

# **SOLID WASTE FUTURE PLANNING COMPARISON STUDY**

**Appomattox County, Virginia**



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**Appomattox County, Virginia**



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Asheville, NC 28801  
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**PROJECT NO. 24.00712**

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In 2008, Appomattox County joined the Region 2000 Services Authority and all waste was transported to the Authority's Turnpike Road Landfill located within the City of Lynchburg, Virginia. When the Turnpike Road Landfill reached capacity, the Authority began operation of the Livestock Road Landfill in Campbell County. Based on the current waste disposal rates, the Livestock Road Landfill is projected to reach capacity in 2029. The Authority has begun preparing for the expansion of the landfill. The proposed landfill expansion requires expanding the landfill onto the adjacent property, which requires re-zoning to use as a landfill. The Authority submitted a request to re-zone the property to Campbell County. In January 2025, the Campbell County Board of Supervisors voted not to approve the re-zoning request. As of now, we understand that the plans for expansion are at a standstill.

Appomattox County currently operates seven (7) convenience centers located throughout the county. The convenience centers accept predominantly residential waste. The waste is hauled directly by a private contractor from the convenience centers to the Region 2000 Authority's Livestock Road Landfill. Appomattox County does not handle commercial waste within the county. Commercial waste is managed by individual businesses under private hauling contracts.

In August of 2024, Appomattox County issued a Request for Proposals to provide a Solid Waste Future Planning Comparison Study to evaluate options for disposal of waste from Appomattox County in preparation for the possibility of the closure of the Livestock Road Landfill in 2029. The request for proposals identified a proposed scope of services for the Phase 1 evaluation including an evaluation of identified options for disposal, a comparison of the pros and cons for each disposal option, development of budgetary cost estimates and preliminary timelines for implementation of each option, and a ranking of all options with a recommended solution. McGill Associates was awarded the contract to prepare the comparison study in November 2024.

McGill Associates and Appomattox County have had several meetings during the preparation of this report to further define the scope of the study and the disposal options. This report includes an evaluation of the following options for the disposal of Appomattox County waste for a 20-year planning period.

1. Direct-haul waste from each of the County's seven (7) convenience centers to a new out-of-county landfill.
2. Develop a new county-owned solid waste transfer station to receive waste and transport waste to a new out-of-county landfill.
3. Develop a new privately-owned solid waste transfer station to receive waste and transport waste to a new out-of-county landfill.

4. Develop the currently permitted Cells J and K at the Morning Star Road solid waste facility.
5. Develop a new landfill on the County-owned property located on the north side of Morning Star Road across from the existing solid waste facility.
6. Develop the Morning Star Road Facility through a facility purchase by a private company to develop and operate new waste disposal cells on the property.
7. Develop an onsite waste-to-energy facility at the Morning Star Road facility.

Our evaluation study included preparation of financial model, including preliminary development budgets, operational cost, and implementation timelines for each option. The financial model shows the projected total cumulative expenses for each disposal option. The disposal options are ranked in Table 1 based on the projected cumulative expenses from FY 2025 to FY 2045. The table also shows the proposed waste tonnage to be handled by the County and the projected cost per ton to dispose of waste. For all scenarios, we assumed that the County would continue to only manage the residential waste stream. For options 2, 4, and 5, we also included scenarios where the County would expand their waste managed to include commercial waste. These scenarios are shown in Options 2B, 4B, and 5B. The expanded waste scenarios provide revenue to the County for the handling and disposal of commercial waste. For options 3 and 6, revenue from a host fee is included to pay the County for any waste generated outside the county that is brought to the new facility.

**Table 1 - Disposal Options Ranked on Cumulative Expenses from FY 2025 to FY 2045**

Ranking	Option No.	Description	Total Cost	Total Waste Managed (tons)	Average Cost per Ton
1	6	Private Landfill	\$27,639,568	132,460	\$209
2	3	Private Transfer Station	\$31,582,068	132,460	\$238
3	1	Haul Direct	\$40,083,600	132,460	\$303
4	2	Transfer Station (Residential only)	\$57,094,026	132,460	\$431
5	2B	Transfer Station	\$60,043,544	320,720	\$187
6	5B	Cell L	\$62,961,718	320,720	\$196
7	4B	Cell J and K	\$67,921,018	320,720	\$212
8	4	Cell J and K (Residential only)	\$69,069,900	132,460	\$521
9	5	Cell L (Residential only)	\$69,570,200	132,460	\$525
10	7	Waste to Energy	\$102,308,884	637,920	\$160

Each of the options above include utilizing the County's membership in Region 2000 and continuing to direct-haul waste from the convenience center to the Livestock Road Landfill until the landfill reaches capacity in 2029.

Based on the above ranking, the least expensive waste disposal option for the County would be to solicit bids for a private company to purchase the landfill property and take over the development and operation of solid waste disposal, recycling management, environmental monitoring, closure of future waste cells, and post-closure care of all the current and future waste cells. The County would need to develop a contract with the private company for the company to manage and provide waste disposal to the county for an extended period. We have assumed that the County would continue to operate the convenience centers and be responsible for hauling waste from the convenience centers to a new landfill on Morning Star Road.

**1.1 Description**

Appomattox County owns and operates the solid waste facility located on Morning Star Road in Appomattox County, Virginia. The facility consists of a solid waste office and scale, recycling building, convenience center, closed landfill cells, and the sheriff's office shooting range. The County owns and operates six (6) additional convenience centers located throughout the county. Maps of the existing solid waste facility and the existing convenience centers are included as Figures 1 and 2.

Residents within the county dispose of waste at one of the seven convenience centers located within the county. The County currently only manages the residential waste generated within the county. In 2024, the total residential waste was approximately 5,700 tons. The waste that is collected at the convenience centers is hauled directly to the Region 2000 Livestock Road Landfill by a private contractor through an existing hauling contract. Appomattox County does not manage the waste generated by commercial businesses within the county. Commercial waste is managed by individual businesses under private hauling contracts.

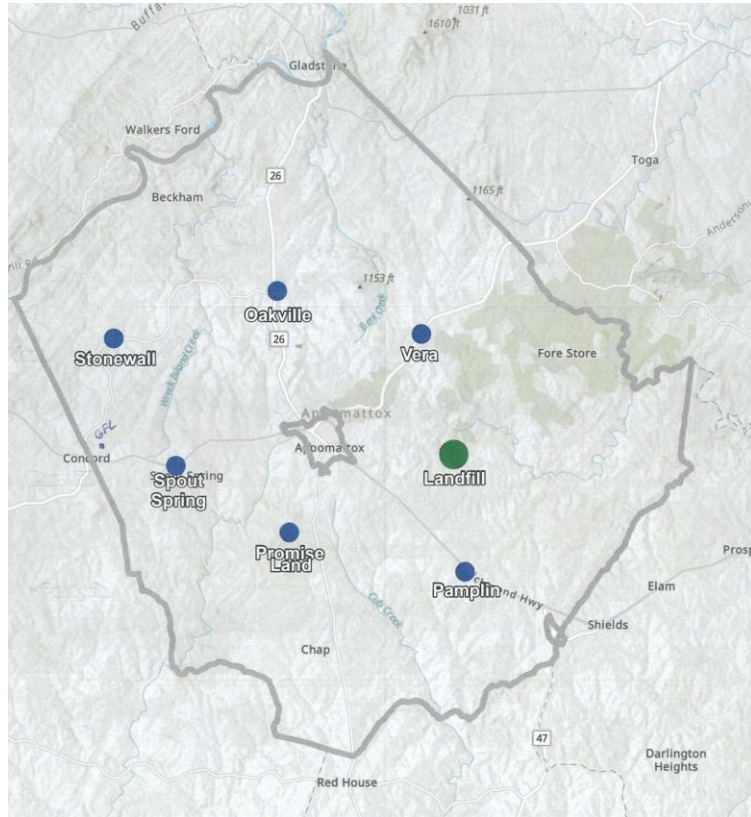
Residents can also drop their recyclable material at any of the convenience centers. Recyclable material is transferred from the convenience centers to the recycling building on Morning Star Road by a private hauling contractor. The recycling material is processed and baled by the County and then collected and transferred offsite by a recycling company.

### **Figure 1 – Morning Star Road Facility Site Map**





**Figure 2 – Convenience Centers Location Map**



Appomattox County is currently a member of Region 2000 Service Authority. The Authority currently operates the Livestock Road Landfill in Campbell County. The Campbell County Board of Supervisors has recently voted against a re-zoning request for the property adjacent to the landfill. The re-zoning was necessary to allow for the landfill expansion. The landfill is scheduled to reach capacity in 2029 and there is no clear path forward to expand the landfill. Therefore, Appomattox County has initiated the preparation of this solid waste disposal evaluation to identify a long-term disposal option for the county's solid waste. The disposal options listed below were developed from meetings with Appomattox County staff with the goal of evaluating long-term solutions for disposal of solid waste generated in Appomattox County for a 20-year planning period.

### 2.1 Description of Options

**Option 1 – Direct-haul from the Convenience Centers to a New Landfill** – Option 1 would match the current operation except that the waste would be hauled to a new out-of-county landfill. A private hauler would be contracted to pick up waste from each of the seven (7) convenience centers and hauled to an out-of-county landfill that would accept waste from Appomattox County. The County would need to solicit bids for a new hauling contract and disposal at a new out-of-county landfill. For the financial model, the Maplewood Landfill (Amelia) was used due to the combination of proximity to Appomattox County, willingness to accept the County's waste, and the lowest waste disposal fee. The current waste hauling contract cost was used as a basis to project the new hauling cost to Maplewood Landfill. Capital projects include participation in closure of the Region 2000 Livestock Road Landfill and upgrades to the existing convenience centers. Option 1, therefore, includes:

- Hauling and disposal fees until 2029 at the Livestock Road Landfill
- Update to the Solid Waste Management Plan
- Upgrades to the convenience centers
- Operation cost based on the current operational budget
- Cost for hauling waste from convenience centers to the Maplewood Landfill through a new hauling contract
- Closure cost and Post-closure Cost for Livestock Road Landfill
- Disposal Fees at Maplewood Landfill (Amelia)

**Option 2 – Develop a New County-Owned Transfer Station** – Option 2 involves the development of a new solid waste transfer station at the solid waste facility site on Morning Star Road. The transfer station should be sized at a minimum to handle the projected residential and commercial waste flow.

The County would manage all aspects of the transfer station, convenience centers, landfill post-closure care, and the current recycling operation. The County would need to solicit new waste

hauling contracts for transferring waste from the convenience centers to the transfer station and to transfer waste from the transfer station to an out-of-county landfill, as well as, a landfill disposal contract with the out-of-county landfill. The development of a county-owned transfer station would need to begin no later than January 2027 to be ready to accept waste beginning in 2029. Option 2 includes:

- Hauling and Disposal Fees until 2029 at the Livestock Road Landfill
- Update to the Solid Waste Management Plan
- Upgrades to the convenience centers
- Transfer station building (approximately 6,800 SF)
- New scales and scale house
- New equipment to operate the transfer station
- Site Work for transfer station
- Cost for hauling waste from convenience centers to transfer station
- Cost for hauling to Maplewood Landfill
- Closure cost and Post-closure Cost for Livestock Road Landfill
- Expanded operational cost with the addition of three (3) new full-time employees to operate the transfer station
- Disposal Fees at Maplewood Landfill (Amelia)
- Option 2B includes revenue from the disposal of commercial waste within the county

**Option 3 – Privately-Owned Transfer Station** – Option 3 involves the development of a solid waste transfer station by a private company within Appomattox County. The County would operate similar to as they do now. Waste would be hauled from the convenience centers to the new transfer station instead of the Region 2000 landfill. The private owner of the transfer station would be responsible for managing the waste at the transfer station and hauling waste to the new landfill. This option does not include any capital improvements other than proposed convenience center upgrades. The County will still manage waste at the convenience centers and the current recycling operation. The County would need to begin in 2026 to solicit bids for development of the transfer station to be ready to begin operation in 2029. Option 3 includes:

- Hauling and disposal fees until 2029 at Livestock Road Landfill
- Update to the Solid Waste Management Plan
- Upgrades to the convenience centers
- Operation cost based on the current operational budget
- Cost for hauling waste from the convenience centers to the transfer station – for the purpose of the financial model, we have assumed that the transfer station would be located at or near the Morning Star Road facility
- A disposal cost at the new transfer station to cover hauling and waste disposal at the out-of-county landfill
- Closure and post-closure care cost for Livestock Road Landfill
- Revenue from a host fee agreement for waste coming to the transfer station from outside the county

**Option 4 - Develop Cells J and K at Morning Star Road Facility** – Option 4 involves the development of Cells J and K. The construction of these cells was previously permitted on March 31, 2011. See site plan in Figure 3 below. Based on our recent discussions with VADEQ staff, due to the extended time period from the original permit approval, the Major Permit Amendment documentation will have to be resubmitted to VADEQ. Figure 3 illustrates the previously permitted layout for Cells J and K.

The construction cost estimates are based on our review of the previously approved permit documents. The documents show beginning development with the construction of Cell K (4.7 acres) and leachate holding pond. Cell K has approximately 226,000 cubic yards of waste capacity with a projected life of approximately 6.9 years based on an annual disposal rate of approximately 16,000 tons per year. For Option 2, residential waste only, Cell K will provide capacity through FY 2045. Cell K development would need to begin no later January 2026 to be ready for operation by July 2029.

For Option 2B, assuming that Cell K is constructed and ready for operation in July 2029, the cell would reach capacity in June 2036. Cell K development would need to begin no later January 2026 to be ready for operation by July 2029. The total footprint of Cell J is 18.1 acres and has approximately 1,100,000 cubic yards of waste capacity with a projected life of approximately 34 years based on an annual disposal rate of approximately 16,000 tons per year. To achieve landfill capacity both residential and commercial waste for the 20-year planning period, Cell J Phases 1 and 2 will need to be constructed. For the financial model we projected that Cell J, Phase 1 would be constructed and ready for operation in January 2036. Cell J Phase 2 would be constructed and ready for operation in January 2042. Cell J Phases 1 and 2 provide an additional 16 years of life and are projected to reach capacity in April 2052. The existing sheriff's office shooting range lies within the footprint of Cell J and would have to be relocated prior to development.

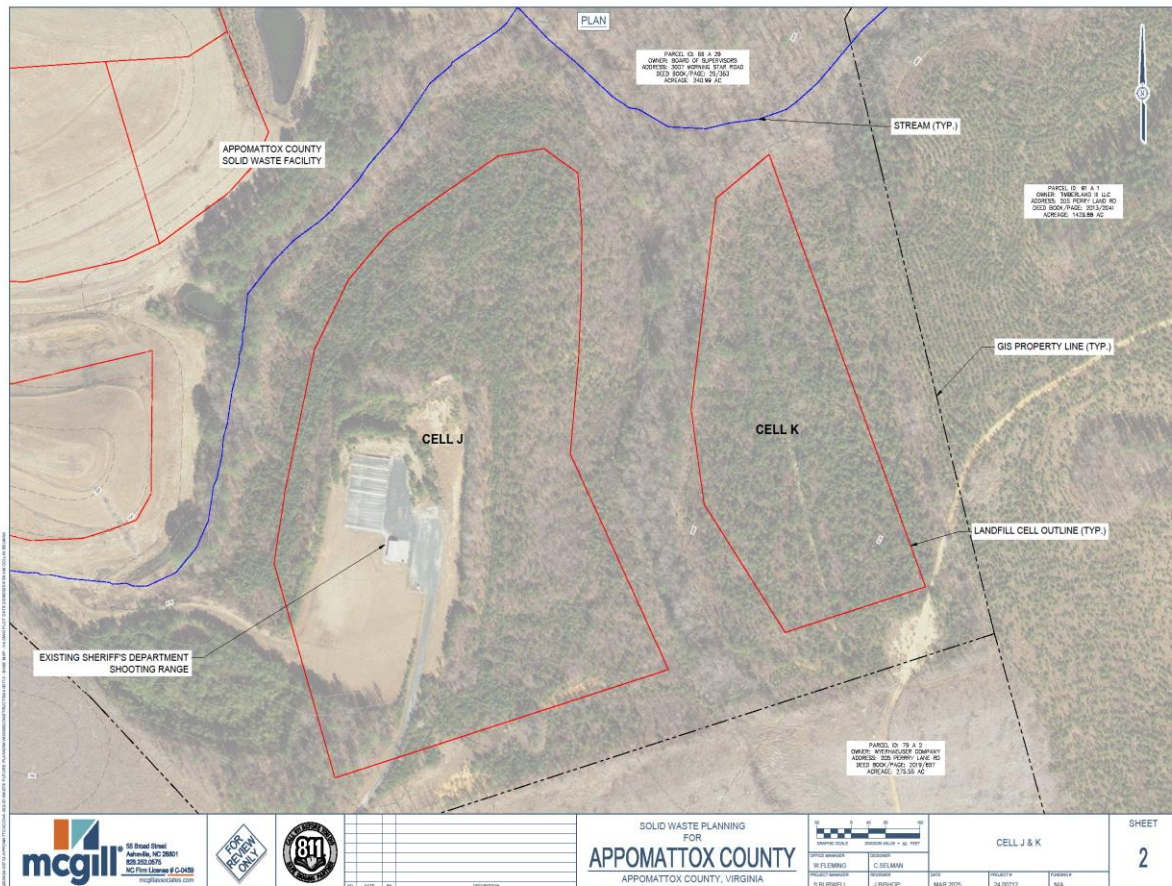
Option 4 includes:

- Hauling and Disposal Fees until 2029 at Livestock Road Landfill
- Update to the Solid Waste Management Plan
- Upgrades to the convenience centers
- Part B – Permit renewal for Cells J and K
- Construction of new landfill Cells J and K at the solid waste facility on Morning Star Road – 20-year planning period requires all of Cell K and Cell J Phases 1 and 2
- New scales and scale house
- New equipment to operate the landfill
- Cost for hauling waste from convenience centers to transfer station
- Cost for hauling leachate to WWTP
- Closure cost for Livestock Road Landfill



- Closure cost and additional post-closure care cost for Cell K and Cell J Phases 1 and 2
- Expanded operational cost with the addition of four (4) new full-time employees to operate the landfill
- Option 4B includes revenue from the disposal of commercial waste within the county

Figure 3 - Cells J and K Preliminary Site Plan



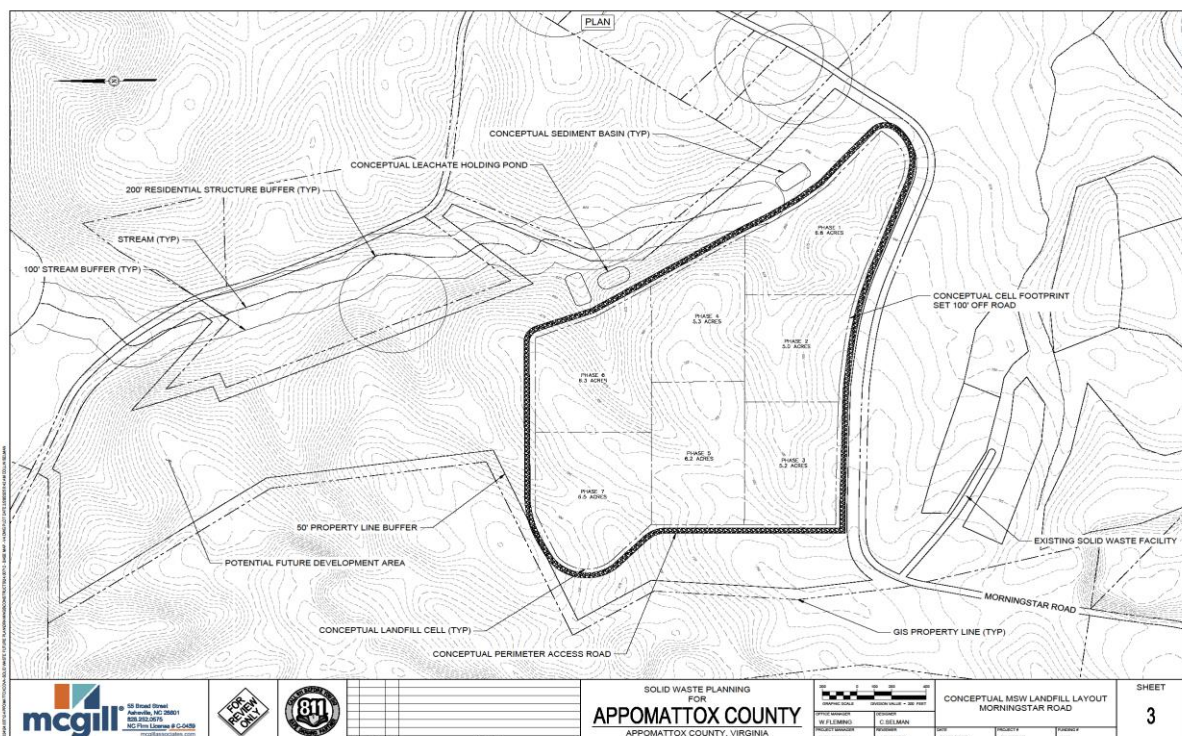
**Option 5 - Develop New Landfill on County-Owned Property on the North side of Morning Star Road** – Option 5 involves the development of a new landfill cell on county-owned property on Morning Star Road across from the existing solid waste facility. See Figure 4 for the preliminary site plan. Based on a preliminary review, Cell L, could be developed with approximately 41.3 acres of new waste area. A preliminary site plan for Cell L is shown below in Figure 4.

For Option 5, the development of Cell L Phase 1 would provide capacity for the 20-year planning period through FY 2045. For Option 5B, Cell L Phases 1 and 2 would be required to provide for waste disposal for the 20-year planning period.

The development of Cell L would require full permitting through VADEQ including both Parts A and B. Due to the extended time for permitting, design, and construction, the development of Cell L would have to begin no later than July 2025 to be ready for operation by July 2029. Option 5 includes:

- Hauling and disposal fees until 2029 at Livestock Road Landfill
- Update to the Solid Waste Management Plan
- Upgrades to the convenience centers
- Parts A and B permitting for Cell L Phases 1 and 2
- Construction of new landfill Cell L Phases 1 and 2 at the solid waste facility on Morning Star Road for 20-year planning period
- New scales and scale house
- New equipment to operate the landfill
- Cost for hauling waste from convenience centers to transfer station
- Cost for hauling leachate to WWTP
- Closure cost for Livestock Road Landfill
- Closure Cost and additional Post-Closure Care cost for Cell L Phases 1-2
- Expanded operational cost with the addition of four (4) new full-time employees to operate the landfill
- Option 5B includes revenue from the disposal of commercial waste within the county

Figure 4 – Cell L Preliminary Site Plan



**Option 6 – Landfill Property Purchased and Landfill Developed by a Private Company –** Option 6 involves the development of selling the landfill property (approximately 240 acres) to a private company for the purpose of taking over the landfill operation from the County. The private entity would be responsible for all aspects of the operation at the Morning Star Road Facility including development of new waste cells, operation of the landfill, managing recycling, environmental monitoring, and closure and post-closure activities of the existing and future cells. The County will still manage waste at the convenience centers and the current recycling operation. Waste would be hauled from the convenience centers to the new landfill through a new hauling contract. This option does not include any capital improvements other than proposed convenience center upgrades. The County would need to begin in 2025 to solicit bids to enter into a contract for the purchase of the landfill property and operation of the landfill facility to be ready to begin operation in 2029. Option 6 includes:

- Hauling and disposal fees until 2029 at Livestock Road Landfill
- Update to the Solid Waste Management Plan
- Upgrades to the convenience centers
- Operation cost based on the current operational budget with removing operation of recycling operation from the budget
- Cost for hauling waste from the convenience centers to the new landfill on Morning Star Road
- Disposal cost at the new privately owned landfill disposal
- Closure and post-closure care cost for Livestock Road Landfill
- Revenue from the sale of the landfill property
- Revenue from a host fee agreement for waste coming to the landfill from outside the county

**Option 7 – Develop a Waste-to-energy Facility at Morning Star Road Facility -** Option 7 involves the development of a Waste-to-energy (WTE) Plant at the Morning Star Road facility. Waste-to-energy refers to the combustion of municipal solid waste (MSW) to convert the waste into electricity or heat. Common technologies are incineration, gasification or Pyrolysis, or aerobic digestion. The most common waste-to-energy system in the U.S. is the incineration through a mass-burn system. In this system, unprocessed waste is burned in a large incinerator with a boiler and generator to produce electricity. <sup>1</sup>Generating electricity in a mass-burn waste-to-energy plant is a seven (7) -step process:

1. Waste is dumped from garbage trucks into a large pit.
2. A large claw on a crane grabs waste and dumps it into a combustion chamber.
3. The waste (fuel) is burned, releasing heat.
4. The heat turns water into steam in a boiler.
5. The high-pressure steam turns the blades of a turbine generator to produce electricity.
6. An air-pollution control system removes pollutants from the combustion gas before it is released through a smoke stack.
7. Ash is collected from the boiler and the air-pollution control system.

\*1 -from US Energy Information Administration, dated October 29, 2024



In 2024, there were only 75 WTE facilities in the U.S. Compared to other countries around the world, the U.S. has a relatively high availability of open land. MSW combustion accounts for a small portion of waste management because of the low-cost of building a landfill compared to the high cost of building a WTE facility.

The development of a WTE Facility requires access to the electrical power grid to discharge the generated electricity. In many rural areas, access to a usable electrical grid connection point requires installation of additional electrical power lines, further increasing the cost of the facility. The mass-burn system reduces the waste mass by approximately 80% by weight. The residual 20% by weight of ash from the incineration process must be disposed in a Subtitle D or Subtitle C landfill. If ash does not meet the requirements for a Subtitle D landfill, then ash would have to be transported to a Subtitle C, hazardous waste landfill.

A full evaluation of the development of a Waste-To-Energy facility was not included in the scope of this evaluation. We have made a reasonable attempt to identify the components of a facility and determine an estimated cost for development. Due to the initial cost and maintenance, we do not believe this a cost effective solution for Appomattox County. If the County wished to pursue this option, we would recommend a dedicated study be prepared to fully investigate the development of a WTE facility. The permitting process for a WTE facility could take years to complete. We estimate that the permitting and construction of the WTE upgrades and to the electrical grid could take 10 years. We have assumed that the County would begin development of the facility in FY 2026, therefore the facility would not be on-line until FY 2036 and one of the other options would have to be initiated to provide an interim waste disposal option during the permitting process. We have assumed that the County would operate under Option 1 until the WTE is operational.

Option 7 would include, at a minimum, the following components:

- Hauling and Disposal Fees until 2029 at Livestock Rock Landfill
- Direct haul waste from convenience centers to Amelia Landfill under Option 1 until the WTE can operational in FY 2035.
- Upgrades to the convenience centers
- Design and Permitting for Waste-to-energy Facility with capacity up to 200 tons/day
- Construction of new Waste-to-energy Facility
- Construction of electrical distribution lines to connect to electrical grid
- New scales and scale house
- New equipment to operate new Waste-to-energy Facility
- Cost for hauling waste from convenience centers to Waste-to-energy Facility
- Cost for hauling residual waste to the Maplewood Landfill
- Closure and post-closure care cost for Livestock Road Landfill and the closed cells at the Morning Star Road facility.



- Solid waste operational cost plus additional eight (8) new full-time employees to operate Waste-to-energy facility
- Disposal Fee for the residual ash at Maplewood Landfill or hazardous waste landfill
- Revenue for waste disposal from commercial and out-of-county waste
- Revenue from sale of electricity from WTE

## 2.2 Financial Model Assumptions

**Salaries and Benefits** – Salaries and benefits is based on the current FY 2025 budget and includes cost for the current full time and part time employees. The base cost has been escalated each year by 4% through the 20-year planning period. For options 2, 4, 5, 6 and 7, the number of employees has increased to handle the additional services required. Option 2 adds 3 new employees, Option 4 and 5 adds 4 new employees, and Option 7 adds, 8 new employees. For Option 6, the number of full-time employees has been reduced due to a decrease in the workload required.

**Continuing Existing Solid Waste Hauling Operation** - All residential waste is collected at the convenience centers located within the county. Currently, waste is then transported directly from the convenience centers to Livestock Road Landfill by a private hauler through an existing hauling contract. Due to the short timeframe for development of any of the disposal options between now and when the Livestock Road Landfill is projected to close, all options include continuing to utilize the County's current membership with Region 2000 Service Authority until 2029 or when the landfill closes. This will include continuing the contract with the current private hauler to haul waste from each of the convenience centers to the Livestock Road Landfill and utilizing the member rate for the waste disposal fee (Tip Fee) at the landfill. The cost for hauling to Livestock Road Landfill has been escalated at rate of 2% per year through FY 2029.

**Waste Hauling Contract** –Under any option, new hauling contracts would need to be developed to haul waste from the convenience centers to either a new landfill, a new transfer station, or a new waste-to-energy facility beyond FY 2029. In Option 1, the projected hauling cost is based on hauling from convenience centers directly to Maplewood Recycling and Waste Disposal (Amelia) landfill in Jetersville, Virginia. For options 2 and 7, the projected hauling cost includes hauling residential waste from the convenience centers to Morning Star Road facility and hauling all waste from a facility at Morning Star Road to Amelia. Options 3, 4, 5, and 6 only include hauling residential waste from the convenience centers to a new Morning Star Road facility. The projected hauling cost has escalated at a rate of 2% per year through FY 2045.

**Projected Waste** - The County currently only manages the residential waste generated within the county. In 2024, the total residential waste was approximately 5,700 tons. The waste that is collected at the convenience centers is hauled directly to the Region 2000 Livestock Road Landfill by a private contractor through an existing hauling contract. Appomattox County does not manage the waste generated by commercial businesses within the county. Commercial waste is

managed by individual businesses under private hauling contracts. A typical disposal rate for county waste disposal is 1.0 ton per person per year. The county's estimated population in 2024 was 16,748. This population equates to approximately 17,000 tons per year of waste generated within the county, which includes both residential and commercial waste. See Table 2 for the projected waste for both residential and commercial within the county for the 20-year planning period.

**Table 2 – Projected Waste**

FY	Annual Residential Waste (tons)	Annual Commercial Waste (tons)	Total Annual Waste (tons)
2025	5,700		
2026	5,757		
2027	5,815		
2028	5,873		
2029	5,931		
2030	5,991	11,876	17,867
2031	6,051	11,995	18,046
2032	6,111	12,115	18,226
2033	6,172	12,236	18,409
2034	6,234	12,359	18,593
2035	6,296	12,482	18,779
2036	6,359	12,607	18,966
2037	6,423	12,733	19,156
2038	6,487	12,860	19,348
2039	6,552	12,989	19,541
2040	6,618	13,119	19,736
2041	6,684	13,250	19,934
2042	6,751	13,383	20,133
2043	6,818	13,516	20,335
2044	6,886	13,652	20,538
2045	6,955	13,788	20,743

Note: Annual waste projected to increase at 1% per year based on projected population growth

**Waste Disposal Cost** – Appomattox County currently disposes all of the residential waste at the Region 2000 Livestock Road Landfill. This landfill is projected to reach capacity in 2029. Beginning in July 2029, the County will require a new landfill to dispose of their waste. The County would need to solicit bids for a disposal agreement. Typical agreements are provided in 5-year increments with options to extend the term.

A part of this report, McGill called all the landfills within a 50-mile radius of the Appomattox County solid waste facility to determine if these landfills would accept waste from Appomattox

County and what would be the disposal rate. Table 3 lists the landfills and the information for each landfill.

**Table 3 – Out-of-County Landfills**

<b>Landfill</b>	<b>Waste Disposal Fee (per ton)</b>	<b>Accept Waste from Appomattox Co</b>	<b>One-Way Mileage from Appomattox Co Solid Waste Facility</b>	<b>Notes</b>
Amherst County	N/A	No	33	Amherst County only
Augusta Regional Landfill	N/A	No	79	Augusta Co., Staunton, Waynesboro only
Blue Ridge Resource Authority	\$60.50	Yes*	67	*Possible buy-in to the membership
Disposal and Recycling Services of Lunenburg	\$35-\$50	Yes	55	Private Landfill (Meridian)
Maplewood Recycling and Waste Disposal (Amelia)	\$35	Yes	48	Private Landfill (Waste Management)
New River Resource Authority	\$34	Yes*	139	*Possible with an Emergency Agreement
Nottoway County Landfill	N/A	No	58	Nottoway County only
Pittsylvania County	\$41	Yes*	75	*Waiting on call back
Prince Edward County Landfill			22	No answer
SRPSA – Butcher Creek			56	Waiting on call back

For all scenarios, we assumed that the County would continue to only manage the residential waste stream. For options 2, 4, and 5, we also included an evaluation to expand the managed waste by the County to include the commercial waste in the evaluation. The combined waste scenario provides revenue to the County for the handling and disposal of the commercial waste. For the financial model, we have assumed that the County will continue to not charge for residential waste. For the expanded waste scenarios, we have assumed a rate of \$50.00 per ton

beginning in FY 2030 of all commercial waste disposed at the County-operated facility. The commercial rate increases by 4% per year for inflation through FY 2045.

For Options 3 and 6, we have assumed that the private company would charge \$50 per ton all waste disposed of at their facility beginning in FY 2030 escalated by 4% per year through FY 2045. The financial model only includes the disposal cost for residential waste.

**Operation and Maintenance Cost** – the cost for operation and maintenance (O&M) cost includes all items to operate and maintain the facility other than salaries and benefits. O&M costs have been developed for each option based on the current operation and maintenance budget. For Options 2, 4, and 5, O&M costs have been added to cover the additional cost associated with the expanded service provided. O&M costs have been escalated at a rate of 2.5% per year through FY 2045. In addition to the basic operation and maintenance cost, the following items are also included.

**Leachate Hauling and Disposal** – Currently, we understand that the leachate from closed waste cells is collected and tested. If tests show that the leachate is clear, the leachate is pumped to a nearby creek. The Cell J and K permit documentation indicates that all leachate from Cells J and K will be collected, pumped into a tanker truck, and hauled to the Lynchburg Wastewater Treatment Plant. Based on our experience from other landfills, we have projected that leachate collected from Cells J and K could initially be up to 100,000 gallons per month. This volume requires at least 17 trips of a 6,000 gallon tanker truck per month. The current disposal rate at the Lynchburg Wastewater Treatment Plant is \$19/1000 gallons.

**Landfill Post-Closure Care** – After a landfill has been closed and closure construction has been completed, the landfill begins the post-closure care period. The post-closure care period is a minimum 30-year obligation. Post-Closure Care includes the inspection, monitoring, and maintenance of the closed landfill. No matter which option is selected, Appomattox County is responsible for their portion of the post-closure care for both the Turnpike Road Landfill and the Livestock Road Landfill. In addition, Appomattox County is already responsible for post-closure care on the existing closed waste cells at the solid waste facility. In the County's 2024 Virginia Solid Waste Financial Assurance Demonstration to the Virginia Department of Environmental Quality, the letter identified a combined amount for the post-closure care in the amount of \$2,028,562 for the post-closure period for the closed cells at the existing Appomattox County, Turnpike Road Landfill and Livestock Road Landfill. For the financial model, the post-closure care has been converted to an annual cost for each landfill based on the remaining post-closure period. Additional post-closure costs will also be required for any newly developed cells by Appomattox County.

**Capital Projects and Equipment Cost** – the capital cost for projects and equipment have been developed for Options 2, 4, 5, and 7. Option 2 includes the development cost for a new solid waste 6,800 sf transfer station and the associated equipment to operate the facility. Options 4 and 5 include the development cost for new landfill waste cells and the new equipment to operate the landfill to provide waste disposal capacity through FY 2045. Option 7 includes

development costs and equipment to operate the waste-to-energy facility. In addition, waste disposal options capital projects, the following projects are also included.

**Upgrade to Convenience Centers** – In addition to each of the options for waste disposal, the financial plan includes upgrades to all seven (7) convenience centers. The upgrades include installation of asphalt paving the driveways, concrete pads for equipment, and one (1) waste compactor unit for each site. Two centers would be upgraded each year for the next three years and the last center upgraded in Year 4. We have estimated \$125,000 per site for upgrades.

**Landfill Closure Construction** – Appomattox County’s membership in Region 2000 Service Authority and utilizing the Authority’s Livestock Road Landfill for disposal has obligated the County to financially participate in the closure of the landfill when the landfill has reached capacity. The closure construction includes construction of a regulatory approved cap consisting of a compacted clay layer, a geomembrane liner, vegetative soil cap, and a landfill gas management system to limit surface water intrusion into the closed landfill and manage landfill gas. No matter which option is selected, Appomattox County is responsible for their portion of the closure for the Livestock Road Landfill. In addition, closure construction would be required for any option that included development of a new landfill cell by Appomattox County. Each year, the County is required to submit a Virginia Solid Waste Financial Assurance Demonstration to the Virginia Department of Environmental Quality. In 2024, the County submitted a letter identifying a commitment of an estimated \$231,900 for closure construction for the Livestock Road Landfill. We understand that the County has this closure cost earmarked in the existing general fund, and therefore it has no effect on the financial models. The closure construction is projected to occur in FY 2030.

For Options 4 and 5, the County would need to plan for the closure of any developed waste cells once they have reached their capacity. The financial models include for the County to set aside closure construction funds for the futures closure of each waste cell. Typically, it is recommended that funds are contributed annually based on the life of that particular cell. In this way, when it is time to construct the landfill closure, the funds are already available.

**Revenue/ Recycling/ Fees** – The County currently has revenue from the sale of recycling materials and from a contractual agreement with Emanuel Tire in the amount of approximately \$95,000. Under options 1, 2, 3, 4, 5, and 7, we anticipate that this revenue stream will continue. If the County elects to expand their waste management to include commercial waste management, Options 2B, 4B, and 5B, and 7 include revenue from the disposal of commercial waste. For options 2, 4, and 5, we have assumed a disposal rate of \$50 per ton for commercial waste. This disposal rate is escalated at rate of 4% per year through FY 2045.

### 3.0

### OPTION COMPARISONS

A financial model has been created for each of the proposed options to present the projected expenses and potential revenue for each option. The Annual Total Expense tables for each option from FY 2025 to FY 2045 are included in Appendix A and represent a summary of the full cash flow financial model. Each table is broken into the projected expenses for Salaries and Benefits, Waste Hauling, Waste Disposal, Operations and Maintenance, and Capital Outlay and potential revenue. Options 2B, 4B, and 5B include the projected revenue from an expanded operation to manage the commercial waste.

A summary of the tables is shown in Table 1 (reproduced below for reference). The disposal options are ranked based on the projected cumulative expenses from FY 2025 to FY 2045. The table also shows the proposed waste tonnage to be handled by the County and the projected cost per ton to dispose of waste. For all scenarios, we assumed that the County would continue to only manage the residential waste stream. For options 2, 4, and 5, we also included scenarios where the County would expand their waste managed to include commercial waste. These scenarios are shown in Options 2B, 4B, and 5B. The expanded waste scenarios provide revenue to the County for the handling and disposal of commercial waste. For options 3 and 6, revenue from a host fee is included to pay the County for any waste generated outside the county that is brought to the new facility.

Each of the options include utilizing the County's membership in Region 2000 and continuing to direct-haul waste from the convenience center to the Livestock Road Landfill until the landfill reaches capacity in 2029.

**Table 1 - Disposal Options Ranked on Cumulative Expenses from FY 2025 to FY 2045**

Ranking	Option No.	Description	Total Cost	Total Waste Managed (tons)	Average Cost per Ton
1	6	Private Landfill	\$27,639,568	132,460	\$209
2	3	Private Transfer Station	\$31,582,068	132,460	\$238
3	1	Haul Direct	\$40,083,600	132,460	\$303
4	2	Transfer Station (Residential only)	\$57,094,026	132,460	\$431
5	2B	Transfer Station	\$60,043,544	320,720	\$187
6	5B	Cell L	\$62,961,718	320,720	\$196
7	4B	Cell J and K	\$67,921,018	320,720	\$212
8	4	Cell J and K (Residential only)	\$69,069,900	132,460	\$521
9	5	Cell L (Residential only)	\$69,570,200	132,460	\$525
10	7	Waste to Energy	\$102,308,884	637,920	\$160

Each of the proposed options has its own pros and cons.

County-Owned Facility - Development of a county-owned disposal option (Options 2, 4, 5, and 7) at the Morning Star Road site would provide a long-term disposal option for the County. The relatively low volume of waste generated within the county and the cost of development, creates a high cost per ton to develop and operate. Another option for the County to increase the potential revenue and lower the per-ton disposal cost, would be to allow disposal of out-of-county waste at a facility. Of course, any further development of any solid waste disposal option, with or without out-of-county waste at the existing Morning Star Road site would inevitably increase the traffic on Morning Star Road.

Privately-Owned Facility – For option 3 and 6, a privately-owned disposal facility within county would remove the expenses of the capital cost and operation and maintenance. The company would likely want to increase the disposal tonnage by bringing in waste from out-of-county. The out-of-county waste stream would provide the opportunity for the County to receive a host fee for any out-of-county waste brought into the county. The County would need to be careful to develop contracts to provide a long-term disposal option for the County. Of course, including any further development of any solid waste disposal options, with or without out-of-county waste at the existing Morning Star Road site would inevitably increase the traffic on Morning Star Road.

Based on the rankings shown in Table 1, the least expensive waste disposal option for the County would be to solicit bids for a private company to purchase the landfill property and take over the development and operation of solid waste disposal, recycling management, environmental monitoring, closure of future waste cells, and post-closure care of all the current and future waste cells. The County would need to develop a contract with the private company for the company to manage and provide waste disposal to the county for a guaranteed extended period. Under this option, we have assumed that the County would continue to operate the convenience centers and be responsible for hauling waste from the convenience centers to a new landfill on Morning Star Road.

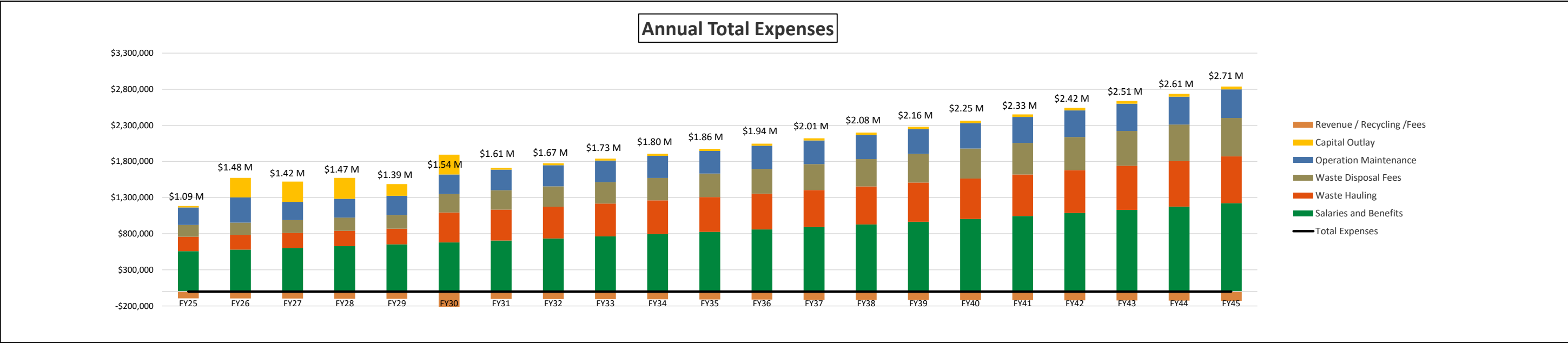
## **APPENDIX A**



Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 1: Transport Waste Directly to Amelia Landfill  
(Residential Waste Only)

Expenses - Cumulative Total FY25 through FY45: \$40,083,600  
Total Waste Managed (tons): 132,460  
Average Cost per Ton: \$303



Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	678,600	705,700	733,900	763,300	793,800	825,600	858,600	892,900	928,600	965,700	1,004,300	1,044,500	1,086,300	1,129,800	1,175,000	1,222,000
Waste Hauling	200,000	204,000	208,100	212,300	216,500	414,700	427,200	440,100	453,400	467,100	481,200	495,700	510,700	526,100	542,000	558,400	575,200	592,600	610,500	628,900	647,900
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	255,100	268,000	281,500	295,700	310,600	326,200	342,600	359,900	378,100	397,100	417,100	438,100	460,200	483,400	507,800	533,400
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	271,600	286,200	292,800	299,600	306,600	313,700	321,000	328,400	336,000	343,800	351,800	360,000	368,500	377,100	385,900	394,900
Capital Outlay	20,000	270,700	280,200	290,000	161,500	273,700	24,500	25,400	26,300	27,200	28,200	29,200	30,200	31,300	32,400	33,500	34,700	35,900	37,200	38,500	39,800
Revenue / Recycling /Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(352,300)	(103,800)	(105,400)	(107,000)	(108,600)	(110,200)	(111,900)	(113,600)	(115,300)	(117,000)	(118,800)	(120,600)	(122,400)	(124,200)	(126,100)	(128,000)
Total Expenses	1,088,600	1,476,300	1,423,700	1,473,300	1,385,900	1,541,400	1,607,800	1,668,300	1,731,300	1,796,700	1,864,700	1,935,200	2,008,500	2,084,800	2,164,000	2,246,300	2,331,900	2,421,100	2,513,800	2,610,000	2,710,000
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	6,360	6,420	6,490	6,550	6,620	6,680	6,750	6,820	6,890	6,960
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$250.99	\$233.71	\$257.33	\$265.75	\$273.04	\$280.60	\$288.39	\$295.98	\$304.28	\$312.85	\$321.23	\$330.38	\$339.32	\$349.09	\$358.68	\$368.59	\$378.81	\$389.37

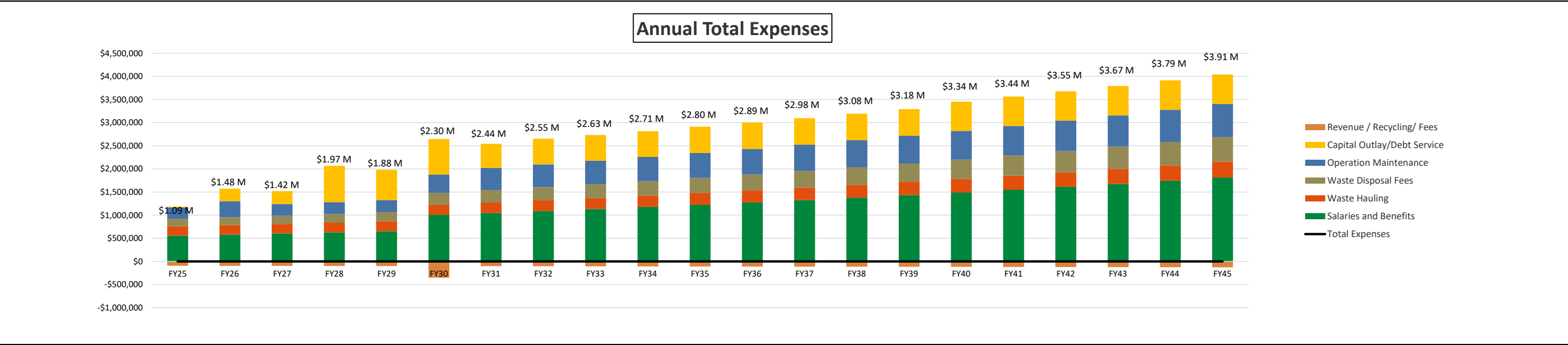
Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 2: County-Owned Transfer Station, Transport Waste to Private Landfill  
(Residential Waste Only)

Expenses - Cumulative Total FY25 through FY45: \$57,094,026

Total Waste Managed (tons): 132,460

Average Cost per Ton: \$431



Expenditures Description	Budget FY25	Year 1 FY26	Year 2 FY27	Year 3 FY28	Year 4 FY29	Year 5 FY30	Year 6 FY31	Year 7 FY32	Year 8 FY33	Year 9 FY34	Year 10 FY35	Year 11 FY36	Year 12 FY37	Year 13 FY38	Year 14 FY39	Year 15 FY40	Year 16 FY41	Year 17 FY42	Year 18 FY43	Year 19 FY44	Year 20 FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	1,007,000	1,047,200	1,089,100	1,132,700	1,178,000	1,225,200	1,274,200	1,325,100	1,378,100	1,433,200	1,490,500	1,550,100	1,612,100	1,676,600	1,743,700	1,813,400
Waste Hauling	200,000	204,000	208,100	212,300	216,500	218,886	225,481	232,296	239,336	246,504	254,004	261,640	269,516	277,636	286,105	294,726	303,606	312,748	322,257	331,938	341,998
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	255,104	267,961	281,466	295,652	310,553	326,205	342,645	359,915	378,054	397,108	417,122	438,145	460,228	483,423	507,788	533,381
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	398,400	482,400	496,000	509,900	524,300	539,100	554,300	569,900	586,100	602,600	619,800	637,400	655,800	674,500	693,800	713,500
Capital Outlay/Debt Service	20,000	270,700	280,200	785,100	656,600	768,800	519,600	555,300	556,200	557,100	570,100	571,100	572,100	573,200	574,300	632,900	634,100	635,300	636,600	637,900	639,200
Revenue / Recycling/ Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(352,300)	(103,800)	(105,400)	(107,000)	(108,600)	(110,200)	(111,900)	(113,600)	(115,300)	(117,000)	(118,800)	(120,600)	(122,400)	(124,200)	(126,100)	(128,000)
Total Expenses	1,088,600	1,476,300	1,423,700	1,968,400	1,881,000	2,295,889	2,438,841	2,548,762	2,626,788	2,707,857	2,804,409	2,891,985	2,982,930	3,077,790	3,176,313	3,336,249	3,442,751	3,553,776	3,669,180	3,789,026	3,913,478
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	6,360	6,420	6,490	6,550	6,620	6,680	6,750	6,820	6,890	6,960
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$335.33	\$317.20	\$383.29	\$403.11	\$417.15	\$425.74	\$434.65	\$445.14	\$454.71	\$464.63	\$474.24	\$484.93	\$503.97	\$515.38	\$526.49	\$538.00	\$549.93	\$562.28

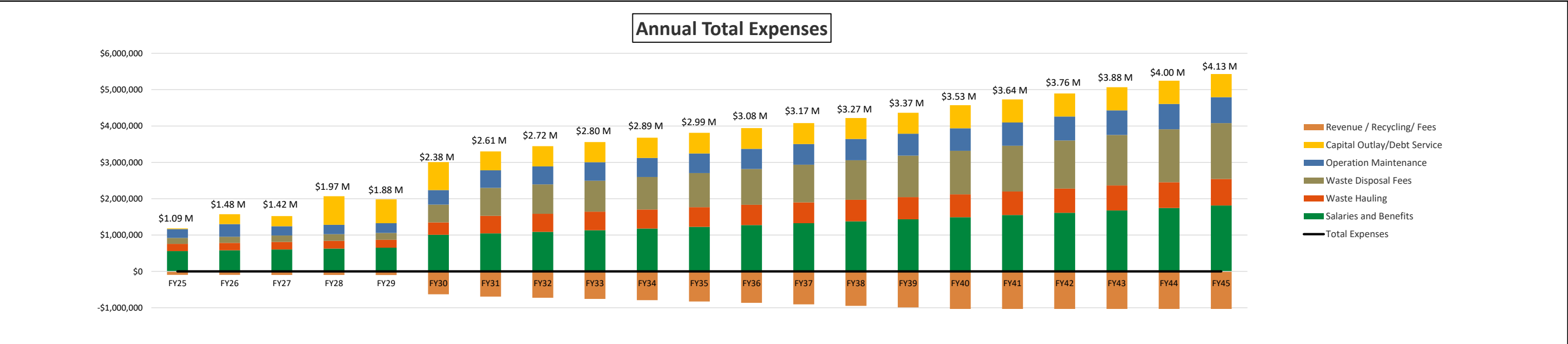
Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 2B: County-Owned Transfer Station, Transport Waste to Private Landfill  
(Residential and Commercial Waste)

Expenses - Cumulative Total FY25 through FY45: \$60,043,544

Total Waste Managed (tons): 320,720

Average Cost per Ton: \$187

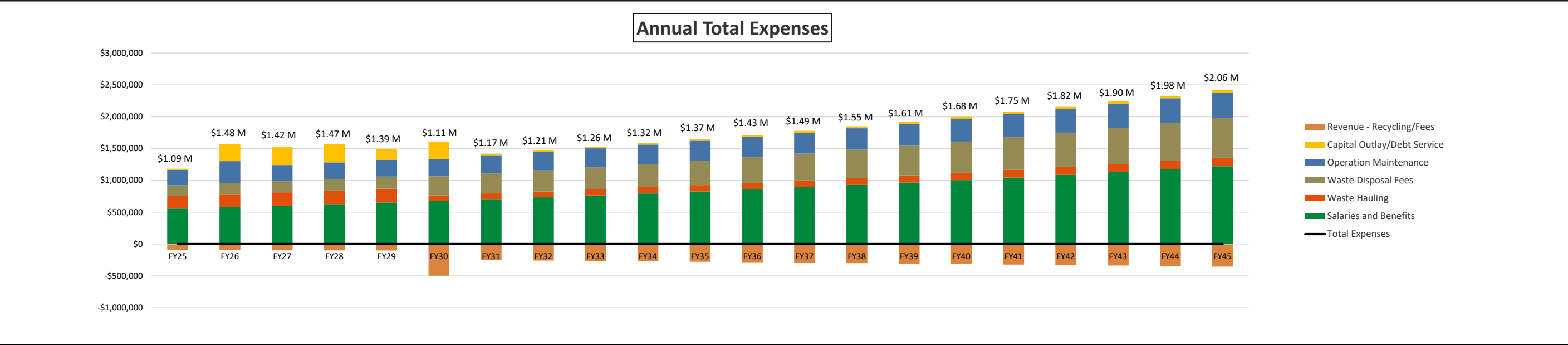


Expenditures Description	Budget FY25	Year 1 FY26	Year 2 FY27	Year 3 FY28	Year 4 FY29	Year 5 FY30	Year 6 FY31	Year 7 FY32	Year 8 FY33	Year 9 FY34	Year 10 FY35	Year 11 FY36	Year 12 FY37	Year 13 FY38	Year 14 FY39	Year 15 FY40	Year 16 FY41	Year 17 FY42	Year 18 FY43	Year 19 FY44	Year 20 FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	1,007,000	1,047,200	1,089,100	1,132,700	1,178,000	1,225,200	1,274,200	1,325,100	1,378,100	1,433,200	1,490,500	1,550,100	1,612,100	1,676,600	1,743,700	1,813,400
Waste Hauling	200,000	204,000	208,100	212,300	216,500	341,091	481,168	495,705	510,700	526,063	542,006	558,339	575,175	592,526	610,505	628,923	647,896	667,435	687,656	708,372	729,800
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	490,938	770,708	809,552	850,353	893,211	938,229	985,515	1,035,185	1,087,359	1,142,162	1,199,727	1,260,193	1,323,706	1,390,421	1,460,499	1,534,108
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	398,400	482,400	496,000	509,900	524,300	539,100	554,300	569,900	586,100	602,600	619,800	637,400	655,800	674,500	693,800	713,500
Capital Outlay/Debt Service	20,000	270,700	280,200	785,100	656,600	768,800	519,600	555,300	556,200	557,100	570,100	571,100	572,100	573,200	574,300	632,900	634,100	635,300	636,600	637,900	639,200
Revenue / Recycling/ Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(629,300)	(694,000)	(725,698)	(758,296)	(792,967)	(828,634)	(866,663)	(906,449)	(948,074)	(991,625)	(1,037,292)	(1,085,838)	(1,136,654)	(1,189,015)	(1,244,763)	(1,302,215)
Total Expenses	1,088,600	1,476,300	1,423,700	1,968,400	1,881,000	2,376,929	2,607,076	2,719,959	2,801,557	2,885,707	2,986,001	3,076,792	3,171,012	3,269,211	3,371,141	3,534,558	3,643,851	3,757,688	3,876,763	3,999,508	4,127,793
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	11,530	17,400	17,580	17,750	17,930	18,110	18,290	18,470	18,660	18,840	19,030	19,220	19,420	19,610	19,810	20,000
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$335.33	\$317.20	\$206.15	\$149.83	\$154.72	\$157.83	\$160.94	\$164.88	\$168.22	\$171.68	\$175.20	\$178.94	\$185.74	\$189.59	\$193.50	\$197.69	\$201.89	\$206.39

Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 3: Private Transfer Station  
(Residential Waste)

Expenses - Cumulative Total FY25 through FY45: \$31,582,068  
Total Waste Managed (tons) 132,460  
Average Cost per Ton: \$238

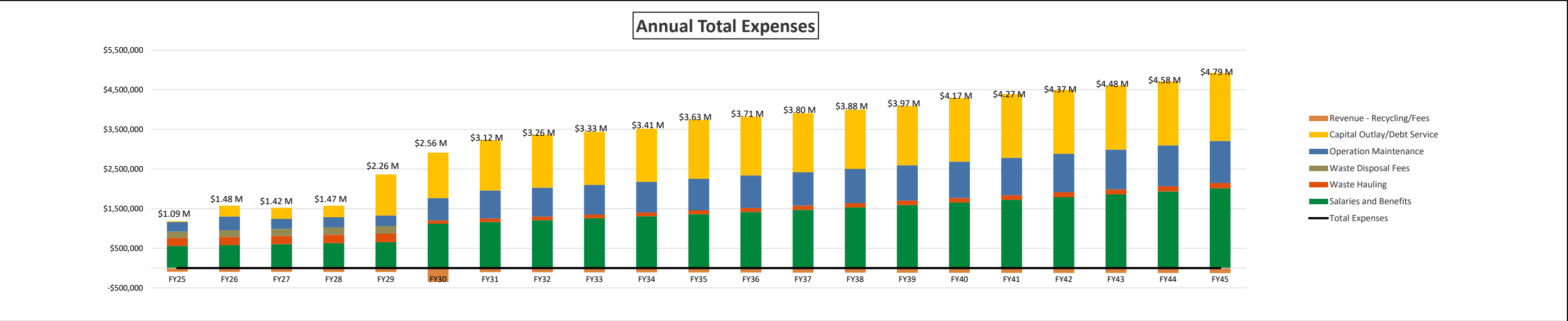


Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	678,600	705,700	733,900	763,300	793,800	825,600	858,600	892,900	928,600	965,700	1,004,300	1,044,500	1,086,300	1,129,800	1,175,000	1,222,000
Waste Hauling	200,000	204,000	208,100	212,300	216,500	86,600	89,200	91,900	94,700	97,500	100,500	103,500	106,600	109,800	113,200	116,600	120,100	123,700	127,500	131,300	135,300
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	299,500	314,600	330,429	347,021	364,411	383,246	402,371	422,414	444,101	466,135	489,961	514,178	540,348	567,790	596,563	626,728
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	271,600	286,200	292,800	299,600	306,600	313,700	321,000	328,400	336,000	343,800	351,800	360,000	368,500	377,100	385,900	394,900
Capital Outlay/Debt Service	20,000	270,700	280,200	290,000	161,500	273,700	24,500	25,400	26,300	27,200	28,200	29,200	30,200	31,300	32,400	33,500	34,700	35,900	37,200	38,500	39,800
Revenue - Recycling/Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(497,800)	(253,665)	(259,761)	(265,992)	(272,362)	(278,874)	(285,635)	(292,547)	(299,615)	(306,844)	(314,340)	(322,006)	(329,848)	(337,872)	(346,182)	(354,684)
Total Expenses	1,088,600	1,476,300	1,423,700	1,473,300	1,385,900	1,112,200	1,166,535	1,214,668	1,264,929	1,317,149	1,372,371	1,429,037	1,487,967	1,550,186	1,614,390	1,681,821	1,751,472	1,824,900	1,901,518	1,981,081	2,064,044
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	6,360	6,420	6,490	6,550	6,620	6,680	6,750	6,820	6,890	6,960
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$250.99	\$233.71	\$185.68	\$192.82	\$198.80	\$205.01	\$211.42	\$217.84	\$224.69	\$231.77	\$238.86	\$246.47	\$254.05	\$262.20	\$270.36	\$278.82	\$287.53	\$296.56

Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 4: Develop Cells J and K New MSW Landfill  
(Residential Waste Only)

Expenses - Cumulative Total FY25 through FY45: \$69,069,900  
Total Waste Managed (tons): 132,460  
Average Cost per Ton: \$521

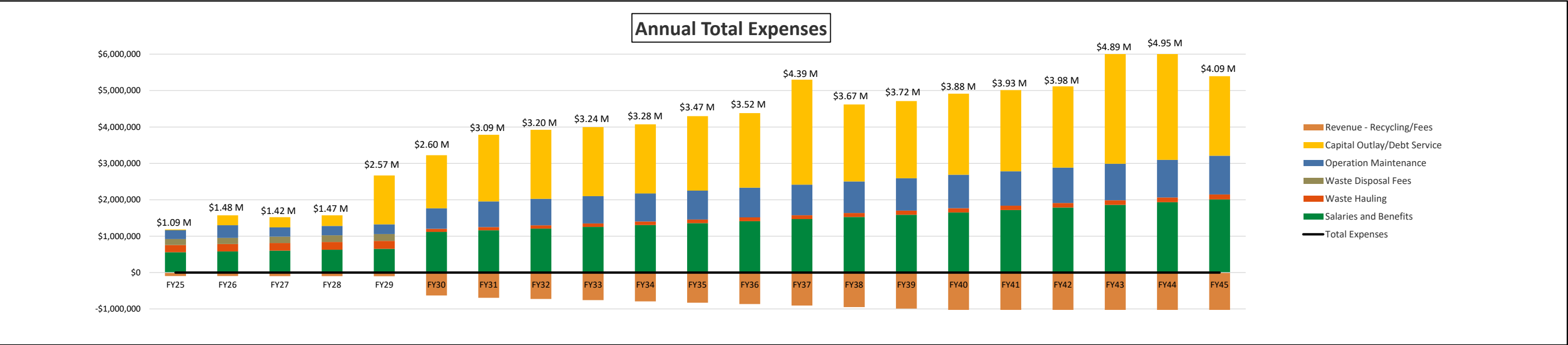


Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	1,116,600	1,161,200	1,207,600	1,255,900	1,306,100	1,358,400	1,412,700	1,469,200	1,528,000	1,589,100	1,652,600	1,718,700	1,787,500	1,859,000	1,933,400	2,010,700
Waste Hauling	200,000	204,000	208,100	212,300	216,500	86,600	89,200	91,900	94,700	97,500	100,500	103,500	106,600	109,800	113,200	116,600	120,100	123,700	127,500	131,300	135,300
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	564,200	706,500	727,400	748,700	770,900	793,700	817,200	841,300	866,300	891,900	918,400	945,800	974,300	1,003,300	1,033,300	1,064,000
Capital Outlay/Debt Service	20,000	270,700	280,200	290,000	1,034,900	1,147,500	1,271,700	1,338,700	1,340,100	1,341,600	1,488,500	1,490,100	1,491,600	1,493,300	1,495,000	1,605,000	1,606,800	1,608,600	1,610,600	1,612,600	1,710,300
Revenue - Recycling/Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(352,300)	(103,800)	(105,400)	(107,000)	(108,600)	(110,200)	(111,900)	(113,600)	(115,300)	(117,000)	(118,800)	(120,600)	(122,400)	(124,200)	(126,100)	(128,000)
Total Expenses	1,088,600	1,476,300	1,423,700	1,473,300	2,259,300	2,562,600	3,124,800	3,260,200	3,332,400	3,407,500	3,630,900	3,711,600	3,795,100	3,882,100	3,972,200	4,173,800	4,270,800	4,371,700	4,476,200	4,584,500	4,792,300
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	6,360	6,420	6,490	6,550	6,620	6,680	6,750	6,820	6,890	6,960
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$250.99	\$380.99	\$427.81	\$516.50	\$533.58	\$540.10	\$546.95	\$576.33	\$583.58	\$591.14	\$598.17	\$606.44	\$630.48	\$639.34	\$647.66	\$656.33	\$665.38	\$688.55

Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 4B: Develop Cells J and K New MSW Landfill  
(Residential and Commercial Waste)

Expenses - Cumulative Total FY25 through FY45: \$67,921,018  
Total Waste Managed (tons): 320,720  
Average Cost per Ton: \$212

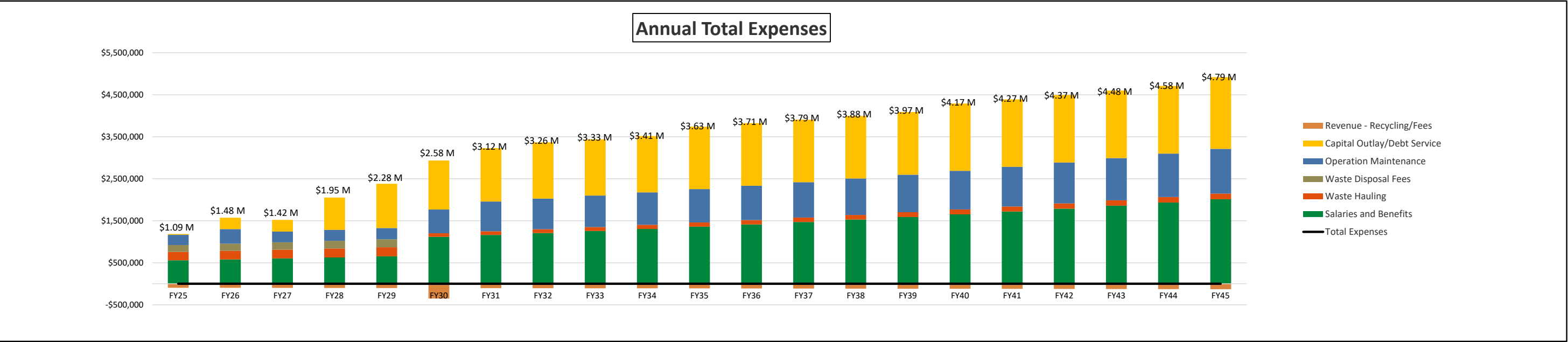


Expenditures Description	Budget FY25	Year 1 FY26	Year 2 FY27	Year 3 FY28	Year 4 FY29	Year 5 FY30	Year 6 FY31	Year 7 FY32	Year 8 FY33	Year 9 FY34	Year 10 FY35	Year 11 FY36	Year 12 FY37	Year 13 FY38	Year 14 FY39	Year 15 FY40	Year 16 FY41	Year 17 FY42	Year 18 FY43	Year 19 FY44	Year 20 FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	1,116,600	1,161,200	1,207,600	1,255,900	1,306,100	1,358,400	1,412,700	1,469,200	1,528,000	1,589,100	1,652,600	1,718,700	1,787,500	1,859,000	1,933,400	2,010,700
Waste Hauling	200,000	204,000	208,100	212,300	216,500	86,600	89,200	91,900	94,700	97,500	100,500	103,500	106,600	109,800	113,200	116,600	120,100	123,700	127,500	131,300	135,300
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	564,200	706,500	727,400	748,700	770,900	793,700	817,200	841,300	866,300	891,900	918,400	945,800	974,300	1,003,300	1,033,300	1,064,000
Capital Outlay/Debt Service	20,000	270,700	280,200	290,000	1,344,500	1,457,100	1,830,100	1,897,100	1,898,500	1,900,000	2,046,900	2,048,500	2,883,000	2,115,000	2,116,700	2,226,700	2,228,500	2,230,300	3,090,000	3,092,000	2,185,400
Revenue - Recycling/Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(629,300)	(694,000)	(725,698)	(758,296)	(792,967)	(828,634)	(866,663)	(906,449)	(948,074)	(991,625)	(1,037,292)	(1,085,838)	(1,136,654)	(1,189,015)	(1,244,763)	(1,302,215)
Total Expenses	1,088,600	1,476,300	1,423,700	1,473,300	2,568,900	2,595,200	3,093,000	3,198,302	3,239,504	3,281,533	3,470,866	3,515,237	4,393,651	3,671,026	3,719,275	3,877,008	3,927,262	3,979,146	4,890,785	4,945,237	4,093,185
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	11,530	17,400	17,580	17,750	17,930	18,110	18,290	18,470	18,660	18,840	19,030	19,220	19,420	19,610	19,810	20,000
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$250.99	\$433.20	\$225.08	\$177.76	\$181.93	\$182.51	\$183.02	\$191.65	\$192.19	\$237.88	\$196.73	\$197.41	\$203.73	\$204.33	\$204.90	\$249.40	\$249.63	\$204.66

Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 5: New MSW Landfill - Morning Star Road  
(Residential Waste Only)

Expenses - Cumulative Total FY25 through FY45: \$69,570,200  
Total Waste Managed (tons): 132,460  
Average Cost per Ton: \$525

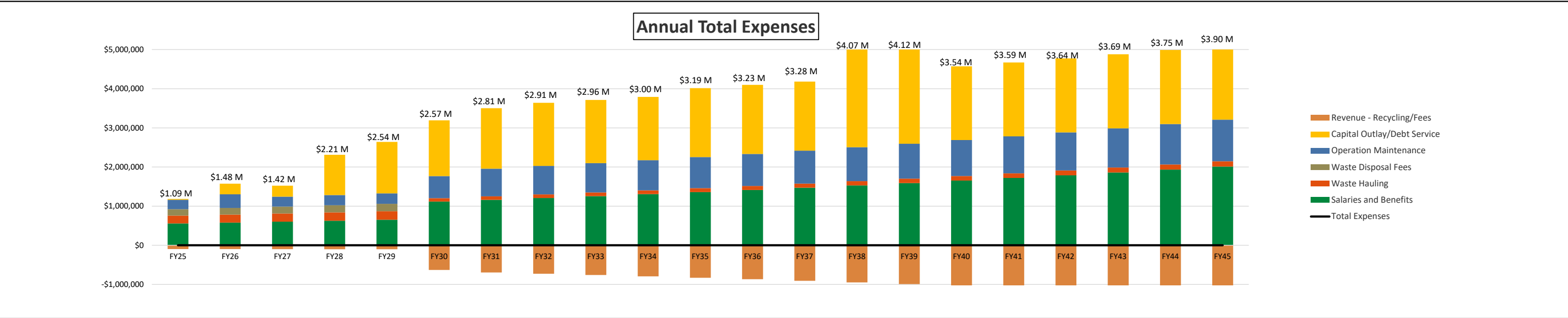


Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	1,116,600	1,161,200	1,207,600	1,255,900	1,306,100	1,358,400	1,412,700	1,469,200	1,528,000	1,589,100	1,652,600	1,718,700	1,787,500	1,859,000	1,933,400	2,010,700
Waste Hauling	200,000	204,000	208,100	212,300	216,500	86,600	89,200	91,900	94,700	97,500	100,500	103,500	106,600	109,800	113,200	116,600	120,100	123,700	127,500	131,300	135,300
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	564,200	706,500	727,400	748,700	770,900	793,700	817,200	841,300	866,300	891,900	918,400	945,800	974,300	1,003,300	1,033,300	1,064,000
Capital Outlay/Debt Service	20,000	270,700	280,200	769,000	1,053,800	1,166,400	1,270,600	1,337,600	1,339,000	1,340,500	1,487,400	1,489,000	1,490,500	1,492,200	1,493,900	1,603,900	1,605,700	1,607,500	1,609,500	1,611,500	1,709,200
Revenue - Recycling/Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(352,300)	(103,800)	(105,400)	(107,000)	(108,600)	(110,200)	(111,900)	(113,600)	(115,300)	(117,000)	(118,800)	(120,600)	(122,400)	(124,200)	(126,100)	(128,000)
Total Expenses	1,088,600	1,476,300	1,423,700	1,952,300	2,278,200	2,581,500	3,123,700	3,259,100	3,331,300	3,406,400	3,629,800	3,710,500	3,794,000	3,881,000	3,971,100	4,172,700	4,269,700	4,370,600	4,475,100	4,583,400	4,791,200
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	6,360	6,420	6,490	6,550	6,620	6,680	6,750	6,820	6,890	6,960
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$332.59	\$384.18	\$430.97	\$516.31	\$533.40	\$539.92	\$546.77	\$576.16	\$583.41	\$590.97	\$598.00	\$606.27	\$630.32	\$639.18	\$647.50	\$656.17	\$665.22	\$688.39

Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 5B: New MSW Landfill - Morning Star Road  
(Residential and Commercial Waste)

Expenses - Cumulative Total FY25 through FY45: \$62,961,718  
Total Waste Managed (tons): 320,720  
Average Cost per Ton: \$196



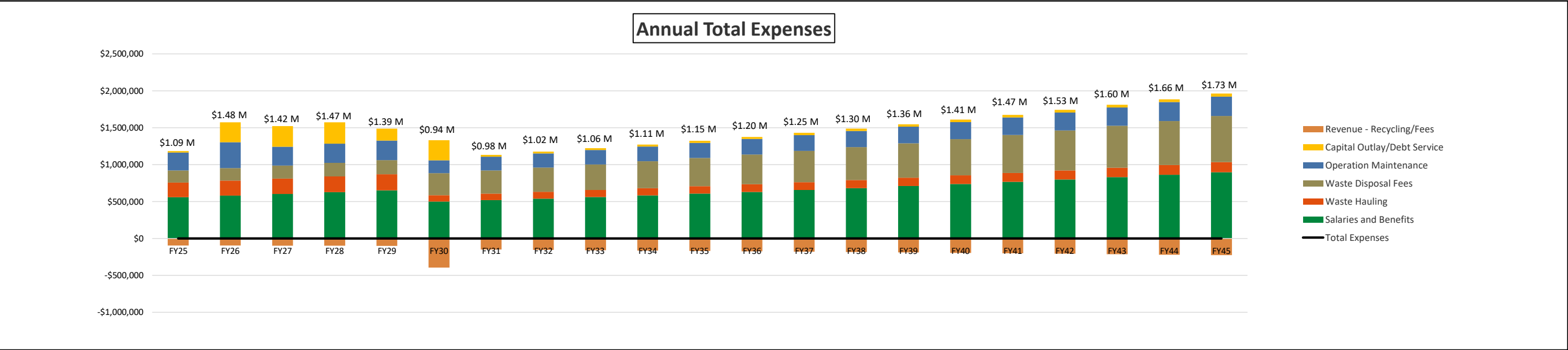
Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	1,116,600	1,161,200	1,207,600	1,255,900	1,306,100	1,358,400	1,412,700	1,469,200	1,528,000	1,589,100	1,652,600	1,718,700	1,787,500	1,859,000	1,933,400	2,010,700
Waste Hauling	200,000	204,000	208,100	212,300	216,500	86,600	89,200	91,900	94,700	97,500	100,500	103,500	106,600	109,800	113,200	116,600	120,100	123,700	127,500	131,300	135,300
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	564,200	706,500	727,400	748,700	770,900	793,700	817,200	841,300	866,300	891,900	918,400	945,800	974,300	1,003,300	1,033,300	1,064,000
Capital Outlay/Debt Service	20,000	270,700	280,200	1,029,700	1,314,500	1,427,100	1,546,700	1,613,700	1,615,100	1,616,600	1,763,500	1,765,100	1,766,600	2,513,100	2,514,800	1,885,100	1,886,900	1,888,700	1,890,700	1,892,700	1,990,400
Revenue - Recycling/Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(629,300)	(694,000)	(725,698)	(758,296)	(792,967)	(828,634)	(866,663)	(906,449)	(948,074)	(991,625)	(1,037,292)	(1,085,838)	(1,136,654)	(1,189,015)	(1,244,763)	(1,302,215)
Total Expenses	1,088,600	1,476,300	1,423,700	2,213,000	2,538,900	2,565,200	2,809,600	2,914,902	2,956,104	2,998,133	3,187,466	3,231,837	3,277,251	4,069,126	4,117,375	3,535,408	3,585,662	3,637,546	3,691,485	3,745,937	3,898,185
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	11,530	17,400	17,580	17,750	17,930	18,110	18,290	18,470	18,660	18,840	19,030	19,220	19,420	19,610	19,810	20,000
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$377.00	\$428.15	\$222.48	\$161.47	\$165.81	\$166.54	\$167.21	\$176.01	\$176.70	\$177.44	\$218.07	\$218.54	\$185.78	\$186.56	\$187.31	\$188.25	\$189.09	\$194.91



Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 6: Private Landfill Development  
(Residential Waste Only)

Expenses - Cumulative Total FY25 through FY45: \$27,639,568  
Total Waste Managed (tons) 132,460  
Average Cost per Ton: \$209



Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	498,200	518,100	538,900	560,400	582,800	606,100	630,400	655,600	681,800	709,100	737,500	767,000	797,700	829,600	862,800	897,300
Waste Hauling	200,000	204,000	208,100	212,300	216,500	86,600	89,200	91,900	94,700	97,500	100,500	103,500	106,600	109,800	113,200	116,600	120,100	123,700	127,500	131,300	135,300
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	299,500	314,600	330,429	347,021	364,411	383,246	402,371	422,414	444,101	466,135	489,961	514,178	540,348	567,790	596,563	626,728
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	172,800	185,400	190,000	194,700	199,600	204,600	209,700	214,900	220,200	225,700	231,300	237,100	243,100	249,200	255,400	261,800
Capital Outlay/Debt Service	20,000	270,700	280,200	290,000	161,500	273,700	24,500	25,400	26,300	27,200	28,200	29,200	30,200	31,300	32,400	33,500	34,700	35,900	37,200	38,500	39,800
Revenue - Recycling/Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(395,500)	(149,865)	(154,361)	(158,992)	(163,762)	(168,674)	(173,735)	(178,947)	(184,315)	(189,844)	(195,540)	(201,406)	(207,448)	(213,672)	(220,082)	(226,684)
Total Expenses	1,088,600	1,476,300	1,423,700	1,473,300	1,385,900	935,300	981,935	1,022,268	1,064,129	1,107,749	1,153,971	1,201,437	1,250,767	1,302,886	1,356,690	1,413,321	1,471,672	1,533,300	1,597,618	1,664,481	1,734,244
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	6,360	6,420	6,490	6,550	6,620	6,680	6,750	6,820	6,890	6,960
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$250.99	\$233.71	\$156.14	\$162.30	\$167.31	\$172.47	\$177.81	\$183.17	\$188.91	\$194.82	\$200.75	\$207.13	\$213.49	\$220.31	\$227.16	\$234.25	\$241.58	\$249.17

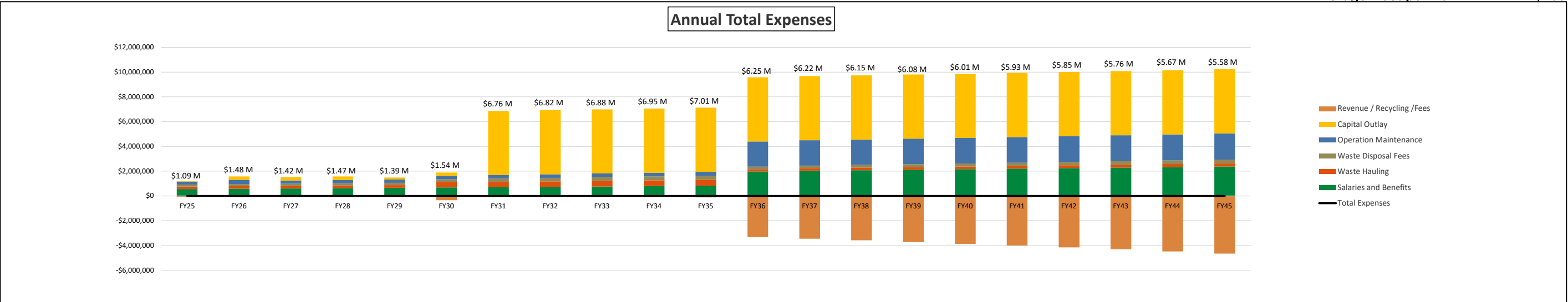
Appomattox County  
Landfill Convenience Department  
Cash Flow Projection FY25 through FY45

Option 7 - Waste-to-Energy Facility  
(Residential and Commercial Waste Only)

Expenses - Cumulative Total FY25 through FY45: \$102,308,884

Total Waste Managed (tons): 637,920

Average Cost per Ton: \$160



Expenditures	Budget	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Description	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45
Salaries and Benefits	557,800	580,100	603,300	627,400	652,500	678,600	705,700	733,900	763,300	793,800	825,600	1,967,000	2,045,636	2,081,336	2,118,436	2,157,036	2,197,236	2,239,036	2,282,536	2,327,736	2,374,736
Waste Hauling	200,000	204,000	208,100	212,300	216,500	414,700	427,200	440,100	453,400	467,100	481,200	194,500	200,300	206,300	212,700	219,100	225,700	232,400	239,500	246,700	254,200
Waste Disposal Fees	163,000	169,500	176,300	183,400	190,700	255,100	268,000	281,500	295,700	310,600	326,200	197,102	207,036	217,470	228,431	239,944	252,037	264,740	278,083	292,098	306,820
Operation Maintenance	242,800	348,400	253,600	259,500	265,500	271,600	286,200	292,800	299,600	306,600	313,700	2,037,000	2,044,400	2,052,000	2,059,800	2,067,800	2,076,000	2,084,500	2,093,100	2,101,900	2,110,900
Capital Outlay	20,000	270,700	280,200	290,000	161,500	273,700	5,174,500	5,175,400	5,176,300	5,177,200	5,178,200	5,179,200	5,180,200	5,181,300	5,182,400	5,183,500	5,184,700	5,185,900	5,187,200	5,188,500	5,189,800
Revenue / Recycling /Fees	(95,000)	(96,400)	(97,800)	(99,300)	(100,800)	(352,300)	(103,800)	(105,400)	(107,000)	(108,600)	(110,200)	(3,328,300)	(3,454,800)	(3,585,300)	(3,721,500)	(3,862,300)	(4,009,300)	(4,161,000)	(4,318,500)	(4,482,100)	(4,652,000)
Total Expenses	1,088,600	1,476,300	1,423,700	1,473,300	1,385,900	1,541,400	6,757,800	6,818,300	6,881,300	6,946,700	7,014,700	6,246,502	6,222,772	6,153,106	6,080,267	6,005,080	5,926,373	5,845,576	5,761,919	5,674,834	5,584,456
Annual Tonnage	5,700	5,760	5,810	5,870	5,930	5,990	6,050	6,110	6,170	6,230	6,300	57,200	57,200	57,200	57,200	57,200	57,200	57,200	57,200	57,200	57,200
Cost Per Ton	\$190.98	\$256.30	\$245.04	\$250.99	\$233.71	\$257.33	\$1,116.99	\$1,115.92	\$1,115.28	\$1,115.04	\$1,113.44	\$109.20	\$108.79	\$107.57	\$106.30	\$104.98	\$103.61	\$102.20	\$100.73	\$99.21	\$97.63