throughout the Commonwealth. SERCAP is a proven partner for wastewater infrastructure projects in the Commonwealth. Beyond current American Recovery Plan Act funding, the Working Group agrees that providing additional funding to established and proven programs is an effective first step in addressing wastewater infrastructure financial assistance needs in the Commonwealth.

The state budget also includes targeted planning and implementation funding to planning district commissions 1, 2 and 3 through DHCD's budget. This is critical funding to meet the needs of a fiscally distressed region, which has helped the local planning district commissions fund strategic initiatives with other agencies and by combining funding sources. This funding is also critical to help with regional planning efforts. The Work Group recommends maintaining this funding for planning district commissions 1, 2 and 3 and identifying additional fiscally distressed regions for similar assistance.

Another critical funding program emphasized during the Work Group's discussions is the Virginia Clean Water Revolving Loan Fund (RLF) Program, a self-perpetuating loan fund which provides a low interest financing option to Virginia cities, towns and wastewater authorities for the upgrade, expansion, extension, replacement, repair, rehabilitation, and/or additions to public wastewater collection and treatment facilities. Since 1987 the Virginia RLF Program has provided more than $4 billion in low-interest loans for wastewater and non-point source projects

[15] The Work Group recommends restoring the unalloted portion of this funding support for SERCAP.

in Virginia localities. Support has largely been dedicated to municipal wastewater treatment facilities yet funding can be used to repair and replace inadequate community and onsite wastewater treatment systems. As demonstrated by DEQ's pilot program in southwest Virginia, the RLF Program can also support connections of homes with onsite systems to municipal sewer systems.

The Working Group commends DEQ's intention to revitalize the onsite septic component of the Virginia RLF Program, in partnership with VRA, to ensure the Commonwealth is maximizing this program for the benefit of community and onsite wastewater treatment needs. In a manner similar to DEQ's recent revitalization of the Agricultural BMP Loan Program (also a RLF Program), DEQ will engage stakeholders for input, develop and share revised program guidelines, and seek approval from the State Water Control Board. The Working Group supports DEQ's continued partnership with local planning district/regional commissions but also recommends engaging new partners such as local community banks.

The Working Group recommends exploring with local governments and other stakeholders the potential benefits of establishing sanitary districts, authorized under Virginia Code § 21-113, to provide additional avenues to finance, construct, operate and maintain community-wide remedies for failing septic. These districts are able to borrow funds and receive grants from the RLF Program while individuals or private owners (such as HOA's) may not be eligible. In addition, sanitary districts are governed by their local boards of supervisors and, thus, provide greater stability and oversight than private entities. Implementing an incremental assessment or fee structure authorized for a sanitary district would also infuse local funding often necessary to match or supplement state and federal wastewater funds. The Working Group emphasized that establishing a sanitary district may be appropriate in some communities but may not be the right

approach for communities with a significant number of low-income households; therefore, economic feasibility must be addressed in any local decision to pursue a sanitary district.

APPENDICES

A. JOINT LETTER

B. FUNDING SOURCES SUMMARY TABLE

C. SB 1396

D. Working Group Members

E. Working Group Guidelines

F. Working Group 2021 Work Plan

American Rescue Plan Act (ARPA) Wastewater Funds Update

Karen Doran
Clean Water Financing and Assistance Program Manager
November 18, 2021

ARPA WW Funds Update

GA 2021 Special Session II – ARPA funds appropriated to DEQ

- $75,000,000 – septic, straight pipe, and sewer collection system repair, replacement, and upgrades
- $125,000,000 – combined sewer overflow (CSO) grants to specific localities – Alexandria, Lynchburg, and Richmond
- $100,000,000 – ENRC Program nutrient removal projects, and infrastructure improvements in Town of Pound and City of Petersburg

DEQ

ARPA WW Funds Update

Department of Treasury's Interim Final Rule

1. Requirement that States must give priority to projects that:
   - ensure compliance with applicable health and safety requirements,
   - address the most serious risks to human health, and
   - assist systems most in need on a per household basis according to State affordability criteria.
2. A recipient must return any funds not obligated by December 31, 2024, and any funds not expended to cover such obligations by December 31, 2026

DEQ

ARPA WW Funds Update

DEQ's draft Implementation Plan

- $75M – SSS ARPA funds
  - Establish eligibility and ranking criteria
  - Solicit applications for SSS ARPA fund grants
- $125M – CSO ARPA funds
  - Establish tracking system for locality 100% match certification
  - Solicit applications from 3 localities for CSO ARPA fund grants
- $100M – ENRC+PP ARPA funds
  - Establish eligibility and ranking criteria
  - Solicit applications from ENRC Program localities and Petersburg and Pound

DEQ

ARPA WW Funds Update

Next steps

- Implementation Plan under review
- Finish developing attachments and provide for review
- Finalize full Implementation Plan in coming months
- Begin accepting applications – calendar year 2022

DEQ

Contact information

Karen Doran, CWFAP Program Manager
karen.doran@deq.virginia.gov
804-698-4133

Program website
https://www.deq.virginia.gov/water/clean-water-financing

DEQ