CAPITAL IMPROVEMENT PROGRAM

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CAPITAL IMPROVEMENT PROGRAM

PROJECT YEAR	*2024*	**PROJECT COST**	*$1,937,600*
DESCRIPTION	*Automated Curbside Collection Vehicles*	**DEPARTMENT**	*Public Works- Sanitation*

DESCRIPTION (TO INCLUDE JUSTIFICATION):

Durham Public Works' Curbside Municipal Solid Waste Collection Program consists of two collection vehicles that operate four days per week. Each vehicle is operated by a single collection equipment operator and services approximately 1,900 collection points, collecting an average of 40,000 pounds of household trash and 24,000 pounds of recycling per week. While these semi-automated collection vehicles are capable of mechanically hoisting certain receptables, the majority of the containers setout curbside requires manual loading by the single collection equipment operator, as it is not in a receptable compatible with automatic hoisting. Collection efficiencies are further reduced by uncontained household trash and recycling which is frequently windblown, lending itself to unsightly areas and animal scavenging. These factors significantly reduce Durham Public Works' ability to maintain right-of-way cleanliness. Over the past two years, Durham Public Works prioritized this issue and began to explore the potential advantages that would result from the transition to what has become an industry standard of a fully automated curbside collection program, complete with uniform collection carts. Automated Collection Equipment Operators of automated curbside collection vehicles utilize a remotely operated arm from the driver's seat to unload material carts, eliminating the need to exit the vehicle at each collection point.

To further understand the details of the current program, the Department undertook a series of comprehensive curbside audits targeting the network of approximately 1,900 collection points. These audits were designed to gather information on metrics such as program participation, quantity of disposed materials and recycling participation and contamination levels. Additionally, to gain a further understanding of the potential program benefits, the Department had consultations with surrounding municipalities who have established similar programs, as well as, soliciting input from automated collection vehicle manufacturers. Based on these discussions, it was determined that the average community with an established automated collection program can collect 700-900 stops per day with an aggregate material weight of 10-12 tons utilizing a single truck and operator. Based on the results of the curbside audit and combined with industry standards, Durham Public Works is projecting that their Curbside Municipal Solid Waste Collection Program could be completed with a single truck over the course of three days, inclusive of conversion of the commercial recycling route to cart based automated collection. This increase in efficiency would result in the reduction of one truck and the need for one less operator, providing program cost savings and a significant reduction in greenhouse gas emissions. Additionally, street aesthetics would be enhanced significantly with the elimination of wind-induced scattering and recycling would be further incentivized through the uniform placement of standardized collection carts. Furthermore, a transition to an automated collection program would result in a safer working environment by minimizing physical strain and reducing the risk of operator injuries while increasing their longevity. Durham Public Works is proposing to further streamline the waste collection process by implementing single stream recycling for this program in alignment with the proposed 2024 improvements conducted at the Raymond A. LaRoche Sr. Transfer Station and Recycling Center.

Durham Public Works also evaluated the feasibility of contracting this program to a private waste hauler. Waste Management, Inc. provided a proposal for a similar level of service of $551,000 annually, exclusive of tipping fees or cart costs. This compares to the program's projected cost in FY24 of approximately $390,000 annually, inclusive of a 10-year amortization on the automated collection vehicles and exclusive of cart costs or tipping fees.

This funding request includes the purchase of two fully electric automated collection vehicles ($1,400,000) complete with charging infrastructure ($121,000) in Fiscal Year 2024, in addition too automated collection carts ($245,000) for each collection point. Durham Public Works recently submitted an application through the DERA State Grant Program to cover 45% (approximately $723,681) of the vehicle aquisition and charging infrastructure portion of this project which if successful would reduce the total project cost to $1,253,100. In the event that this project does not receive grant funding, Durham Public Works will instead purchase two diesel-powered automated collection vehicles ($860,000), trade in the existing vehicles (+$50,000) for a total project cost of $1,160,500 inclusive of the automated collection carts . The proposed project costs are inclusive of an approximate 10% contingency as a result of continued industry wide escalations in vehicle and material pricing.

Vehicle to be Replaced: # SW-3, 2013 Freightliner/GSP Curbside Recycler
SW-1, 2015 Freightliner/GSP Curbside Recycler

ESTIMATED COST	**PURCHASE PRICE**	**$ 1,942,600**
	ACCESSORIES*	**$ -**
	LESS TRADE-IN**	**$ (5,000)**
	NET PURCHASE PRICE	**$ 1,937,600**
	***Accessories include lighting, radios, striping, misc. equipment.**	
FINANCING	**OPERATING BUDGET**	**$ -**
	BOND - TOWN PORTION	**$ 1,213,919**
	FEDERAL/STATE GRANT	**$ 723,681**
	CAPITAL RESERVE ACCOUNT	**$ -**
	TOTAL FINANCING COSTS	**$ 1,937,600**
IF BONDED:	**NUMBER OF YEARS**	**10**
	TOTAL PRINCIPAL	**$ 1,213,919**
	TOTAL INTEREST (EST'D)	**$ 284,750**
	TOTAL PROJECT COST	**$ 1,498,669**

PROJECT YEAR	*2024*	PROJECT COST	*$350,000*
DESCRIPTION	*Transfer Station Facility Improvements*	DEPARTMENT	*Public Works - Sanitation*

DESCRIPTION (TO INCLUDE JUSTIFICATION):

Durham Public Works is requesting funding in fiscal year 2024 to implement facility improvements meant to increase operational efficiencies at the Raymond A. LaRoche, Sr. Transfer Station and Recycling Center. The proposed improvements include measures to optimize traffic flow, increase public safety and user convenience along the saw-tooth wall through the incorporation of protective barriers, improved signage and elevated MSW and recycling disposal locations.

The proposed plan integrates ground-mounted MSW and single stream recycling stationary compactors with standard detachable and enclosed roll-off containers. This much needed addition will significantly streamline the waste handling process, resulting in more resource efficient and sustainable facility operations. Presently, Durham Public Works utilizes a backhoe for the compaction of materials within the roll-off containers. This antiquated method produces a relatively low compaction rate ranging between 3 to 5 tons per rolloff container. Incorporating ground-mounted material compactors will substantially enhance compaction rates for MSW, ranging between 10-12 tons per container. This increase in compaction efficiency will reduce the number of landfill disposal trips by Solid Waste Division Operators by 65%, which translates into a significant reduction in diesel fuel consumption, vehicle wear and tear, increased productivity, and a substantial reduction in greenhouse gas emissions. This funding proposal encompasses the procurement of four compactors, six material containers, and all related construction expenses. The inclusion of two spare containers ensures seamless operations, preventing any disruptions in the event a container reaches its capacity during a time when the facility is open to the public.

The facility currently operates under a multi-stream recycling collection setup, with discreet disposal locations for specific commodities such as commingled containers, mixed paper, aluminum cans, and old corrugated containers. This arrangement often results in crossover traffic flows, backing of vehicles, unnecessary pedestrian traffic and recurrent bottlenecks around individual disposal locations frequently creating less than desirable conditions for facility users. Durham Public Works is proposing to reconfigure the existing layout to allow for the addition of the ground-mounted material compactors and facilitate the transition towards a single-stream recycling program. This reconfiguration will include two redundant locations for the disposal of household trash and single-stream recycling compactors/containers, in a revised configuration with the goal of mitigating traffic and pedestrian safety concerns.

Furthermore, a redesigned traffic pattern with new paint markings will improve the facility traffic flow of the approximately 600 daily visitors. The increased popularity of the Linda Hollister Swap Shop over several years has resulted in logistical hurdles associated with the lack of available parking. This congestion will be reduced by an expansion of the parking capacity on the Northwestern side of the facility and designating parking adjacent to the swap-shop for active loading/unloading only. This will reduce chokepoints at the exit of the facility, further streamlining traffic flow.

Lastly, within this funding proposal, provisions are made for the installation of Occupational Safety and Health Administration (OSHA) compliant protective barriers encircling the upper perimeter of the saw-tooth wall. This important addition will aid in ensuring a secure and risk-mitigated environment for facility users.

ESTIMATED COST	PRELIMINARY STUDY, DESIGN AND ENGINEERING	$ -
	FINAL DESIGN AND ENGINEERING	$ -
	CONSTRUCTION ENGINEERING OVERSIGHT	$ -
	CONSTRUCTION COSTS	$ 350,000
	CONTINGENCY	$ -
	TOTAL PROJECT COST	$ 350,000
FINANCING	OPERATING BUDGET	$ -
	BOND - TOWN PORTION	$ 350,000
	FEDERAL/STATE GRANT	$ -
	CAPITAL RESERVE ACCOUNT	$ -
	TOTAL FINANCING COSTS	
IF BONDED	NUMBER OF YEARS	5
	TOTAL PRINCIPAL	$ 350,000
	TOTAL INTEREST	$ 36,700
	TOTAL ESTIMATED COST	$ 386,700