September 5, 2025
File No. 2025-013

Ken Folsom
Town Administrator
Town of Canterbury
10 Hackleboro Road
P.O. Box 500
Canterbury, NH 03224
kfolsom@canterburynh.gov

Re: Cost Option Analysis Summary
Canterbury Transfer Station
83 Baptist Road
Canterbury, New Hampshire

Dear Mr. Folsom:

Aries Engineering, LLC (Aries) is pleased to submit to the Town of Canterbury (Town) the attached Cost Option Analysis, which evaluates selected upgrade and replacement options for the Town's Solid Waste Collection/Storage/Transfer (C/S/T) Facility (Transfer Station) located at 83 Baptist Road in Canterbury, New Hampshire (site).

The findings and conclusions presented herein are not scientific certainties, but rather our professional opinions concerning our evaluation of information and data submitted by others. Aries anticipates variations in actual site conditions beyond those interpreted and would have to re-evaluate the report conclusions and recommendations if additional site data are made available. Aries conducted this report in general accordance with accepted consulting practices. Aries makes no warranty, either expressed or implied.

OBJECTIVE

The objective of this Cost Option Analysis is to conduct a preliminary feasibility and suitability study using planning-level cost estimates to evaluate the efficacy of renovation, expansion or relocation scenarios for the Town's C/S/T Facility.

Elements of the study included:

- Evaluation of different cost options for managing collection and transportation of municipal solid waste (MSW) and recyclables;
- Feasibility of relocating the Salt and Sand barn to the northwest corner of the Municipal Complex at 26 Baptist Road;

- Assessing options to construct a storage structure at the current Transfer Station site for baled products or renovate the existing Salt and Sand barn to store baled products;
- Assessing options to construct or renovate an office with improved heating and cooling and a restroom; and
- Providing recommendations for a more efficient traffic pattern and recyclable storage areas.

COMPLIANCE WITH STATE LANDFILL REGULATIONS

Aries understands that the Town is concerned about future liabilities related to the uncapped site landfill. According to an April 22, 2025, email from the New Hampshire Department of Environmental Services (NHDES), the landfill is subject to the post-closure requirements found in Env-Sw 807. As such, proposed changes to the facility infrastructure (buildings, foundations, utilities, etc.) that is currently located within the footprint of the landfill or in areas of observed solid waste would require a Type I-B permit modification prior to construction. Currently, the landfill does not have a permit number, which would be assigned should proposed modifications require that a permit application be filed.

However, in a follow-up discussion, Mary F. Daun, P.E. of the NHDES Solid Waste Management Bureau (SWMB) stated that facility construction, including new construction or upgrades and renovations at the existing Transfer Station would be allowed without restriction in locations outside areas of known or observed buried solid waste. Based on prior studies by Aries and others, buried solid waste is anticipated to be located east of the existing Transfer Station buildings and foundations, while areas located generally west of Transfer Station buildings are located outside of the known or suspected areas of buried solid waste (see Figure 1). Therefore, Aries anticipates that future development at the Transfer Station would be conducted in areas west of the current site buildings, while removal or addition to the eastern portions of the existing site buildings could trigger the need for a permit modification application.

According to James O'Rourke, P.G., NHDES project manager for the Hazardous Waste Remediation Bureau (HWRB), site groundwater is currently monitored under a Groundwater Management Permit (GMP) (#GWP-198400084-C-004), which expires on August 30, 2027. The permit requires monitoring of water quality and water levels in selected groundwater monitoring wells, surface water sample locations around the landfill and one nearby private water supply well. According to Mr. O'Rourke, the site GMP is required to monitor groundwater for risks related to known groundwater contaminants at the landfill within a Groundwater Management Zone (GMZ). Based on available GMP monitoring data, NHDES does not anticipate requiring additional remedial work at the landfill. However, if GMP monitoring data indicate an adverse change in risk at the site, then additional protective measures will be required under a revised GMP. Mr. O'Rourke noted that the Town would be allowed to install a new water supply well on the landfill property within the GMZ, which would require modification to the site GMP to include monitoring of the new water supply well.

COST OPTION ANALYSIS

Cost Option Descriptions

Aries prepared a preliminary cost option analysis of eight options for collecting and hauling MSW and recyclables for comparison to Current Operations. A brief description of the cost options follow:

1. **Current Operations**: This option consists of the current facility operations that include collection of MSW in an older compactor truck that is stationed in the existing TS building. MSW is collected and placed in the compactor truck by Town employees as residents drive through the building. At the same time, recyclables are unloaded by Town employees and sorted by waste category for later compaction and baling (for plastics, cardboard and paper), crushing (glass) or loose storage (metals and aluminum cans).

2. **Replace Compactor Truck:** This option is similar to the Current Operations scenario, with the exception of purchasing a new compactor truck to replace the current compactor truck.

3. **Install New Stand-Alone Single-Phase Compactor:** This option utilized a new 4-yard compactor with phase converter to collect and compact MSW in place of the current compactor truck. This option locates the compactor west of the existing TS building along the current access road. A by-pass lane will be added to allow for residents to proceed to the main building for recyclables drop off. The stand-alone configuration will require installation of a concrete pad for the compactor and receiver containers. This cost option also included construction of a small canopy for the MSW unloading area to protect the loading area and operator area from the elements.

4. **Install New Rear-Feed Single-Phase Compactor Attached to Transfer Station Building:** This option is similar to Option 2 but places a rear-feed compactor in the bay that houses the current compactor truck. This option will require installation of a concrete pad for the compactor and receiver containers, as well as regrading and leveling of the current bay floor. A contingency for the retrofit and regrading of this area for the installation of the rear-loading compactor was included in the first-year capital cost estimate.

5. **Subcontract Solid Waste Disposal and Recycling at Transfer Station:** Aries contacted both Casella Waste Systems (Casella) and WIN Waste Innovations (WIN Waste) for quotes to operate the current transfer station. Both vendors declined to provide a quote for this service. Therefore, this option was not further assessed.

6. **Purchase Property & Construct New Transfer Station:** This option includes purchasing a new property and constructing a new transfer station facility on the new property. Elements of this cost option include the construction of a 40’ by 80’ steel-frame building to house the new transfer station operations, material storage and facilities.

6. **Subcontract Solid Waste Disposal and Recycling at New Transfer Station Property:** Casella and WIN Waste declined to provide cost estimate for this service at a new facility. Therefore, this option was not further assessed.

7. **Curbside Pickup of MSW & Recyclables:** This cost option includes curbside pickup of MSW and separated recyclables by Casella. WIN Waste declined to provide a cost estimate for this service. This option assumes future limited use of the transfer station for drop-off of construction and demolition (C&D) wastes, bulk metals, and operation of the swap shop.

8. **MSW-Only Curbside Pickup with Town-Run Recycling at Transfer Station:** This cost option includes curbside pickup of only MSW using an Automatic Site Loader (ASL) system by Casella. This option assumes continued use of the transfer station for drop off of C&D wastes, bulk metals, and recyclables, as well as operation of the swap shop.

Assumptions

This analysis was based on the following assumptions:

1. Aries' waste management estimated cost comparisons are based on the selected vendor quotes for purchase of new equipment and materials. Aries anticipates that substitution of used or refurbished equipment may provide a cost savings.
2. Annual costs occur over a 10-year period. No equipment replacement costs are contemplated during this 10-year study period.
3. Each option, except for Option 7, assumes purchase and installation of:
    a. One new baler (PTR Baler and Compactor 3400HD or equivalent);
    b. One self-contained trailer for employee office with bathroom;
    c. On-site septic and water supply well.
    d. Figure 2 depicts conceptual location for the proposed employee office, septic system and water well.
4. Disposal costs are based on a $95 / Ton fee currently paid to WIN Waste for 2025 for all cost options. Transportation and collection fees are considered separately from disposal costs and vary by option.
5. Annual disposal fee increases are not contemplated in this study, nor are other inflationary costs beyond an annual discount rate of 3%.
6. This study assumes a total population of 2,426 residents that are housed in 1,051 individual residences/living units that are separated by approximately 20 miles of paved and 30 miles of unpaved Class V Roads.
7. Waste tonnages reported by the Town[1] indicate collection of the following wastes in 2024:
    a. 77.02 Tons of C&D wastes
    b. 91.90 Tons of Total Recyclables
    c. 396.71 Tons Municipal Solid Waste / General Refuse
    d. 565.63 Tons of Total Solid Waste

[1] From 2024 NHDES Annual Reporting Form

8. Based on the 2024 solid waste collection data, an annual recycling rate of approximately 16.25% is assumed for this analysis.
9. Aries' Cost Option analysis assumes a total of one Ton of MSW generated per residence per year based on industry waste disposal estimates for New Hampshire[2]. Therefore, this study assumes the Town's total annual waste disposal to be 1,051 Tons, of which approximately 16.25%, or approximately 171 Tons will be collected recyclables.
10. The difference between the reported total waste collected in 2024 (~566 Tons) and the study tonnage (~1,051 Tons) is likely due to a significant proportion of town residents using private waste haulers to manger their residential wastes. This percentage is unquantified at this time and was not further considered in this study.
11. Income generated from recyclables is not accounted for in this analysis and is assumed to be negligible relative to MSW collection and disposal costs. It is further assumed that the primary benefit of the Town's significant recycling program is to reduce the overall MSW disposal tonnages and, therefore, costs.
12. Present Worth (PW) Cost are based on an annual discount rate of 3%.
13. Cost estimates for each line item have been rounded to the nearest $1,000.
14. Estimated PW costs have been rounded to the nearest $1,000.
15. A contingency factor of 30% has been included for all cost totals.

Present Worth Analysis

Aries estimated preliminary total costs for each cost option on a present worth basis assuming a 3% interest rate. The projected costs are based on initial capital costs such as building construction and equipment purchase and projected present worth annual costs such as MSW management costs (e.g. collection, hauling and disposal), facility staffing and other recurring expenses. Aries' present worth cost estimates for each cost option are summarized on Table 1, while present worth cost estimate details for each cost option are presented in Appendix A.

Based on the present worth cost estimates presented in Table 1, Cost Option 2 - Install New Stand-Alone Single-Phase Compactor is the lowest cost option with a total present worth cost estimate of approximately $2,240,500, which is closely followed by Cost Option 3 - Install New Rear-Feed Single-Phase Compactor Attached to Transfer Station Building with a total present worth cost estimate of approximately $2,321,300.

Aries notes that the option costs provided in this study are preliminary and are for planning purposes only. Aries anticipates that the provided preliminary cost estimates will differ from actual costs encountered during implementation of a selected cost option due to changing market costs, availability, site-specific considerations not yet evident and other factors. Therefore, Aries' preliminary costs provided as part of this study include a 30% contingency factor.

[2] Personal communication with Casella representatives.

Recommendations

Based on the above-described findings, Aries recommends considering Cost Option 2, which includes purchase and installation of a new 4-yard compactor with phase converter to collect and compact MSW in place of the current compactor truck. Figure 2 depicts a concept plan of the recommended Cost Option 2.

Advantages of this option include separation of the MSW and recyclable unloading areas, which should allow for increased throughput of vehicles at the facility. Additionally, this option generally leaves the current transfer station intact and includes new construction of the compactor and canopy in an area located away from previously identified buried solid waste and also avoids potential unknown structural conditions that are likely to be encountered during building retrofits anticipated for Cost Option 3.

SALT SHED RELOCATION & TRANSFER STATION STORAGE OPTIONS

Aries reviewed the possibility of relocating the Town's Salt Shed to the northwest corner of the Municipal Complex at 26 Baptist Road to provide additional storage area for recyclables in the existing salt shed. Aries understands that the Town's Salt Shed is approximately 40 feet wide by 60 feet long and anticipates that the Town would require at a minimum a similarly sized structure. If salt and sand were to be removed from the shed, Aries understands that the transfer station would use the shed for storage of recyclables while waiting for favorable market conditions to sell the recyclables.

Based on a limited walk with the Town officials, it was generally agreed that relocation of the salt shed to the Town's Municipal Complex would be difficult due to the limited area available on the Town's approximate 4.98-acre Municipal Complex property, identified as Lot 3 on Tax Map 107(Lot 107-3). Limitations observed during the site walk included:

1. The presence of an existing solar power array installation located in the northwestern portion of the property;
2. Close proximity of the northern property boundary to existing parking and storage areas, which would limit construction of an adequately sized salt shed; and
3. Restrictions for placing the salt shed along the frontage of the property.

Based on these observations, Aries considers relocation of the Town salt shed to Municipal Complex to be infeasible without purchase of additional adjoining property.

Discussions with Town representative indicated that the current salt shed located at the transfer station property could be used for storage of recyclables. Aries, however, did not assess the shed's structural integrity nor suitability for housing recyclables and relies on the Town's opinion of suitability. Aries further understands the Town currently stores recyclables in approximately six full-sized trailers that are parked both south and west of the recycling building. Aries further understands that some of the current trailers require repair or replacement.

Review of the transfer station property indicated an approximate 0.5-acre area located in the southern portion of the property could potentially be developed with a new salt shed. This area is located south of the burn pit and is outside the location of know buried solid waste. Construction of a new salt shed in this area would allow the recycling center to utilize the existing salt shed for recyclable storage and avoid the need to purchase new property to construct a new salt shed.

Regarding storage of recyclables, replacement of the aging trailers with a new storage building could provide the required storage area for the recycling center that could incorporate an employee office area and bathroom and alleviate the need for a replacement salt storage shed. Aries recommends assessing whether an appropriate building could be constructed in the trailer storage area located west of the recycling building that would also allow for a single loading dock located further west.

Aries appreciates the opportunity to provide the Town with technical assistance on this project. Please contact the undersigned if you have any questions or need additional information.

Sincerely,
Aries Engineering, LLC

George C. Holt, P.G.
Principal Hydrogeologist

Kathryn A. Ward, P.E.
Principal Engineer

GCH:pj

Attachments: Table 1 – Cost Option Analysis Summary
Figure 1 – Existing Conditions Site Plan
Figure 2 – Concept Plan
Appendix A – Present Worth Cost Estimate Details

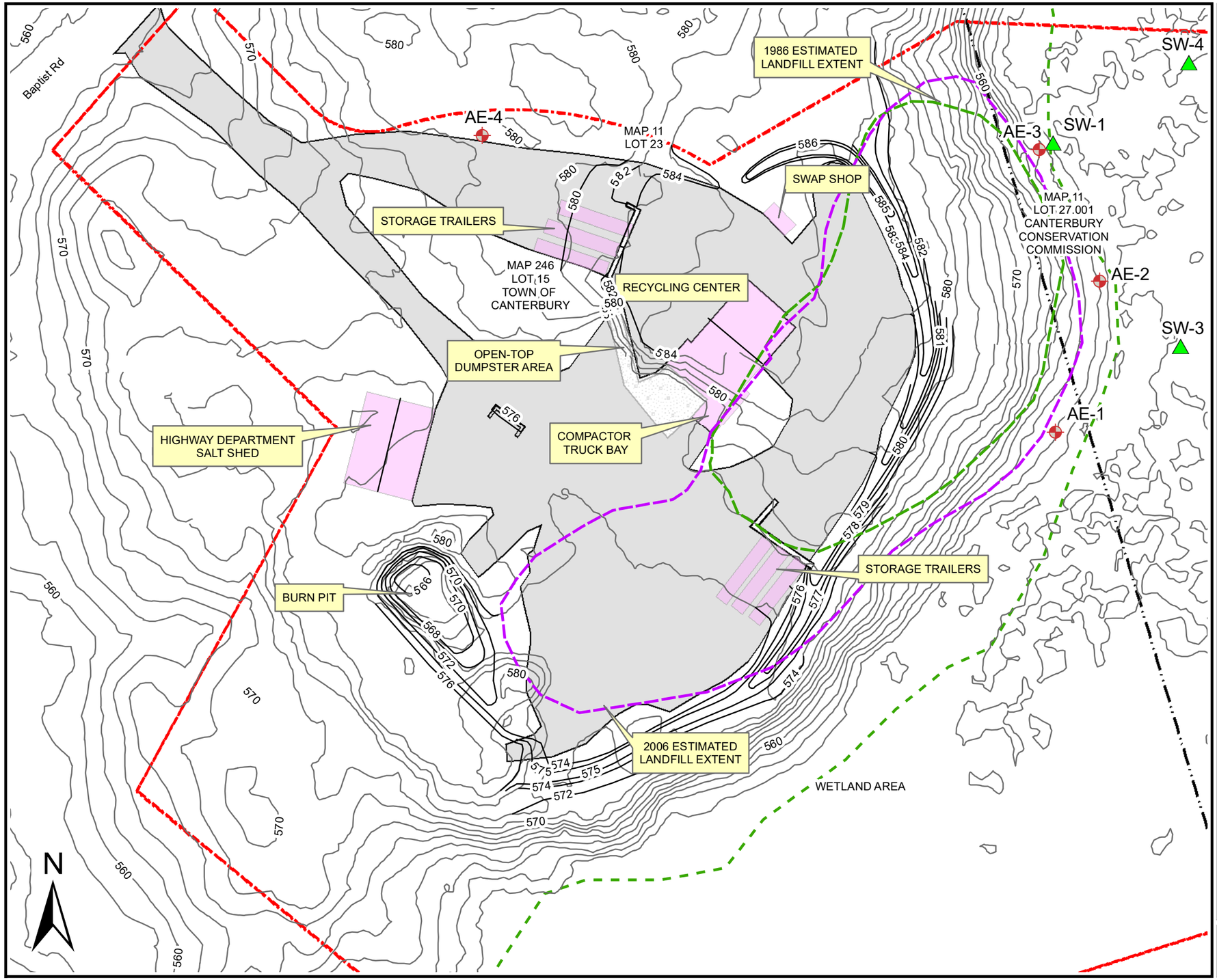
TABLE 1
COST OPTION ANALYSIS
CANTERBURY TRANSFER STATION
83 BAPTIST ROAD
CANTERBURY, NEW HAMPSHIRE

		Existing Transfer Station				New Transfer Station		Subcontracted Services	
	Cost Option 0 Current Operations	Cost Option 1 Replace Compactor Truck	Cost Option 2 Install New Stand-Alone 1-Phase Compactor	Cost Option 3 Install New Rear-Feed 1-Phase Compactor Attached to TS Building	Cost Option 4 Subcontract Solid Waste Disposal and Recycling	Cost Option 5 Purchase & Construct New Transfer Station Property	Cost Option 6 Subcontract Solid Waste Disposal and Recycling	Cost Option 7 Casella MSW & Recycling Curbside Pickup	Cost Option 8 Casella MSW-Only Curbside Pickup Town-Run Recycling @ TS
Est. 1st Year Engineering and Design Costs	$0	$0	$0	$29,300	No Bids Provide	$120,973	No Bids Provide	$0	$0
Est. 1st Year Capital Costs	$164,900	$418,000	$288,500	$340,000	$0	$1,261,500	$0	$0	$0
Sum of Est.1st Year Costs	$164,900	$418,000	$288,500	$369,300	$0	$1,382,473	$0	$0	$0
Est. Annual MSW Pick-Up & Transportation Costs	$0	$0	$0	$0	$0	$0	$0	$269,000	$359,000
Est. Annual MSW Disposal Costs	$108,700	$108,700	$108,700	$108,700	$0	$108,700	$0	$108,700	$108,700
Est. Recycling Center Operation Costs	$125,300	$125,300	$120,100	$120,100	$0	$120,100		$0	$100,600
Analysis Period (years)	10	10	10	10	10	10	10	10	10
PW Factor (P/A, 5%)	8.530	8.530	8.530	8.530	8.530	8.530	8.530	8.530	8.530
Est. Total Disposal and Operation PW Costs	$1,996,000	$1,996,000	$1,952,000	$1,952,000	$0	$1,952,000	$0	$3,222,000	$4,848,000
Total Est. PW Cost	$2,160,900	$2,414,000	$2,240,500	$2,321,300	$0	$3,334,473	$0	$3,222,000	$4,848,000

Assumptions:

1. Aries' waste management estimated cost comparisons are based on the average of the estimated cost range.
2. Recycling center operation costs occur over the specified treatment time (years).
3. Disposal Costs occur over the specified treatment time (years).
4. Aries' Cost Option analysis assumes a total of one (1) ton of municipal solid waste generated per residence per each year based on industry waste disposal estimates for New Hampshire.
5. Annual recycling rate of approximately 16.25% is based on Town of Canterbury 2024 MSW and recycling tonnages.
6. Income from sale of recyclables is assumed to be negligible.
7. Present Worth (PW) Cost are based on an annual discount rate of 3%.
8. Cost estimates for each line item have been rounded to the nearest $1,000.
9. Estimated PW costs have been rounded to the nearest $1,000.
10. A contingency factor of 30% has been included for all cost totals.

ARIES ENGINEERING



NOTES

1. Plan prepared from: a plan entitled "Town of Canterbury - Dump Land", prepared by G.S. Jackson, dated December 17, 1987; Aries' November 24, 2020, field survey observations; Town of Canterbury Tax Maps; and Geographic information Systems (GIS) data provided by the New Hampshire Geographically Referenced Analysis and Information Transfer System (NH GRANIT) maintained by University of New Hampshire and the NH Office of Strategic Initiatives.

2. Site boundary and building locations are based on an overlay of the site features on NH GRANIT GIS data. Therefore, all site features are approximately located.

3. This plan is not to be used for construction, survey or boundary purposes.

4. Ground surface contours interpolated from Light Detection and Ranging (LiDAR) Bare Earth DEM imagery obtained from NH GRANIT and Aries' November 24, 2020, field survey. LiDAR data were collected on September 14, 2012.

Legend

Source

- 1986 Jackson Survey Plan
- 2006 Test Pit Explorations
- Groundwater Monitoring Well
- Surface Water Sample Location
- 2-Foot Ground Surface Elevation Contours
- Approximate Edge of Wetland
- Groundwater Management Zone Boundary
- Concrete Pad
- Site Buildings
- Groundwater Management Zone Boundary
- Property Line
- Easement Line
- Structures
- Gravel Driveway

0 30 60 120 180 240 Feet

Aries Project # 2025-013
File # 2025-013(1)9.25.MXD

ARIES ENGINEERING
104 PLEASANT STREET
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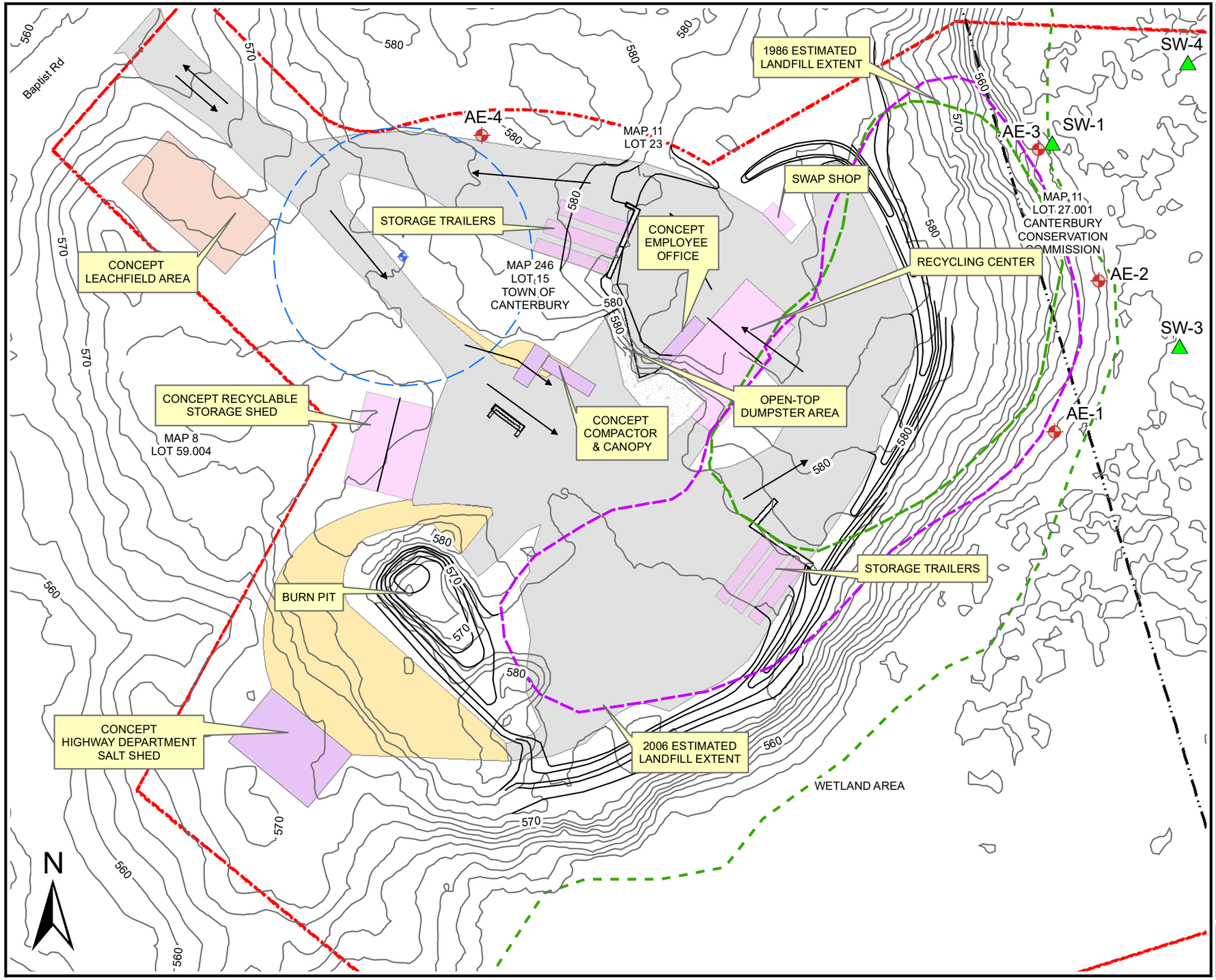
CANTERBURY SOLID WASTE FACILITY
83 BAPTIST ROAD
CANTERBURY, NEW HAMPSHIRE

EXISTING CONDITIONS PLAN

SEPTEMBER 2025 FIGURE 1



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2. Site boundary and building locations are based on an overlay of the site features on NH GRANIT GIS data. Therefore, all site features are approximately located.

3. This plan is not to be used for construction, survey or boundary purposes.

4. Ground surface contours interpolated from Light Detection and Ranging (LiDAR) Bare Earth DEM imagery obtained from NH GRANIT and Aries' November 24, 2020, field survey. LiDAR data were collected on September 14, 2012.

Legend

- Proposed Water Supply Well
- Proposed Traffic Pattern
- Groundwater Monitoring Well
- Surface Water Sample Location
- 2-Foot Ground Surface Elevation Contours
- Approximate Edge of Wetland
- Proposed Site Buildings
- Concrete Pad
- Site Buildings
- Groundwater Management Zone Boundary
- Proposed Gravel Driveway
- Existing Gravel Driveway
- Groundwater Management Zone Boundary

0 30 60 120 180 240 Feet

Aries Project # 2025-013
File # 2025-013(2)9.25.MXD

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CANTERBURY SOLID WASTE FACILITY
83 BAPTIST ROAD
CANTERBURY, NEW HAMPSHIRE

CONCEPT PLAN

SEPTEMBER 2025 FIGURE 2

COST ESTIMATION WORK SHEET - COST OPTION 0 (No Change)
SOLID WASTE MANAGEMENT ALTERNATIVE: Current Operations
Town of Canterbury
Aries Project # 2025-013

TASK	Units	Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
1st YEAR CAPITAL COSTS								
Purchase								
One baler (PTR Baler and Compactor 3400HD or equivalent) (New)	1	at	$26,543	$26,543.00				
Self-contained trailer for employee office with bathroom	1	LS	$57,770	$57,770.00				
Installation - concrete pad	256	SF	$10	$2,560.00				
On-site septic and well	1	LS	$40,000	$40,000.00				
Subtotal					$126,873.00	$38,061.90	$164,934.90	
TOTAL 1st YEAR COST ESTIMATE					$126,873.00			
CONTINGENCY						$38,061.90		
TOTAL 1st YEAR COST ESTIMATE AND CONTINGENCY							$165,000	
SYSTEM ANNUAL COSTS								
Pick-Up and Transportation Cost								
Subcontractor (1 ton / household / year) based on Casella Statistics	0	Tons	$196.67	$0.00				
Subtotal					$0.00	$0.00	$0.00	
Engineering Costs								
		month		$0.00				
		at		$0.00				
Subtotal					$0.00	$0.00	$0.00	
Disposal								
Win-Waste	880	Tons	$95.00	$83,620.19				
Subtotal					$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations								
Labor - Part-Time	2	year	$21,000.00	$42,000.00				
Manager	1	year	$30,000.00	$30,000.00				
Labor - Operator with CLD	1	year	$10,000.00	$10,000.00				
Operator training/permitting/fees	1	year	$1,000.00	$1,000.00				
Electric	12	month	$250.00	$3,000.00				
Overhead-Building Maintenance	12	month	$200.00	$2,400.00				
Truck O&M	1	year	$4,000.00	$4,000.00				
Truck Fuel	1040	gal	$3.85	$4,004.00				
Subtotal					$96,404.00	$28,921.20	$125,325.20	
TOTAL ANNUAL COST ESTIMATE					$180,024.19			
CONTINGENCY						$54,007.26		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY							**$234,000**	

COST ESTIMATION WORK SHEET - COST OPTION 1
SOLID WASTE MANAGEMENT ALTERNATIVE: Replace Compactor Truck
Town of Canterbury
Aries Proejct # 2025-013

TASK	Units	Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
1st YEAR CAPITAL COSTS								
Purchase Compactor Truck								
2024 KENWORTH T380	1	at	$194,900	$194,900.00				
One baler (PTR Baler and Compactor 3400HD or equivalent) (New)	1	at	$26,543	$26,543.00				
Self-contained trailer for employee office with bathroom	1	LS	$57,770	$57,770.00				
Installation - concrete pad	256	SF	$10	$2,560.00				
On-site septic and well	1	LS	$40,000	$40,000.00				
Subtotal					$321,773.00	$96,531.90	$418,304.90	
TOTAL 1st YEAR COST ESTIMATE					$321,773.00			
CONTINGENCY						$96,531.90		
TOTAL 1st YEAR COST ESTIMATE AND CONTINGENCY							**$418,000**	
SYSTEM ANNUAL COSTS								
Pick-Up and Transportation Cost								
Subcontractor (1 ton / household / year) based on Casella Statistics	0	Tons	$196.67	$0.00				
Subtotal					$0.00	$0.00	$0.00	
Engineering Costs								
		month		$0.00				
		at		$0.00				
Subtotal					$0.00	$0.00	$0.00	
Disposal								
Win-Waste	880	Tons	$95.00	$83,620.19				
Subtotal					$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations								
Labor - Part-Time	2	year	$21,000.00	$42,000.00				
Manager	1	year	$30,000.00	$30,000.00				
Labor - Operator with CLD	1	year	$10,000.00	$10,000.00				
Operator training/permitting/fees	1	year	$1,000.00	$1,000.00				
Electric	12	month	$250.00	$3,000.00				
Overhead	12	month	$200.00	$2,400.00				
Truck O&M	1	year	$4,000.00	$4,000.00				
Truck Fuel	1040	gal	$3.85	$4,004.00				
Subtotal					$96,404.00	$28,921.20	$125,325.20	
TOTAL ANNUAL COST ESTIMATE					$180,024.19			
CONTINGENCY						$54,007.26		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY							**$234,000**	

COST ESTIMATION WORK SHEET - COST OPTION 2
SOLID WASTE MANAGEMENT ALTERNATIVE: Install New Stand-Alone 1-Phase Compactor
Town of Canterbury
Aries Proejct # 2025-013

TASK	Units	Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
1st YEAR CAPITAL COSTS								
Purchase Compactor (1-Phase)								
- PTR TP4000HD – 4-yard Compactor (1-phase)	1	at	$31,446	$31,446.00				
- Power Unit & VFD	1	at	$3,895	$3,895.00				
- Tank Heater	1	at	$585	$585.00				
- Rear-Feed Hopper	0	at	$4,000	$0.00				
- Freight	1	at	$1,500	$1,500.00				
- Installation	1	at	$2,000	$2,000.00				
- Receiver	2	at	$9,800	$19,600.00				
One baler (PTR Baler and Compactor 3400HD or equivalent) (New)	1	at	$26,543	$26,543.00				
Compactor Canopy								
- Build Canopy for stand-alone compactor	240	ft^2	$150	$36,000.00				
Self-contained trailer for employee office with bathroom	1	LS	$57,770	$57,770.00				
Installation - concrete pad	256	SF	$10	$2,560.00				
On-site septic and well	1	LS	$40,000	$40,000.00				
Subtotal					$221,899.00	$66,569.70	$288,468.70	
Engineering Design and Construction Management								
- Preliminary Design Engineering Costs	1	at	$7,500	$7,500.00				
- Geotechnical Engineering Costs	0	at	$7,500	$0.00				
- Final Design and Construction Management Engineering Costs	1	at	$15,000	$15,000.00				
Subtotal					$22,500.00	$6,750.00	$29,250.00	
TOTAL 1st YEAR COST ESTIMATE					$244,399.00			
CONTINGENCY						$73,319.70		
TOTAL 1st YEAR COST ESTIMATE AND CONTINGENCY							**$318,000**	
SYSTEM ANNUAL COSTS								
Pick-Up and Transportation Cost								
Subcontractor -Hauling	52	Trip	$700.00	$36,400.00				Zero-Waste
Subtotal					$36,400.00	$10,920.00	$47,320.00	
Engineering Costs								
		month		$0.00				
		at		$0.00				
Subtotal					$0.00	$0.00	$0.00	
Disposal								
Win-Waste	880	Tons	$95.00	$83,620.19				
Subtotal					$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations								
Labor - Part-Time	2	year	$21,000.00	$42,000.00				
Manager	1	year	$30,000.00	$30,000.00				
Labor - Operator with CLD	0	year	$10,000.00	$0.00				
Operator training/permitting/fees	0	year	$1,000.00	$0.00				
Electric	12	month	$1,500.00	$18,000.00				
Overhead	12	month	$200.00	$2,400.00				
Truck O&M	0	year	$4,000.00	$0.00				
Truck Fuel	0	gal	$3.85	$0.00				
Subtotal					$92,400.00	$27,720.00	$120,120.00	
TOTAL ANNUAL COST ESTIMATE					$212,420.19			
CONTINGENCY						$63,726.06		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY							**$276,000**	

COST ESTIMATION WORK SHEET - COST OPTION 3
SOLID WASTE MANAGEMENT ALTERNATIVE: Install New Rear-Feed 1-Phase Compactor Attached to TS Building
Town of Canterbury
Aries Proejct # 2025-013

TASK	Units	Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
1st YEAR CAPITAL COSTS								
Purchase Compactor (1-Phase)								
- PTR TP4000HD – 4-yard Compactor (1-phase)	1	at	$31,446	$31,446.00				
- Power Unit & VFD	1	at	$3,895	$3,895.00				
- Tank Heater	1	at	$585	$585.00				
- Rear-Feed Hopper	1	at	$4,000	$4,000.00				
- Freight	1	at	$1,500	$1,500.00				
- Installation	1	at	$2,000	$2,000.00				
- Receiver	2	at	$9,800	$19,600.00				
One baler (PTR Baler and Compactor 3400HD or equivalent) (New)	1	at	$26,543	$26,543.00				
Transfer Station Building								
- Retrofit Compactor Truck Bay to Rear-Load Compactor	720	ft^2	$100	$72,000.00				
Self-contained trailer for employee office with bathroom	1	LS	$57,770	$57,770.00				
Installation - concrete pad	256	SF	$10	$2,560.00				
On-site septic and well	1	LS	$40,000	$40,000.00				
Subtotal					$261,899.00	$78,569.70	$340,468.70	
Engineering Design and Construction Management								
- Preliminary Design Engineering Costs	1	at	$7,500	$7,500.00				
- Geotechnical Engineering Costs	0	at	$7,500	$0.00				
- Final Design and Construction Management Engineering Costs	1	at	$15,000	$15,000.00				
Subtotal					$22,500.00	$6,750.00	$29,250.00	
TOTAL 1st YEAR COST ESTIMATE					$284,399.00			
CONTINGENCY						$85,319.70		
TOTAL 1st YEAR COST ESTIMATE AND CONTINGENCY							**$370,000**	
SYSTEM ANNUAL COSTS								
Pick-Up and Transportation Cost								
Subcontractor (1 ton / household / year) based on Casella Statistics	0	Tons	$196.67	$0.00				
Subtotal					$0.00	$0.00	$0.00	
Engineering Costs								
		month		$0.00				
		at		$0.00				
Subtotal					$0.00	$0.00	$0.00	
Disposal								
Win-Waste	880	Tons	$95.00	$83,620.19				
Subtotal					$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations								
Labor - Part-Time	2	year	$21,000.00	$42,000.00				
Manager	1	year	$30,000.00	$30,000.00				
Labor - Operator with CLD	0	year	$10,000.00	$0.00				
Operator training/permitting/fees	0	year	$1,000.00	$0.00				
Electric	12	month	$1,500.00	$18,000.00				
Overhead	12	month	$200.00	$2,400.00				
Truck O&M	0	year	$4,000.00	$0.00				
Truck Fuel	0	gal	$3.85	$0.00				
Subtotal					$92,400.00	$27,720.00	$120,120.00	
TOTAL ANNUAL COST ESTIMATE					$176,020.19			
CONTINGENCY						$52,806.06		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY							**$229,000**	

COST ESTIMATION WORK SHEET - COST OPTION 5
SOLID WASTE MANAGEMENT ALTERNATIVE: Purchase & Construct New Transfer Station Property
Town of Canterbury
Aries Proejct # 2025-013

TASK	Units		Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
1st YEAR CAPITAL COSTS									
Property Purchase		1	at	$400,000	$400,000.00				Zillow, Loop Net for local listings
Subtotal						$400,000.00	$120,000.00	$520,000.00	
Transfer Station Building									
- 40' X 80' Pre-Engineered Mono Slope Building		3,200	ft^2	$40	$128,800.00				
-3-Bay Loading Dock Overhead Doors		3	at	$3,364	$10,091.00				
- Overhead Doors		3	at	$6,066	$18,199.00				
- Entrance Doors		4	at	$3,222	$12,886.00				
- Windows		2	at	$785	$1,569.00				
- Interior Partitions		720	ft^2	$10	$7,071.00				
- Ceiling		800	ft^2	$11	$8,657.00				
- Interior Doors		2	at	$1,725	$3,450.00				
- Concrete foundation, slab floor, retaining walls, pads		1	at	$139,102	$139,102.00				
- Excavation for building foundations and retaining walls	Included								
- Balanced Cut and Fill to determine final grades	Included								
- Gravel road beds, loaming and seeding	Included								
- Underground utility conduit and piping installation	Included								
General Conditions		1	at	$32,983	$32,982.50				
Transfer Station Building Subtotal									
Other Miscellaneous									
On-site septic and well		1	LS	$40,000	$40,000.00				
- PTR TP4000HD – 4-yard Compactor (1-phase)		1	at	$31,446	$31,446.00				
- Power Unit & VFD		1	at	$3,895	$3,895.00				
- Tank Heater		1	at	$585	$585.00				
- Rear-Feed Hopper		0	at	$4,000	$0.00				
- Freight		1	at	$1,500	$1,500.00				
- Installation		1	at	$2,000	$2,000.00				
- Receiver		2	at	$9,800	$19,600.00				
- Roll-Off Containers for bulk storage (4 units)		0	at	$5,500	$0.00				
- One baler (PTR Baler and Compactor 3400HD or equivalent) (New)		1	at	$26,543	$26,543.00				
- Fork Lift for moving baled recyclables (Used)		0	at	$20,500	$0.00				
- Pallet Jack		1	at	$9,950	$9,950.00				
- Electrical		3,200	ft^2	$13	$40,480.00				
- Electrical Service Connection		1	at	$29,070	$29,070.00				
- Space heater		400	ft^2	$6	$2,500.00				
Subtotal						$570,376.50	$171,112.95	$741,500.00	
Engineering Design and Construction Management									
- Preliminary Design Engineering Costs		1	at	$28,519	$28,518.83				
- Geotechnical Engineering Costs		1	at	$7,500	$7,500.00				
- Final Design and Construction Management Engineering Costs		1	at	$57,038	$57,037.65				
Subtotal						$93,056.48	$27,916.94	$120,973.42	
TOTAL 1st YEAR COST ESTIMATE						$1,063,432.98			
CONTINGENCY							$319,029.89		
TOTAL 1st YEAR COST ESTIMATE AND CONTINGENCY								**$1,382,000**	
SYSTEM ANNUAL COSTS									
Pick-Up and Transportation Cost									
Subcontractor (1 ton / household / year) based on Casella Statistics		0	Tons	$196.67	$0.00				
Subtotal						$0.00	$0.00	$0.00	
Engineering Costs			month		$0.00				
			at		$0.00				
Subtotal						$0.00	$0.00	$0.00	
Disposal									
Win-Waste		880	Tons	$95.00	$83,620.19				
Subtotal						$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations									
Labor - Part-Time		2	year	$21,000.00	$42,000.00				
Manager		1	year	$30,000.00	$30,000.00				
Labor - Operator with CLD		0	year	$10,000.00	$0.00				
Operator training/permitting/fees		0	year	$1,000.00	$0.00				
Electric		12	month	$1,500.00	$18,000.00				
Overhead		12	month	$200.00	$2,400.00				
Truck O&M		0	year	$4,000.00	$0.00				
Truck Fuel		0	gal	$3.85	$0.00				
Subtotal						$92,400.00	$27,720.00	$120,120.00	
TOTAL ANNUAL COST ESTIMATE						$176,020.19			
CONTINGENCY							$52,806.06		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY								**$229,000**	

Property Comps	Acres	Price	Commercial
34 Boyce Road	8.42	$399,000.00	
445 Shaker Road	10.02	$250,000.00	
4 Old Boyce Road	3.5	$799,000.00	Yes
1 Hall Road	5.1	$250,000.00	yes
Rum Brook Road	70	$325,000.00	
Average		$404,600.00	

COST ESTIMATION WORK SHEET - COST OPTION 7
SOLID WASTE MANAGEMENT ALTERNATIVE: Casella MSW & Recycling Curbside Pickup
Town of Canterbury
Aries Proejct # 2025-013

TASK	Units	Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
ANNUAL COSTS								
Pick-Up and Transportation Cost								
Casella	1,051	Tons	$196.67	$206,696.67				
(1 ton / household / year) based on Casella Statistics								
Subtotal					$206,696.67	$62,009.00	$268,705.67	
Engineering Costs								
		month		$0.00				
		at		$0.00				
Subtotal					$0.00	$0.00	$0.00	
Disposal								
Casella - MSW	880	Tons	$95.00	$83,620.19				
	171	at	$0.00	$0.00				
Subtotal					$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations								
Labor - Part-Time	0	year	$21,000.00	$0.00				
Manager	0	year	$30,000.00	$0.00				
Labor - Operator with CLD	0	year	$10,000.00	$0.00				
Operator training/permitting/fees	0	year	$1,000.00	$0.00				
Electric	0	month	$1,500.00	$0.00				
Overhead	0	month	$200.00	$0.00				
Truck O&M	0	year	$4,000.00	$0.00				
Truck Fuel	0	gal	$3.85	$0.00				
Subtotal					$0.00	$0.00	$0.00	
TOTAL ANNUAL COST ESTIMATE					$290,316.85			
CONTINGENCY						$87,095.06		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY							**$377,000**	

COST ESTIMATION WORK SHEET - COST OPTION 8
SOLID WASTE MANAGEMENT ALTERNATIVE: Casella MSW-Only Curbside Pickup
Town-Run Recycling @ TS

Town of Canterbury
Aries Project # 2025-013

TASK	Units	Type	Rate	Cost	SUBTOTAL	30% Contingency	ESTIMATED TASK TOTAL	Source
ANNUAL COSTS								
Pick-Up and Transportation Cost								
Casella with Automatic Side Loader (ASL)	880	Tons	$170.00	$149,636.13				
(1 ton / household / year) based on Casella Statistics								
One baler (PTR Baler and Compactor 3400HD or equivalent) (New)	1	at	$26,543	$26,543.00				
Self-contained trailer for employee office with bathroom	1	LS	$57,770	$57,770.00				
Installation - concrete pad	256	SF	$10	$2,560.00				
On-site septic and well	1	LS	$40,000	$40,000.00				
Subtotal					$276,509.13	$82,952.74	$359,461.86	
Engineering Costs								
		month		$0.00				
		at		$0.00				
Subtotal					$0.00	$0.00	$0.00	
Disposal								
Casella - MSW	880	Tons	$95.00	$83,620.19				
	171	at	$0.00	$0.00				
Subtotal					$83,620.19	$25,086.06	$108,706.24	
Recycling Center Operations								
Labor - Part-Time	2	year	$21,000.00	$42,000.00				
Manager	1	year	$30,000.00	$30,000.00				
Labor - Operator with CLD	0	year	$10,000.00	$0.00				
Operator training/permitting/fees	0	year	$1,000.00	$0.00				
Electric	12	month	$250.00	$3,000.00				
Overhead	12	month	$200.00	$2,400.00				
Truck O&M	0	year	$4,000.00	$0.00				
Truck Fuel	0	gal	$3.85	$0.00				
Subtotal					$77,400.00	$23,220.00	$100,620.00	
TOTAL ANNUAL COST ESTIMATE					$437,529.31			
CONTINGENCY						$131,258.79		
TOTAL ANNUAL COST ESTIMATE AND CONTINGENCY							**$569,000**	