

Shared Conveyance System Project

Pinelands Commission Presentation

Date

Friday, September 11, 2026

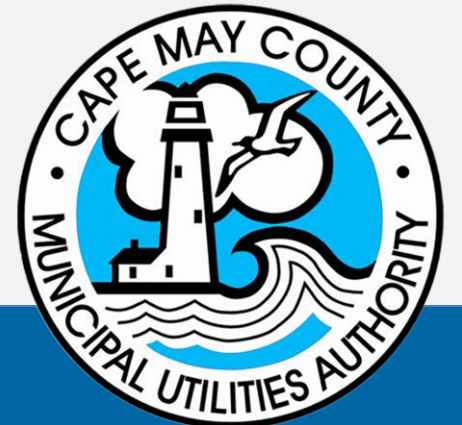
Presenters

Joseph Rizzuto, Executive
Director CMCMUA

Mark Montesano, Senior Project
Engineer, Mott MacDonald

Steven Morey, Senior Project
Manager, Mott MacDonald

Bruce Graham, Engineer
Borough of Woodbine





Vision

CMCMUA will be a leader...

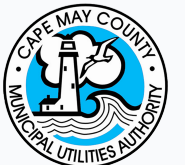
...in the pursuit and implementation of innovative, environmentally sustainable, and reliable wastewater and solid waste management systems.



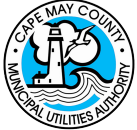
Mission

To efficiently implement...

...progressive and fiscally prudent solutions to safeguard the public health and protect Cape May County's unique natural environment in partnership with an engaged community and staff.



Shared Conveyance System Stakeholders



CMCMUA

- Owns and operates 4 Regional Wastewater Treatment Facilities and 24 pump stations, managing 31M GPD capacity.
- Implements Cape May County's Solid Waste Management Plan, operating a Landfill, Transfer Station, and extensive recycling programs.
- The 457-acre Landfill site spans Upper Township and Borough of Woodbine, with 376 acres in a Pinelands Town Management Area and 81 acres within a Pinelands Forest Area.



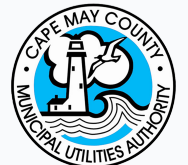
Borough of Woodbine

- Lies almost entirely within the Pinelands Management Area, including 250 acres in the National Reserve and Coastal Area Facilities Review Act (CAFRA).
- 4,156 acres designated as Pinelands Town, with the remainder classified as Rural Development and Forest Areas.
- Ranked as the 9th most distressed community in NJ by the Department of Community Affairs.

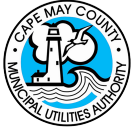


NJ DHS / WDC

- Owns and operates the Woodbine Developmental Center (WDC) on 250 acres of land in the Borough of Woodbine.
- WDC provides a comprehensive range of habilitation, behavioral, and medical services to men and women with developmental disabilities.



Feasibility Study Stakeholder Objectives



CMCMUA

Primary Goal:

The principle objective of the CMCMUA is to economically automate a cumbersome leachate hauling process through a more environmentally and civically advantageous method.



Borough of Woodbine

Primary Goal:

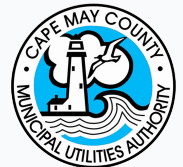
Pinelands municipality seeking to promote growth within its boundaries and proactively develop a centralized wastewater collection system to eliminate the use of aged and failing cesspools and septic systems.



NJ DHS / WDC

Primary Goal:

Seeks operational efficiency through elimination of current wastewater treatment facility and connection into Borough of Woodbine developed centralized wastewater collection system.



Feasibility Study Scope and Funding



Evaluation & Grant Details

Evaluation of the long-term, cost-effective, and environmentally beneficial alternatives for treating and conveying landfill leachate and wastewater compared against base conditions.

USDA Rural Development Element – \$90,000 Grant, subject to \$30,000 local match.



Stakeholder Matching Funds

November 20, 2014 MOU – Borough of Woodbine, The Pinelands Commission, and CMCMUA.

- CMCMUA – \$10,000 local funding match.
- Pinelands Commission – \$20,000 local funding match.



MOU Guidance & Review

MOU Guidance for Study Scope:

- Eliminate existing and future septic systems in the Borough's Pinelands Town Management Area to advance CMP water quality goals.
- Ensure future wastewater treatment and disposal needs are considered in the study.

Pinelands Policy and Implementation and Personnel and Budget Committees recommended financial assistance.

Pinelands Commission reviewed and provided comments on preliminary Study drafts.



Feasibility Study Stakeholder Base Conditions

CMCMUA

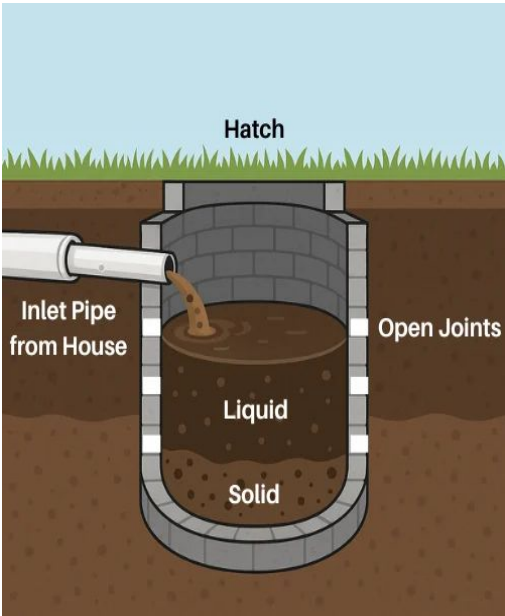
Continue to rely on **hauling** of Landfill leachate to CMCMUA's Seven Mile Beach/Middle Wastewater Treatment Facility.



* US EPA "Greenhouse Gas Equivalency Calculator" estimates approximately 86.9-metric tons of CO₂ will be generated as a result of combustion of 8,536 gallons of diesel fuel

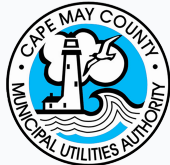
Borough of Woodbine

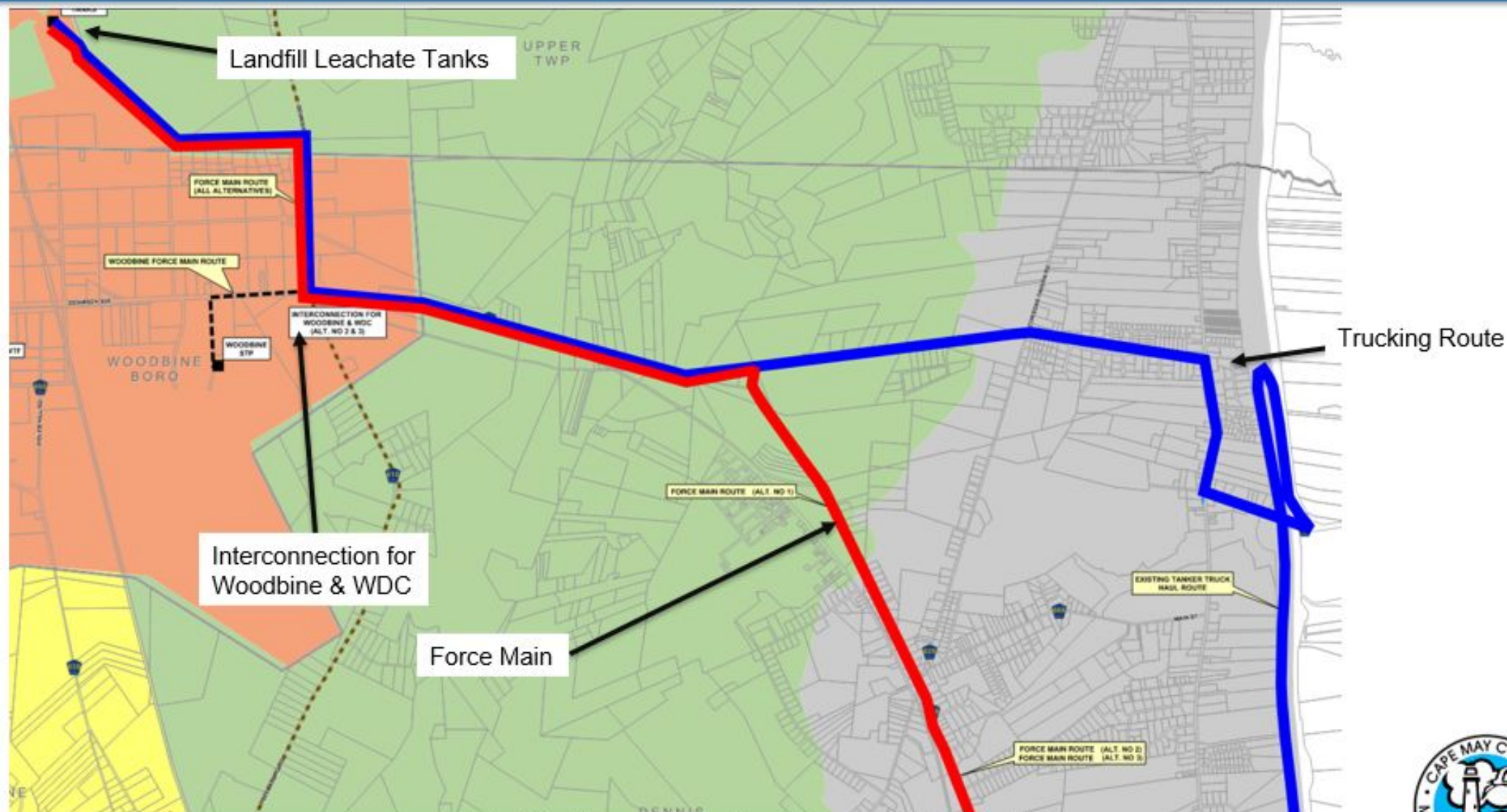
Continue to rely entirely on **aged, failing subsurface disposal systems** (cesspools/septic).



NJ DHS / WDC

Continue to operate an **independent treatment facility** discharging to groundwater.

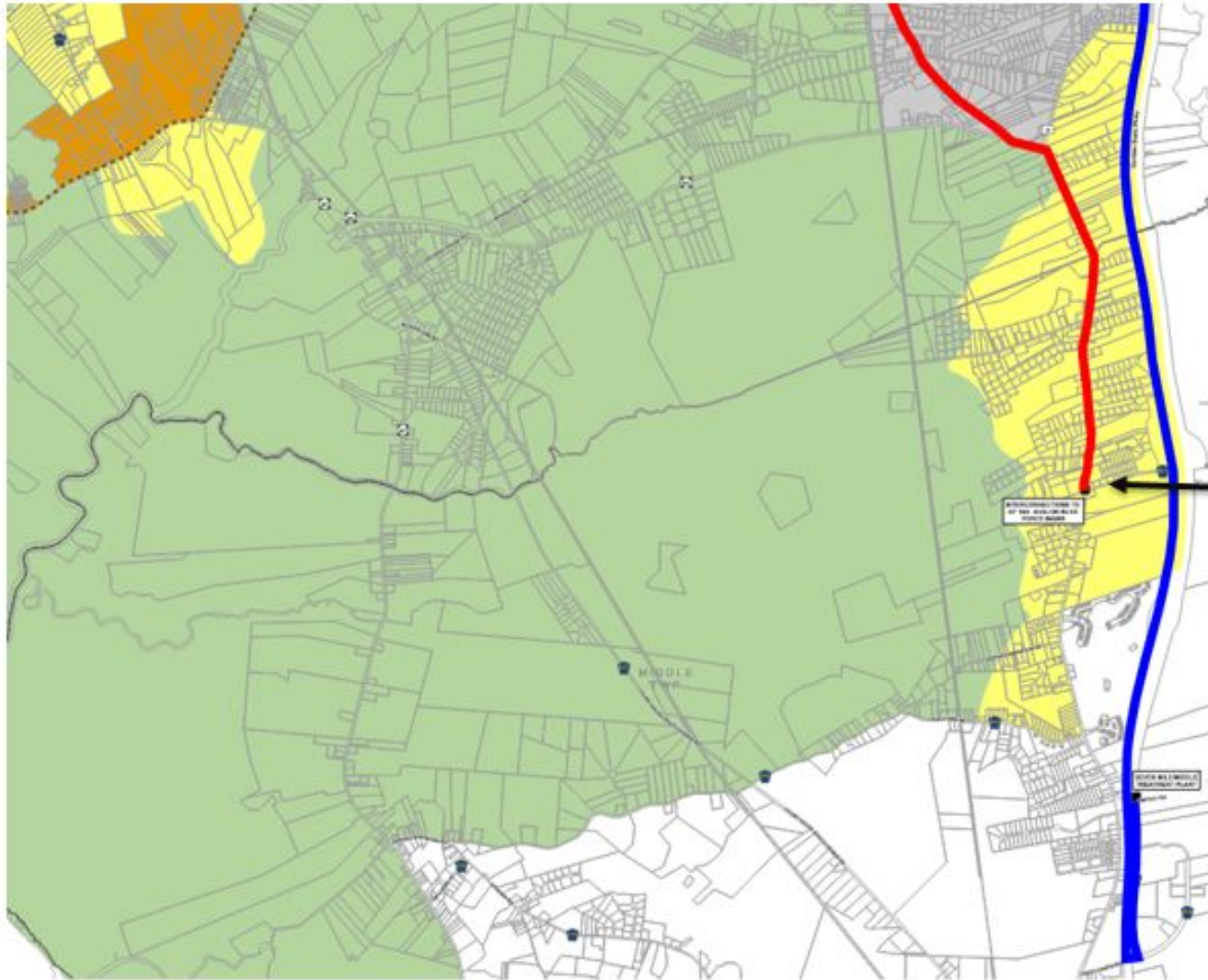




Force Main Vs Truck Hauling Map – North Side

Mott MacDonald Restricted





Force Main Vs Truck Hauling Map – South Side

Mott MacDonald Restricted



Feasibility Study Alternatives to Stakeholder Base Conditions

Alternative No. 1

Construction of a **4-inch diameter HDPE** force main to convey **leachate only** from the Landfill to the CMCMA's **Seven Mile Beach/Middle Wastewater Treatment Facility (SM/M WTF)**.

Alternative No. 2

Construction of a **4-inch HDPE leachate** force main and an **8-inch HDPE common** force main to convey **leachate** from the Landfill and **wastewater from the Borough of Woodbine** to the **SM/M WTF**.

Alternative No. 3

Construction of a **4-inch HDPE leachate** force main and a **10-inch HDPE common** force main to convey **leachate** from the Landfill and **wastewater from the Borough of Woodbine and NJ DHS / WDC** to the **SM/M WTF**.

Alternative No. 4

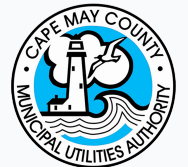
Construction of a **4-inch HDPE** force main to convey **leachate** only from the Landfill to the **Borough WTF** (including necessary upgrades to the WTF). **No other flows are considered.**

Alternative No. 5

Construction of a **4-inch HDPE** force main to convey **leachate** from the Landfill to the **Borough of Woodbine WTF** (including upgrades). **The Borough of Woodbine would also convey flows to the Borough of Woodbine WTF.**

Alternative No. 6

Construction of a **4-inch HDPE** force main to convey **leachate** from the Landfill to the **Borough WTF** (including upgrades). **The Borough and the WDC would also convey flows to the Borough WTF.**





Selected: Alternative No. 3

Shared Conveyance System

Constructing a shared system to convey Landfill leachate and Borough of Woodbine wastewater (including NJ DHS/WDC flows) to the existing CMCMUA’s Seven Mile Beach/Middle WTF.

Key Benefit

This collaborative system optimizes operational efficiency and regional infrastructure.



Rejection of Alternatives 4–6

Rehabilitation to the existing Borough of Woodbine WTF was found to be disadvantaged from economic, permitting, and discharge perspectives:

ECONOMIC

High Capital & Operating Costs

- Capital: \$8.0M – \$16.0M (2026 dollars)
- Operational: \$1.98M – \$3.26M per year (2026 dollars)

PERMITS

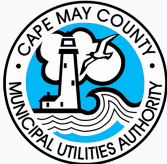
Complex Regulatory Pivot

Requires conversion of Borough of Woodbine WTF NJPDES permit from a sanitary discharge permit to an industrial discharge permit.

IMPACT

Heavy Environmental Disturbance

Receiving waters classification, trucking of sludge, and requirement for approximately 50-60-acres of land clearing to discharge of treated wastewater generated from Borough of Woodbine full build-out flows.



Technical Scope: Shared Conveyance System

Leachate Pump Station

New pump station building at the Landfill site with integrated odor control.

Pinelands Management Area (Upper Township):

- Pinelands Town

Force Main "A"

10,650 LF of 6-inch HDPE pipe from the Landfill to the interconnection point with the Borough of Woodbine sanitary sewer force main.

Material: High-Density Polyethylene (HDPE) chosen for robust chemical resistance and long service life.

Pinelands Management Area (Upper Township):

- Forest Area

Shared Conveyance System

38,500 LF of 10-inch HDPE pipe from interconnection with Borough of Woodbine sanitary sewer force main connecting to existing CMCMUA 24-inch force mains.

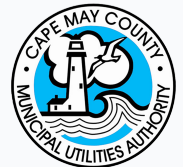
Route: Extends along C.R. 550 and C.R. 608 to the final connection point at U.S. Route 9 & Avalon Blvd.

Pinelands Management Areas (Borough of Woodbine, Dennis Township, and Middle Township):

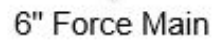
- Pinelands Town
- Forest Area
- Regional Growth Area
- Rural Development Area

Design Philosophy

- **Pavement Alignment:** Prioritize alignment within existing paved roadways to eliminate adverse short/long-term ecological impacts and existing utility conflicts.
- **Disturbance Minimization:** Minimize lateral disturbance to utilities, wooded wetlands, and threatened or endangered species habitats.



CMCMUA Shared Conveyance System



PINELANDS - PINELANDS TOWN

PINELANDS - FOREST AREA

PINELANDS - REGIONAL GROWTH AREA

PINELANDS - RURAL DEVELOPMENT AREA

Connection to Existing 24"
Raw Sewage Force Mains

Technical Scope: Shared Conveyance System Secondary Route Considerations

Secondary Route #1 Details

38,500 LF of 10-inch HDPE pipe connecting to existing CMCMUA 24-inch force mains.

Route: Extend along C.R. 550 to the Garden State Parkway to an existing CMCMUA force main at the terminus of Exit 13 (Avalon Blvd).

Pinelands Management Areas (Woodbine, Dennis, and Middle):

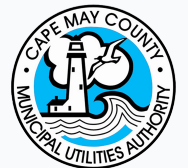
- Pinelands Town
- Forest Area
- Regional Growth Area



Route Rejection & Constraints

Secondary Route #1 consideration rejected by New Jersey Turnpike Authority.

The proposed Garden State Parkway corridor alignment is not feasible due to easement policy restrictions imposed by the Turnpike Authority.



Technical Scope: Shared Conveyance System Secondary Route Considerations

Secondary Route #2 Details

38,500 LF of 10-inch HDPE pipe connecting to existing CMCMUA 24-inch force mains.

Route: Extend along C.R. 550 to US Route 9 to an existing CMCMUA force main at the intersection of Avalon Blvd.

Pinelands Management Areas (Woodbine, Dennis, and Middle):

- Pinelands Town
- Forest Area
- Regional Growth Area
- Rural Development Area

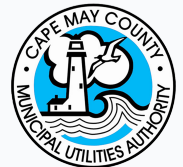


Route Rejection & Constraints

Secondary Route #2 consideration rejected.

This proposed secondary routing increases the Shared Conveyance System length by approximately 1.3 miles.

Shared Conveyance System length would decrease in Forest Area by 0.39 miles, but excavation difficulty on US Route 9 increases due to concrete roadbed below roadway.



Preliminary Assessment of Wetland, Rare Plant, and Rare Animal Resources along Shared Conveyance System Route

Environmental Assessment

NJDEP NJ-GEOWEB REVIEW

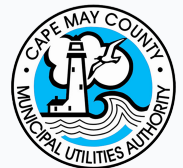
Based upon a review of the NJDEP's NJ-GeoWeb environmental resource mapper, it was determined that Mixed Wooded Wetlands are situated adjacent to or in close proximity to large sections of the proposed Shared Conveyance System route.

Impact Avoidance & Mitigation

ALIGNMENT DECISION

The selection of the proposed Shared Conveyance System alignment within existing paved roadways serves to preclude potential short-term and long-term adverse impacts on wooded wetlands.

This alignment strategy actively safeguards local populations of threatened or endangered plant and animal species.



Force Main



✓ Approximate Pinelands Wetlands ...

✓ Approximate 300 Foot Wetlands Buffer ...

CMCMUA Shared Conveyance System - Wetlands Map

Mott MacDonald Restricted



CMP Land Use and Development Standards that cannot or likely not be met

CMP Land Use Standard

7:50-5.23 Forest Area Standards

Governs the distribution and intensity of development and land use in Forest Areas to preserve ecological integrity.

Permitted Exception: N.J.A.C. 7:50-5.23(b)(12)

Municipalities may permit public service infrastructure intended to primarily serve the needs of the Pinelands.

Centralized wastewater treatment and collection facilities shall be permitted to service the Forest Area **only in accordance with N.J.A.C. 7:50-6.84(a)2.**

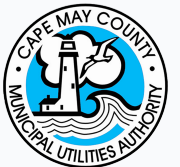
Route Context & Demonstration of Need

The Route Challenge

To connect the Landfill to existing CMCMUA infrastructure, the proposed 9.31-mile Shared Conveyance System must traverse 3.46 miles of mapped Forest Area (0.60 miles in Upper Township, 2.86 miles in Dennis Township).

Justification & Mitigation Measures

- **No Feasible Alternative:** No feasible alternative alignment exists to convey leachate and Borough of Woodbine wastewater to the CMCMUA's SM/M WTF.
- **Pavement Alignment:** Situated entirely within existing paved roadways (C.R. 550 and C.R. 608) to eliminate disruption.
- **Environmental Benefit:** Eliminates greenhouse gas emissions associated with the transport of leachate via tanker trucks through Forest Areas; Eliminates existing and future cesspools and septic systems in Borough of Woodbine.
- **Strict Protections:** Legal covenants and Wastewater Management Plan amendments to prohibit future connections.



CMP Land Use and Development Standards that cannot or likely not be met

CMP Land Use Standard

7:50-5.26 Rural Development Standards

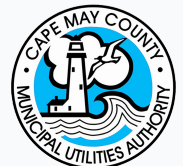
Governs the distribution and intensity of development and land use in Forest Areas to preserve ecological integrity.

(b) In addition to the residential uses permitted under 7:50-5.26(a), a municipality may permit any use which is compatible with the essential character of the Pinelands environment and is similar in character, intensity and impact to the following uses:

10. Public service infrastructure except that centralized wastewater treatment and collection facilities shall be permitted to serve the Rural Development Area only in accordance with N.J.A.C. 7:50-6.84(a)2.

Justification & Mitigation Measures

- **No Feasible Alternative:** No feasible alternative alignment exists for the conveyance of leachate and wastewater to the CMCMUA's SM/M WTF.
- **Pavement Alignment:** The proposed Shared Conveyance System is situated within existing paved roadways, preventing adverse short-term and long-term effects.
- **Environmental Benefit:** Eliminates greenhouse gas emissions associated with the transport of leachate via tanker trucks through Rural Development Areas; Eliminates existing and future cesspools and septic systems in Borough of Woodbine.
- **Strict Protections:** Committed to placing legal covenants (Sewer Line Conservation Restriction & Easement) to prohibit future connections.
- **Planning Alignment:** Wastewater Management Plan amendments to prohibit future connections.



Description of Design Measures to be taken to reduce extent of CMP non-conformity

Pavement Alignment

Measure I

ENVIRONMENTAL MITIGATION

Proposed alignment is situated within existing paved roadways, precluding short- and long-term adverse effects on mixed wooded wetlands and protected species.

Capacity Limits

Measure II

STRICT COVENANTS

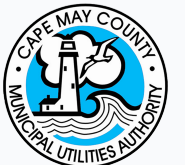
Design capacity is limited solely to stakeholder requirements, with legal covenants prohibiting future direct or indirect connections or sewer laterals.

Planning Integration

Measure III

WMP AMENDMENT

Incorporation into future Wastewater Management Plan amendments to strictly prohibit any connection to the Shared Conveyance outside the designated Pinelands Town.



Forest & Rural Development Areas

ROUTE CONTEXT

While the proposed route traverses these Forest and Rural Development areas to connect to existing CMCMUA infrastructure, extensive analysis indicates that no feasible alternative pathway exists.

Mitigation Measures

Infrastructure Placement

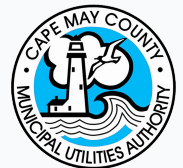
All infrastructure is situated entirely within existing paved roadbeds.

Conservation Restrictions

Legal covenants will be established and placed on the Shared Conveyance System to strictly prohibit future connections.

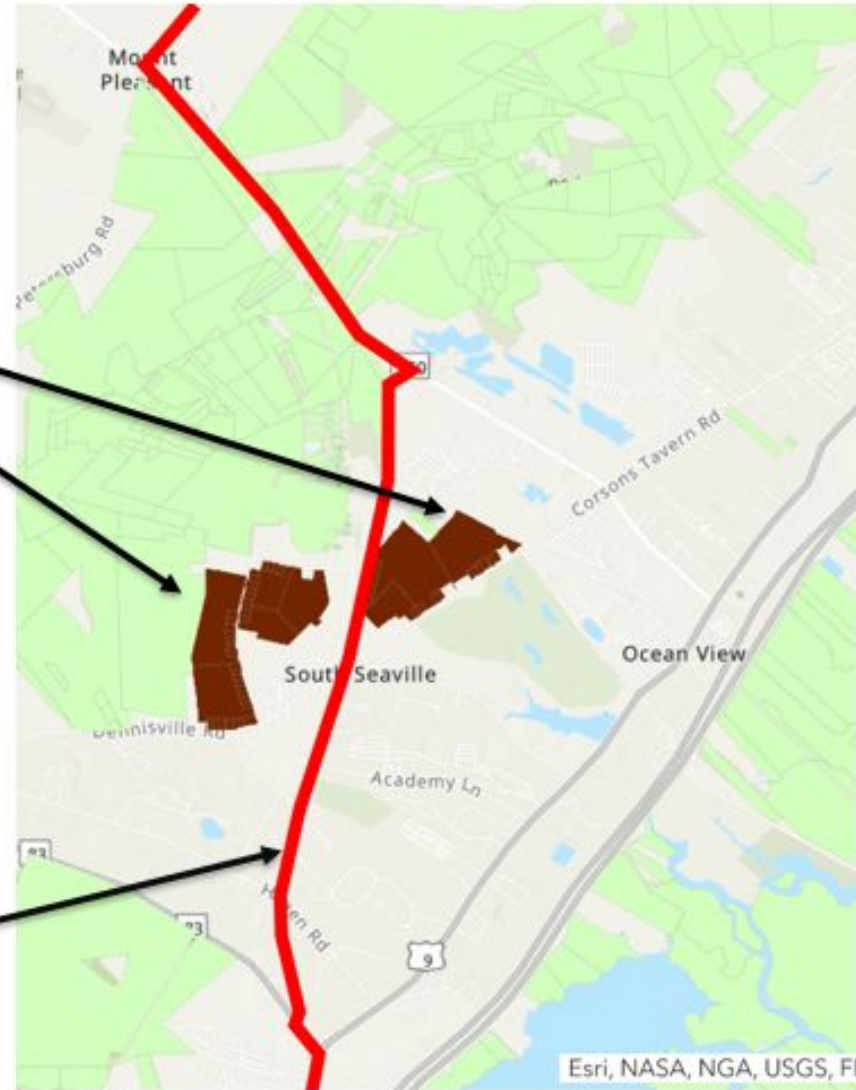
Planning Alignment

Incorporation into future Wastewater Management Plan amendments to prohibit future connections.



Open Space/
Farmland Preservation

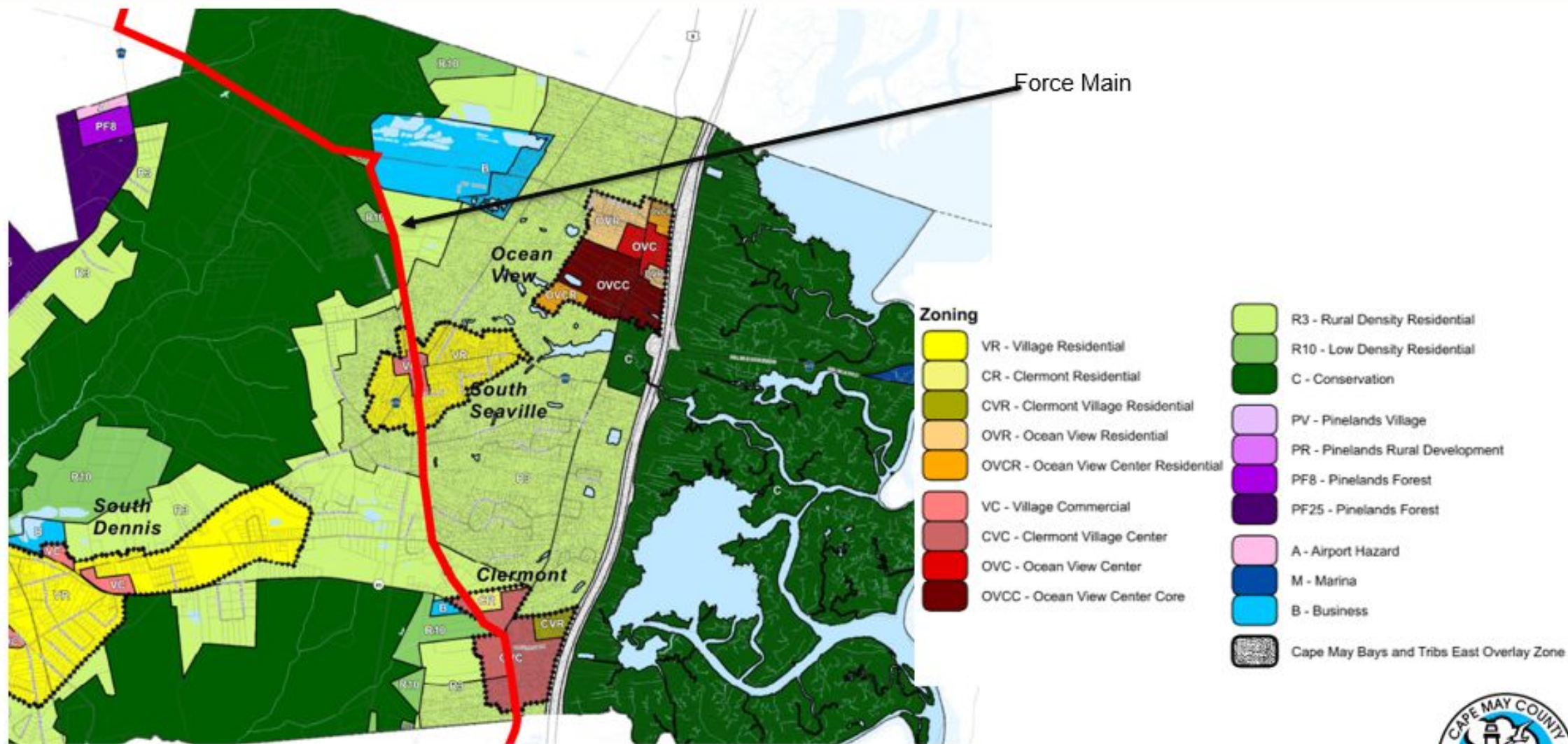
Force Main



CMCMUA Shared Conveyance System - Deed Restriction Lands Map

Mott MacDonald Restricted





CMCMUA Shared Conveyance System – Dennis Township Zoning Map

Mott MacDonald Restricted



Environmental Benefits and Regulatory Compliance

Greenhouse Gas Reduction

86.9 Metric Tons*

CO₂ ELIMINATED ANNUALLY

Based on projected diesel fuel combustion from current practice of hauling leachate.

Transitioning to the Shared Conveyance System directly eliminates regional truck emissions in Pinelands Management Areas.

*Equivalent to electricity used by 11 homes for one year; annual emissions of about 19 average gasoline-powered passenger vehicles.

Groundwater Quality

Cesspool/Septic and Groundwater Discharge Elimination

Eliminating subsurface cesspools/septic systems in the Borough of Woodbine directly safeguards groundwater quality.

- Residential lots in downtown area with cesspools/septic system are less than a ¼ acre; inconsistent with Pinelands nitrate dilution standard of 2 ppm at lot line.
- Upgrading systems to comply with current Pinelands septic requirements is restricted by both prohibitive costs and limited land availability.
- Elimination of groundwater discharge and replaces the aging WDC wastewater treatment facility with treatment at a reliable, well-maintained CMCMUA wastewater treatment facility.

Regulatory Compliance

Wetland Protection

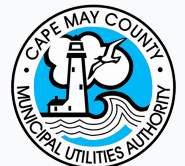
Alignment within paved roadways minimizes disturbance to Pinelands wetlands and habitats.

MOU Consistency

Wastewater generation aligned with the sewer service area designated under the 2012 MOU between the Pinelands Commission and the NJDEP.

N.J.S.A. 58:1A-7.1 Inter-basin Transfer of Water

Total water transport distance from the edge of the Pinelands National Reserve to CMCMUA Wastewater Treatment Facility is under 1.5 miles.



Project Financing and Funding Commitments

Financial Overview

The Stakeholders continue a full financial assessment and comprehensive evaluation of the project’s financing structure, encompassing potential financial sources.

Milestone Status

The construction cost estimates detailed here represent current projections formulated as of the 90% design completion phase.

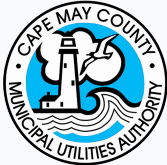
Total Estimated Construction Cost	\$14,562,000
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10% Cost Estimate Contingency	\$1,456,000
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Subtotal (with Contingency)	\$16,018,000
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Inflation Adjustment	\$3,902,000
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Total Estimated Project Cost	\$19,920,000
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Supplementary Information

resulting from Policy & Implementation Committee Meeting of July 31, 2026



Potable Water Supply

Source

Two wells (well #6 and well #7R) in the Cohansey Aquifer, at depths of 156 feet and 165 feet, respectively.

Volume

The Borough's Water Allocation Permit allows a diversion of 25 million gallons of water per month at a maximum rate of 1,400 gallons per minute, not to exceed 250 million gallons of water per year.

Customer Base

487 residential customers, 22 commercial customers, and 2 monthly customers; average water usage of 9-10 million gallons per month or 108-120 million gallons per year.



Borough of Woodbine Proposed Sewer Collection System

Funding

Source

In 2018, approved United States Rural Development grant and loan totaling \$5.223 million. Due to inflationary impacts on the sewer collection system and the Shared Conveyance System, the Borough has pursued NJ IBank Clean Water Program funding. The agreement between the Borough of Woodbine and the NJ DHS has a financial component which will offset some of the capital costs.

Sewer Collection System funding

Approximately \$3 million of United States Rural Development grant and loan.

CMCMUA Shared Conveyance System funding

Approximately \$1.4 million of United States Rural Development grant and loan.



Borough of Woodbine Proposed Sewer Collection System Construction Timeline

June 2027



Final Design

Final engineering and design plans finalized for bidding.

August 2027



Permitting

Currently ongoing and anticipated to be complete.

September 2027



Bidding

Bidding and contract award finalized.

October 2027



Construction

Mobilization and start of physical construction.

May 2029



Startup

System startup.



Future Mandate

Section 15-2.1 of the Borough of Woodbine Municipal Code states, “All buildings located on streets served by the Public Water Supply System, shall be connected with the public water supply main in the Borough.”

The Borough of Woodbine will introduce a mandatory connection ordinance for the sewer collection system similar to Section 15-2.1.



Borough of Woodbine Proposed Sewer Collection System

Phase 1

Service Borough of Woodbine Municipal Airport and Business Park, the area immediately around the Airport, and the NJ DHS WDC.

Phase 1 Projected Flow

100,000 gallons per day (70,000 gallons per day from NJ DHS WDC and 30,000 gallons per day from existing customers that currently use cesspools and septic systems).

Phase 2

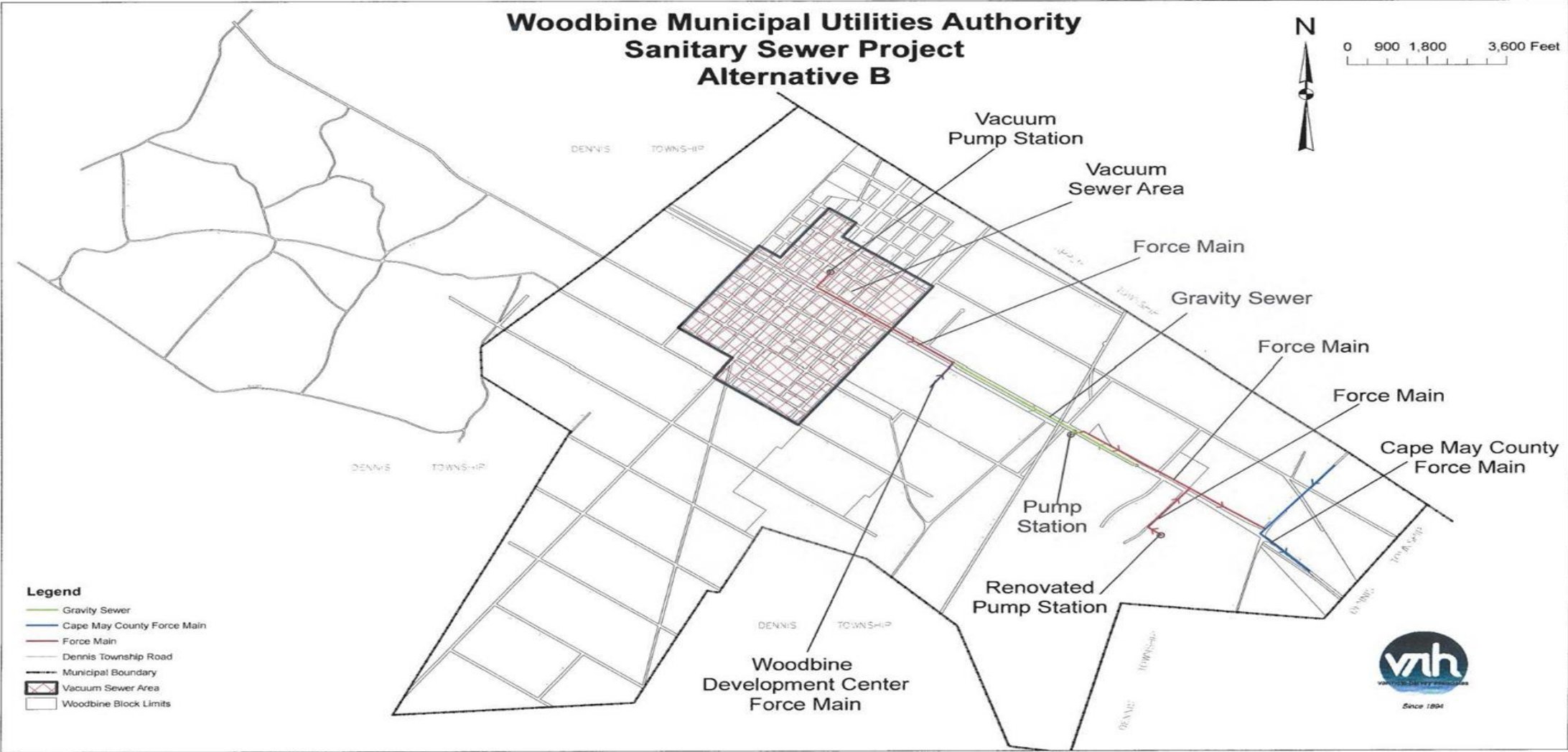
Service the downtown area located approximately 1.5 miles to the west of the Airport connecting approximately 450 residential properties.

Phase 2 Projected Flow

The approximately 450 residential properties all use septic systems and/or cesspools. In general, these properties are typically $\frac{1}{4}$ acre or smaller in size.



Borough of Woodbine Proposed Sewer Collection System



Conclusion & Discussion

Summary of Benefits

Economic

Cost-effective automation of CMCMUA leachate management and sustainable support for the Borough of Woodbine's growth.

Environmental

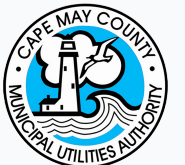
Significant reduction in carbon footprint by eliminating hauling of leachate; eliminates failing cesspools and septic systems; eliminates aged groundwater discharge wastewater treatment facility.

Civic

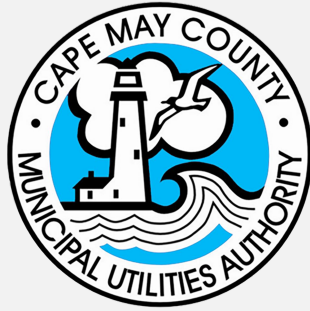
Strengthens wastewater infrastructure and treatment for the Borough of Woodbine, a Pinelands municipality, and the NJDHS/Woodbine Developmental Center.

Questions & Discussion

We welcome your feedback, questions, and open discussion regarding the project details, timeline, and regional environmental benefits.



Thank You



Cape May County Municipal Utilities Authority
www.cmcmua.com