

# Solid Waste

## Program Description

The Solid Waste Management Program provides refuse collection, recycling, and disposal services for County businesses and residents.

## Link to the Comprehensive Plan

Fairfax County's Comprehensive Plan Policy Plan Public Facilities Solid Waste and Recycling Section includes the following established objectives:

- Provide conveniently located solid waste management facilities and operations, while ensuring that these facilities area compatible with adjacent land uses.
- Provide an efficient, cost effective, and environmentally sound comprehensive solid waste management system that meets the current and future needs of the county.
- Provide a waste reduction and recycling program readily available to all, that meets the current and future needs of the County.

*Source: 2017 Edition of the Fairfax County Comprehensive Plan- Public Facilities, Amended through 4-9-2019*

## Program Initiatives

The County Solid Waste Management Program operates several facilities: The Solid Waste Transfer Station at the I-66 Solid Waste Management Complex on West Ox Road, the I-95 Solid Waste Management Complex in Lorton, and the Newington Collection Operations Facility.

Both County and private hauler collection vehicles deposit their waste at the I-66 Solid Waste Transfer Station where it is consolidated into tractor trailers for transfer to the Covanta Fairfax Inc. (CFI) facility in Lorton and other disposal facilities, such as the Prince William County Landfill. The I-66 facility also includes a closed municipal landfill and a recycling and disposal center for County residents and businesses.

The I-95 Solid Waste Management Complex contains a functioning ash landfill, a closed municipal waste landfill, and a recycling and disposal center providing services to residents and businesses. The I-95 Ash Landfill is used for the disposal of ash generated by Covanta's waste to energy facilities at the I-95 Landfill and in Alexandria and Arlington. Additionally, ash generated from the combustion of biosolids (sewage sludge) at Fairfax County's Noman Cole wastewater treatment plant is also deposited into the I-95 Ash Landfill.

The Newington Collection Operations Facility provides for refuse and recycling collection vehicles and ancillary equipment. The Newington Complex currently houses the County's collection fleet along with administrative facilities for personnel. Infrastructure costs are paid by refuse collection fees charged to approximately 42,500 residential County customers. About half of the County customers also receive curbside vacuum leaf collection service in the fall for an additional fee of \$0.011 per \$100 of assessed value of the home and property.

The County's current twenty-year Solid Waste Management Plan was adopted by the Board of Supervisors in 2004 and has been updated every 5-6 years since. The latest update was submitted to the Virginia Department of Environmental Quality in May 2020.

This Plan is required by state regulation administered by the Virginia Department of Environmental Quality and provides a framework for implementing solid waste management programs and facilities and demonstrates how the county will manage waste and recyclables for a 20-year period.

### Current Project Descriptions

1. **I-66 Administrative Building Renovation (Springfield District):** \$3,370,219 is estimated to fund renovations to the existing building and transfer facility at the I-66 Transfer Station. The renovation work includes replacement of the motor control center, renovation to the bathroom facilities, modifications to the existing permit office and scale house, new high-bay doors, installation of solar batteries/generator, and other related modifications necessary to meet present needs and building codes.
2. **I-66 Basement Drainage Renovation (Springfield District):** \$650,000 has been approved to provide for the repair and retrofit of the tipping floor drainage system under the I-66 Transfer Station. This drainage system processes all liquids produced from the tipping floor and any additional substances generated through the transportation of solid waste. Currently, the liquid is collected in floor drains located in the loading area of the basement. These drains are connected to an oil-sand separator located in the floor of the building and then moved to a grinder pump that pumps all collected material to the sewer force main located in front of the Transfer Station. The goal of this project is to assess the condition of the line connecting to the force main, repair if damaged, clean all laterals to the oil-sand separator, and to replace the existing pumping system. In addition, the entire lower roadways within the building will be re-surfaced, as this has never been done during the life of the facility. The long-term goal of this project is to solidify the facility's compliance with Solid Waste Regulations.
3. **I-66 Environmental Compliance (Springfield District):** \$1,750,669 is estimated to fund environmental management activities for the I-66 landfill which was closed in 1982. The work will include repairing areas which have settled due to decomposition of waste, operating and maintaining the landfill gas system that provides fuel for heating at several structures, conducting groundwater corrective action, installing a low-permeability cap on the existing slopes, and improving the storm water management system. There are current ongoing projects to remediate landfill gas migration. A groundwater treatment system is also being designed and installed to prevent off-site migration of impacted groundwater.
4. **I-66 Landfill Methane Gas Recovery (Springfield District):** \$4,350,000 has been approved to fund the installation and reconstruction of the methane gas extraction system at the I-66 facility, including collection wells, flares, compressor skids, and pipes. This project is a multi-phase project and may run across several fiscal years. During winter months, the recovered methane is being utilized to produce heat for several areas on site as well as maintenance garages for DVS and FCDOT. This project is necessary as the current system is aging.
5. **I-66 Transport Study/Site Redevelopment (Springfield District):** \$3,653,623 is estimated to provide the design, construction, reconstruction, and retrofit of the I-66 Transfer Station's existing traffic flow patterns, citizen's drop-off area, and the Household Hazardous Waste (HHW) Collections Facility. Improvements are needed to help prevent mixing of commercial and citizen's vehicles for safety. The recycling roll-offs prior to the citizen's scales will be moved, and the existing pavement replaced with greenspace, both for aesthetics and stormwater pre-treatment. The HHW facility handles most of all household hazardous waste processed within Fairfax County. The current facility is aging and in need of renovation and reconstruction to meet ever increasing HHW Collection Regulations and to provide safe disposal of substances

collected. Additionally, the original use of the facility was to only collect HHW five days a week. Service days have recently been increased to seven days a week due to the ever-growing volume processing demand of HHW within Fairfax County. Initial phases will include areas directly in front of the transfer building and a relocated commercial truck scale facility.

6. **I-95 Landfill Closure (Mount Vernon District):** \$2,440,098 has been approved to meet all state and federal regulations for placing the synthetic cap on the Area Three Lined Landfill (ATLL) unit and repairing or reconstructing the cap on the Municipal Solid Waste (MSW) unit at the I-95 Landfill. Four phases of closure will occur in the ATLL unit and consist of capping the landfill with a flexible membrane liner and/or low permeability soil to prevent the water infiltration from run-on and other sources. Modifications are proposed to the capped areas of the MSW unit to accommodate modernization of the Residential Disposal and Recycling Center and to make more storage areas available at the site for recyclables and other beneficial uses. This is an ongoing effort as various areas of the landfill are filled to final grades.

7. **I-95 Landfill Environmental Compliance (Mount Vernon District):** \$1,559,536 has been approved to support two environmental initiatives associated with the I-95 complex. The first initiative will provide for the continuation of ground water investigations and remediation efforts in accordance with the ground water Corrective Action Plan for the I-95 Landfill. This initiative will provide funding in the event that additional corrective measures are needed. Investigations and corrective action efforts may involve installation of ground water monitoring wells, injection of products intended to reduce concentrations of constituents of concern, and/or recover and treat ground water, among other alternatives. The second initiative will provide for Stormwater Improvements. Most of the existing storm water detention basins that manage stormwater flow at the I-95 landfill will be reconstructed or renovated with retrofits installed to improve stormwater flow and water quality discharge. This initiative includes assessment of the existing stormwater network, recommendations for improvements, design, regulatory support, construction, and construction management. These improvements are required to comply with Virginia Pollutant



*I-95 Energy/Resource Recovery Facility*

- Discharge Elimination System permit requirements.
8. **I-95 Landfill Leachate Facility (Mount Vernon District):** \$5,010,478 is estimated to fund the leachate collection system. A major project was completed in FY 2017 that included additional force mains, controls, upgraded pumping, landfill de-watering efforts, pretreatment, treatment, and storage facilities to process fluids collected in the leachate collection system installed at the Municipal Solid Waste (MSW) and ash disposal areas of the landfill. This project continues to address minor improvements to the system including replenish funds from recent pump & blower purchases, new H<sub>2</sub>S treatment system, pump repairs, and new flowmeter.
  9. **I-95 Landfill Lot B Redesign (Mount Vernon District):** \$1,750,000 has been approved for design, construction, reconstruction, and retrofit of the I-95 landfill's existing Lot B area which is used for various residential solid waste drop-off activities. The area currently handles recyclables, solid waste, mulch/yard waste, household hazardous waste, white goods, and encompasses other site activities such as vehicle fueling, washing, and maintenance. The goal of this project is to expand the paved area and re-arrange activities to allow for safer unloading and loading activities. A longer term future goal is to implement a covered structure within Lot B to further improve conditions for the residents, minimize operational nuisances such as contact

stormwater and wind-blown dust and litter, and to provide for new waste processing equipment and methods (baler, sorting system, etc.) to maximize recycling revenue and diversion rates.

- 10. I-95 Landfill Methane Gas Recovery (Mount Vernon District):** \$3,095,833 is estimated to fund for the installation and reconstruction of the methane gas extraction system at the I-95 Landfill, including collection wells and pipes. This project is a multi-phase project. All the recovered methane is being utilized to produce electricity for sale to Dominion Virginia Power, to replace natural gas used as fuel to combust hydrocarbons created during thermal treatment of biosolids at the Noman M. Cole, Jr. Pollution Control Plant, and to replace propane used to heat the I-95 Landfill maintenance shop during the winter. The major landfill gas piping replacement project that began in FY 2015 has been completed.
- 11. I-95 Landfill New Service Road (Mount Vernon District):** \$1,500,000 has been approved to fund for the redesign and rebuilding of I-95 Landfill's existing entrance road which is the primary access point for residential disposal and recycling customers and commercial haulers. This project will separate public and commercial customer traffic to address safety concerns and improve the operational flow of traffic through the facility.
- 12. I-95 Operations Building Renovation (Mount Vernon District):** \$498,952 has been approved to fund infrastructure improvements to the existing I-95 Landfill Operations facility. These improvements include replacing worn and leaking roofing, upgrading faulty HVAC controls, replacing entrance doors, adding entry security features, improving the locker rooms, rearranging interior walls/offices, and replacing flooring. The project is a multi-phase project over several years that will not expand the footprint of the existing site.
- 13. I-95 Transfer/Materials Recovery Facility (Mount Vernon District):** \$2,500,000 has been approved for the design and construction of an enclosed facility to handle general waste and recycling efforts at the I-95 Complex. This building will include two major components: a concrete based floor and walls/a fabric structure to enclose the facility. The base of the structure provides push walls for dumping and loading activities as well as sound suppression. The fabric structure provides protection from the elements, natural lighting, and dumping clearance inside the structure.
- 14. Newington Refuse Facility Enhancements (Mount Vernon District):** \$3,095,833 is estimated to fund infrastructure improvements to the existing Newington Operations facility. These improvements include replacing worn and leaking roofing, metal siding and gutters on the main building and the pole barn, upgrading faulty HVAC controls, replacing four obsolete garage doors, improving the men's locker room, and replacing tile flooring in the main building. The project is a multi-phase project over several years that will not expand the footprint of the existing site.
- 15. Solid Waste Storm Clean Ups (Countywide):** This is a continuing project that supports refuse collection and disposal services to citizens, communities, and County agencies through the Solid Waste General Fund programs consisting of the Community Cleanups, Court/Board-directed Cleanups, Health Department Referrals, and Eviction Programs. Funding was previously budgeted in Agency 87, Unclassified Administrative Expenses – Public Works Programs; however, to provide more transparency and the carryforward of balances at year-end, funding has been budgeted in a capital project within Fund 30010, County Construction and Contributions. This change results in no net impact to the General Fund. Funding of \$120,000 has been included in FY 2023 for this program.

# Project Cost Summaries

## Solid Waste

(\$000's)

	Project Title Project Number	Source of Funds	Budgeted or Expended Through FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total FY 2023 - FY 2027	Total FY 2028 - FY 2032	Total
1	I-66 Administrative Building Renovation SW-000011	X	\$2,902	\$468					\$468		\$3,370
2	I-66 Basement Drainage Renovation SW-000023	X	\$650						\$0		\$650
3	I-66 Environmental Compliance SW-000013	X	\$1,251	\$500					\$500		\$1,751
4	I-66 Landfill Methane Gas Recovery SW-000029	X	\$4,350						\$0		\$4,350
5	I-66 Transport Study/Site Redevelopment SW-000024	X	\$2,904		\$750				\$750		\$3,654
6	I-95 Landfill Closure SW-000019	X	\$2,440						\$0		\$2,440
7	I-95 Landfill Environmental Compliance SW-000016	X	\$1,560						\$0		\$1,560
8	I-95 Landfill Leachate Facility SW-000018	X	\$4,310	\$700					\$700		\$5,010
9	I-95 Landfill Lot B Redesign SW-000020	X	\$1,750						\$0		\$1,750
10	I-95 Landfill Methane Gas Recovery SW-000014	X	\$2,309	\$750					\$750		\$3,059
11	I-95 Landfill New Service Road SW-000027	X	\$1,500						\$0		\$1,500

# Project Cost Summaries

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(\$000's)

Project Title Project Number	Source of Funds	Budgeted or Expended Through FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total FY 2023 - FY 2027	Total FY 2028 - FY 2032	Total
12 I-95 Operations Building Renovation SW-000015	X	<b>\$499</b>						\$0		\$499
13 I-95 Transfer/Materials Recovery Facility SW-000022	X	<b>\$2,500</b>						\$0		\$2,500
14 Newington Refuse Facility Enhancements SW-000001	X	<b>\$2,856</b>	<b>\$100</b>	\$140				\$240		\$3,096
15 Solid Waste Storm Clean Ups 2G25-127-000	G	<b>C</b>	<b>\$120</b>	\$120	\$120	\$120	\$120	\$600	\$600	\$1,200
<b>Total</b>		<b>\$31,781</b>	<b>\$2,638</b>	<b>\$1,010</b>	<b>\$120</b>	<b>\$120</b>	<b>\$120</b>	<b>\$4,008</b>	<b>\$600</b>	<b>\$36,389</b>

Notes: Numbers in bold italics represent funded amounts. A "C" in the 'Budgeted or Expended' column denotes a continuing project.

Key: Source of Funds

B	Bonds
G	General Fund
S	State
F	Federal
X	Other
U	Undetermined