

# CASE STUDY

COASTAL UTILITY REVOLUTIONIZES SANITATION WITH SUSTAINABLE COLLECTION SYSTEMS AND DIVERSE APPROACHES

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York County, Virginia, United States

York County, Virginia, nestled along the picturesque Chesapeake Bay, confronts the complex challenge of managing sewer systems in a region where both gravity and vacuum solutions are essential. These systems are not merely infrastructural components but vital guardians of public health and environmental integrity. The county's commitment to balancing these two methods reflects its dedication to ensuring both the safety of its community and the protection of the Chesapeake Bay watershed, one of the nation's most sensitive and vital ecosystems.



Seaford, York County Virginia

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## THE CHALLENGE

Complex sewer management challenges, including transitioning from outdated septic systems to public sewers, combating inflow and infiltration, and navigating high water tables, all exacerbated by its unique, navy-divided topography and the need to protect the bay's tributaries.

York County grapples with multifaceted sewer management issues, ranging from outdated septic systems to the intricate balance of combating inflow and infiltration while navigating the region's high water tables. These challenges are particularly pronounced due to the county's unique topography - a long, narrow stretch divided by U.S. Navy bases. Transitioning residents from septic to public sewer systems is paramount, not only for public health but also for mitigating the environmental risks posed by septic tanks leaching into the bay's tributaries.

## key outcomes

- 1. MIGRATION AWAY FROM SEPTIC SYSTEMS TO PUBLIC SEWER**  
York County's concerted efforts have resulted in a significant transition from private septic systems to public sewer, enhancing both public health and environmental sustainability.
- 2. COMBATING INFLOW AND INFILTRATION THROUGH PROACTIVE MEASURES**  
By implementing preventive maintenance programs and innovative monitoring techniques, the county has successfully minimized inflow and infiltration, thereby optimizing the efficiency of its sewer systems.
- 3. UTILIZATION OF GRAVITY AND VACUUM SYSTEMS FOR EFFECTIVE SEWER MANAGEMENT**  
York County's strategic deployment of gravity and vacuum sewer systems demonstrates a versatile approach to sewer management, tailored to the region's diverse topography and infrastructure needs.
- 4. ONGOING MAINTENANCE AND MONITORING TO ENSURE SYSTEM EFFICIENCY**  
Through continuous monitoring, rehabilitation efforts, and community engagement, the county maintains the operational integrity of its sewer systems, ensuring reliable service for its residents.
- 5. EASE OF OPERATION AND MAINTENANCE**  
York County's commitment to environmental responsibility extends beyond operational efficiency to community education and involvement, fostering a shared responsibility for preserving the health of the Chesapeake Bay watershed.

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### THE FLOVAC SOLUTION

Faced with the challenge of managing sewer systems in areas with high water tables, York County embraced vacuum sewer systems as a viable solution. Drawing inspiration from neighbouring jurisdictions' successful implementations, the county leveraged this innovative technology to address environmental concerns while maintaining cost-effectiveness and operational efficiency.

Central to this solution was the implementation of Flovac's vacuum wireless monitoring system. Infiltration from aging homeowner plumbing was causing cases of I&I (infiltration and Inflow) which was affecting the performance of the sewer network.

The monitoring system was able to pinpoint the exact location of infiltration on a number of occasions leading to the stability of the system.

The monitoring system has also helped operators with the ease of locating problems ahead of alerts from the pump stations SCADA system. Knowing the exact location of a problem leads to less time in the field being reactive and more time for operators to be proactive.



The York County operations team



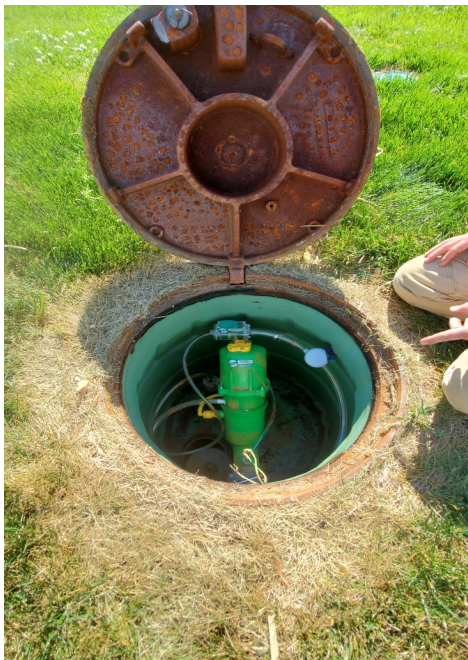
Flovac's Michael Pringle going over the new monitoring system



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## Reduced treatment costs

“The biggest advantage to having an ongoing flow monitoring program is the ability to quickly identify infiltration.”

*Tim Warthan*

## THE RESULTS

- **Establishment of vacuum sewer systems serving nine areas of the county:** Through strategic planning and investment, York County has successfully implemented vacuum sewer systems in critical areas, ensuring reliable sewer service for residents.
- **Implementation of strong preventive maintenance programs and continuous monitoring:** The county's proactive approach to maintenance, coupled with advanced monitoring systems, has led to a significant reduction in inflow and infiltration, enhancing system efficiency and longevity.
- **Significant reduction in inflow and infiltration through comprehensive rehabilitation efforts:** By investing in rehabilitation projects and employing advanced monitoring technologies, York County has successfully mitigated inflow and infiltration, minimizing system disruptions and ensuring optimal performance.
- **Utilization of advanced telemetry systems for real-time monitoring and quick response:** At the heart of York County's success with vacuum sewerage systems is the integration of advanced telemetry systems. These systems enable real-time monitoring of sewer networks, providing instant access to critical data on flow rates, system performance, and potential issues. This proactive approach allows for swift response times to any anomalies, minimizing service disruptions and ensuring the continuous operation of the sewerage infrastructure.
- **Community education and involvement in sewer system management for long-term sustainability:** York County actively engages its community in sewer system management, fostering a sense of ownership and responsibility among residents. By sharing data and information, the county empowers residents to contribute to the preservation of the environment and the sustainability of sewer systems for future generations.

## for more information

Join us in shaping a sustainable future. To learn more about how Flovac is leading the change in environmental engineering and how we can assist in your wastewater management needs, contact us at [info@flovac.com](mailto:info@flovac.com)