Final Memorandum

Date:	Tuesday, July 10, 2018
Project:	City of Alexandria, Virginia, Resource Recovery Division Strategic Plan Review
To:	Michael Clem, Recycling Program Analyst
From:	Christopher Koehler, Susan Raila, Jeff Martirano, & Annette Scotto HDR
Subject:	Task 7 - Alternative Disposal Methods

Introduction

The City of Alexandria (City) has a responsibility to its citizens to provide for environmentally safe and economically viable disposal of solid waste. In Task 7, the City is looking for realistic and fiscally responsible alternatives to manage its waste during the period after the agreement with Covanta for operation of the Alexandria/Arlington waste-to-energy facility (A/A WTE) ends (after 2038). HDR will provide an objective discussion of alternative solid waste disposal methods that are reasonable given the potential quantity and composition of the solid waste stream.

This memo does not focus on the status of “emerging technologies” but rather concentrates on traditional management methods including continued operation of the waste-to-energy facility; waste transfer, haul, and disposal options; and continued use of recycling programs in proven and cost effective ways. However, it should also be noted that technologies can evolve quickly and what is considered an emerging technology today, might, over the course of the next 20 years become a reliable means of handling solid waste. Throughout this task, HDR has assumed that the City will continue to collect single-stream recyclables curbside.

Based on discussion with the City, HDR will address the following:

- What are the future options for the City’s residential and commercial wastes?
- What are the likely alternatives for disposal in 2038, if the Covanta A/A WTE Facility closes?
- Where will the City bring its waste for transfer, processing, or disposal?

Current Operation Overview

All residential trash (and most commercial waste) generated within the City is currently direct hauled to the A/A WTE Facility located on Eisenhower Drive in Alexandria. It is owned and operated by Covanta and is located in an industrial area on a parcel of land jointly owned by the City and Arlington County (County).

In 2038, ownership of the A/A WTE Facility will transfer back to the City and County. According to the Waste Disposal and Service Agreement (WDSA) with Covanta, Covanta must return the A/A Facility in “good order and condition, reasonable wear and tear of the Improvements excepted.”

Future Management Options

HDR has identified the City's most realistic future waste management options as:

1) Continue to operate the A/A WTE Facility;
2) Develop and operate a transfer facility within the City limits and haul waste to a disposal facility by one or both of the following;
    a. Via truck; and/or
    b. Via rail;
3) Privatize the Collection and Disposal of Residential Waste.

A description of each alternative is described herein.

Continue to Operate the Existing A/A WTE Facility

Ownership of the A/A WTE Facility will revert back to the City and County at the end of the 2038. According to the WDSA:

At the end of term (12/31/2038): "…*the Tenant shall peaceably and quietly leave, surrender, and yield up to Landlords the Facility Site and the Improvements, free and clear of any claim, lien, option, charge or encumbrance of any nature whatsoever, in good order and condition, reasonable wear and tear of the Improvements excepted".*

Continued operation of the Facility is a real option. The majority of WTE facilities operating in the United States were constructed with an economic life span of 25-30 years. However, the actual useful life of these facilities has been demonstrated in the U.S. and Europe to be much longer if the Owner, and/or Operator, has implemented a comprehensive preventative and corrective maintenance program and a long-term capital replacement program.

Based on HDR's observations of the A/A WTE Facility over the past approximately 20 years, HDR is currently of the opinion that Covanta is maintaining the Facility in accordance with accepted industry standards. However, it is critical that the City and County continue to monitor the level of maintenance and major capital refurbishments performed by Covanta, particularly during the last five (5) years of the WDSA. Based on HDR's recent WTE experience, the last 2 to 5 years of an operating agreement is when preventative maintenance can begin to slip or when major equipment refurbishment work gets deferred by the operator.

Assuming the A/A WTE Facility is maintained in good working order though the life of the WDSA, it is typical for major capital refurbishment projects to be established as part of end of term negotiations. The amount of end of term capital refurbishment can vary widely depending on past maintenance levels, contractual obligations, age of the facility, size of the facility, changes in regulations, and/or upgrades that the owner may want to implement to reduce future maintenance costs or improve revenue streams. HDR is aware of end of term capital refurbishment costs ranging from $15M (2018 USD) for a well maintained facilities to as high as $250M (2018 USD) for a facility that was poorly maintained during the last few years of operation. At minimum, major facility components, such as the waterwall tubes/panels, boiler tubes and pressure parts, scrubber vertical sidewalls and hoppers, baghouses, air pollution control ductwork, large fans and pumps, and

electrical, instrumentation and controls systems will likely require major refurbishment or replacement over the next 20-years (2018 to 2038).

Based on HDR's recent experience with comparably sized WTE facilities (i.e. approximately 1,000 ton per day), in addition to the capital required over the next 20 years to maintain safe and reliable operations until the year 2038, projected costs of $50M to $100M (2018 USD) for major equipment refurbishment and replacement projects could be expected to extend the life of the A/A Facility an additional 20 years beyond 2038. These capital costs may be much higher should the City choose to implement new technologies and materials instead of performing typical replacement. Continued preventative and major maintenance (i.e. every 5 to 7 years) of the turbine-generator set and auxiliary equipment should also be closely monitored.

Alternatively, it is possible that new advancements in thermal waste processing technologies will be developed and be commercially available by the year 2038. Starting in about 2028, the City and County should begin to evaluate traditional replacement-in-kind technologies versus a technology upgrade. Potential changes to the USEPA Maximum Achievable Control Technology (MACT) regulations could also drive the need for installing new advanced air pollution and boiler control technologies which will also be capital intensive.

In October 2025, per the WSDA, the tipping fee will drop to $0.00 per ton. This rate will continue until the end of term in 2038. The City should consider creating an enterprise fund for solid waste management and allocate a portion, if not all, of the savings for funding an end of term capital refurbishment plan or a replacement of the A/A WTE Facility. In the interim, the City should continue to track available alternative disposal options at a high level. However, given the amount of time it takes to plan, receive all the necessary approvals, and construct a new waste processing facility, the City should begin to look at alternatives to the A/A WTE Facility on a detailed level well in advance of the 2038 end of term. The option of investing capital to extend the life of the A/A WTE Facility may become more attractive if there are fewer future sustainable alternative disposal options available.

Waste to Energy Facility Option

Should the A/A WTE Facility close in 2038, disposing waste at another WTE facility within the region may also be an option. The closest facility that currently accepts outside waste is the 3,000 ton per day Fairfax County WTE facility located approximately 17 miles from the City that is owned and operated by Covanta. However, the Fairfax facility is approximately the same age as the A/A WTE Facility and operation beyond 2038 is also dependent on its maintenance and investment schedules. If the Fairfax facility remains open beyond 2038, it could be a viable alternative for the City's waste. Montgomery County Maryland's WTE facility is also within close proximity of the City (44-55 miles depending on route), however, currently that facility only accepts waste generated within the County. It also is approximately the same age as the Fairfax and A/A WTE Facilities.

Landfilling

If the City chooses not to continue operation of the A/A Facility, the City's most realistic alternative disposal option is to haul their waste to a nearby landfill. HDR researched landfills with long-term capacity located within a 250-mile driving distance from Alexandria (200-mile point-to-point radius) thorough various state and environmental websites (i.e. VADEQ, MDE, SWANA, etc.).

The results of the 250-mile search were filtered to landfills that meet the following criteria:

1) A current projected remaining capacity of 15M tons, and/or

2) An expected remaining permitted capacity until 2058 (20-years beyond 2038).

HDR did not contact these facilities to determine current disposal fees or restrictions, but rather listed potential landfills to show that there will, in all likelihood, be a landfill option available in 2038.

Table 1 presents a list of potential large disposal sites within a 250-mile drive that will likely have long-term capacity beyond 2038.

Table 1: Landfill Capacities

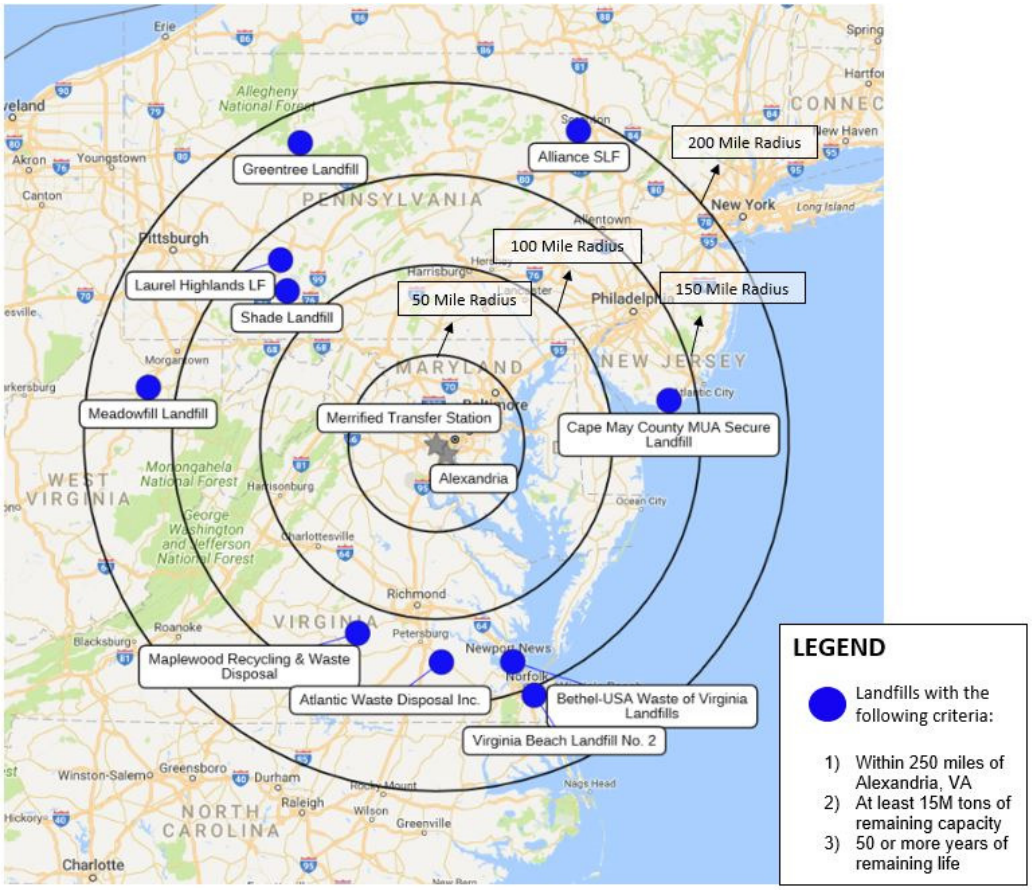
Landfill Name	State	Remaining Capacity (tons)	Estimated Closure Year	One-Way Miles
Alliance LF	PA	21,355,144	2093	240
Atlantic Waste Disposal Inc.	VA	47,158,750	2091	147
Cape May County MUA Secure Landfill	NJ	19,483,250	2094	186
Laurel Highlands LF	PA	25,985,328	2127	180
Greentree Landfill	PA	17,407,097	2061	240
Maplewood Recycling & Waste Disposal	VA	16,569,601	2164	144
Virginia Beach Landfill No. 2	VA	16,850,000	2117	196
Meadowfill Landfill	WV	20,048,306	2132	240
Shade Landfill	PA	N/A	2075	161
USA Waste of Virginia Landfills- Bethel	VA	23,523,548	2105	172

*Virginia Landfills- Virginia DEQ- Solid Waste 2016
**PA, MD, WV, and NJ landfills- EPA Landfill Data

Figure 1 shows existing landfills within a 250-mile drive of the City (200-mile radius).

As nearby landfills reach capacity it is assumed demand and prices will increase and some facilities will accept additional tonnage, potentially reducing the estimated closure year. Some facilities may also reserve capacity for their host communities or certain high value customers. The above table and map represent large landfills that are likely to have remaining long-term disposal capacity in 2038 and are within a 250-mile drive of Alexandria.

Figure 1: Map of Landfills within 250 Driving Miles of Alexandria



Develop a Transfer Station

In all likelihood, the City will have multiple future landfill options for waste disposal as described above, and may also have disposal options at other existing or yet to be developed WTE facilities. However, with the exception of the Fairfax Covanta WTE facility, most other options will be located too far for collection trucks to haul to directly.

Generally, after about 20-30 miles, the cost of directly hauling trash from the collection routes to the transfer station or disposal site becomes cost prohibitive. In order to dispose of future waste at an out-of-region landfill, WTE facility, or any other future disposal option, the City will need to consolidate wastes into larger transfer trucks that can be more cost effective. This consolidation is the purpose of a transfer station.

Processing Capacity Estimate

According to a 2018 study of Alexandria conducted by the Virginia Employment Commission, the population in the City of Alexandria is projected to increase by 2.8% from 2020 to 2040.[(1)] Despite this minor projected increase in population, HDR assumes that recycling rates will continue to have similar modest growth which will hold waste tonnages constant. Therefore, HDR developed an estimate of processing capacity and facility size based on the FY2016 residential and commercial waste estimate of 96,173 tons/year.

To develop this estimate HDR assumed the following:

1. 8 hours per day of operation;
2. 6 operating days per week;
3. 52 operating weeks per year;
4. FY2016 residential waste volume of 21,199 tons; and
5. FY 2016 commercial waste volume of 74,974 tons.

This equates to an average daily throughput of approximately 310 TPD (21,199 tons + 74, 974 tons divided by 312 operating days/year). However, the transfer station will need to be sized to accommodate peak delivery periods that occur as a result of fluctuation in delivery schedules and tonnage volumes. Based on a Daily Peak Factor of 1.35 the Facility will need to be sized to accept approximately 425 tons of waste per day.

Facility Sizing Estimate

HDR used a proprietary model to develop a rough estimate for the size of the transfer station.

To develop this estimate HDR made the following key assumptions:

1. 10 minute unload time
2. 4 unloading bays
3. 8 foot average pile height
4. 400 lbs/cubic yard MSW density
5. 1 Day of storage capacity on tipping floor
6. 1 load out lane
7. Only packer truck collection vehicles delivering waste (No public drop off)

Peak vehicles per hour (VPH) requirements are estimated in conjunction with the peak throughput to estimate the size requirements for the unloading, storage, and load out areas. Based on the projected peak throughput of 425 TPD, HDR estimates a facility size of approximately 9,000 SF, which includes approximately 7,600 SF for the tipping and storage area, and 1,600 SF for the load out area. An additional outside maneuvering area for the transfer trailers of approximately 8,400 SF will also be required.

This is the minimum size HDR recommends to process this estimated tonnage and site constraints and owner preference may require a different configuration that could increase the building footprint. It is also important to note that HDR is assuming no public vehicles will be accessing this facility. Should this facility need to be designed to accept public drop off, it will need to be expanded to accommodate additional vehicle throughput.

There may also be an opportunity to continue the City's relationship with the County and develop a regional transfer station. Another option is to develop a transfer station sized only to take residential wastes collected by the City. The transfer station described herein assumes all of the City's waste, residential and commercial, will be managed by this facility.

City Owned and Operated Transfer Station

The City could choose to develop a waste transfer station within the City limits.

Site selection is critical and the City should assume that the site will need to be approximately 3-5 acres (6-8 acres would be ideal, but not likely to be realistic given Alexandria's density) with good access to commercial truck routes and interstate highways, and potentially have rail access on-site or nearby. Additional area would allow for accommodating larger trucks turning radii and additional on-site storage of materials and equipment.

One option is to convert the existing A/A WTE Facility into a transfer station. HDR understands that the current A/A WTE Facility was built on the site of a former transfer station. Converting the existing facility back to a transfer station has some benefits. It would require no modification to the existing collection routes which will save costs on the need to re-train drivers. It may also be less costly to modify the existing receiving building than to construct a new transfer station on a new site and, in addition, the site already has a scale and scale house.

According to facility construction documents, the current A/A Facility tipping floor is 90 feet by 201 feet, or 18,090 SF, which is adequate sized to accommodate a tipping and storage floor based on HDR's sizing estimate. It also may be possible to maintain existing operation of the A/A Facility while portions of a transfer station are being constructed.

HDR recognizes that the area of the current A/A WTE Facility continues to evolve from an industrial neighborhood to what the City plans to be an increasingly residential and mixed use area. The continued development of the area might render this location unappealing to the local community. However, at this time, it is feasible to consider the A/A Facility a potential location for a transfer station which warrants future evaluation.

Contract to Privately Operated Transfer Stations

HDR researched privately owned transfer stations within a 20 mile radius that could have available capacity to accept the City's waste. Waste Management's Merrifield Transfer Station is approximately 11 miles from the City. However, the Merrifield Transfer Station is permitted only for C&D waste. Waste Management also operates the Northeast Transfer Station located on Queens Chapel Rd in Washington, DC, approximately 15 miles from the City which can accept MSW. However, this facility is currently operating under an "interim permit" to which the implications are unknown. Also, travelling in and out of Washington D.C. may be time consuming due to traffic. Two (2) other Washington D.C solid waste transfer stations at Benning Road and Fort Totten are open to Washington D.C. residents and for a limited variety of materials collected by commercial and institutional haulers. The next closest facility is the Manassas Transfer Station, recently purchased by Republic Waste Services, Inc., which is approximately 34 miles from Alexandria. With the exception of Merrifield, the option to contract to one of the existing transfer stations is unlikely.

Currently, the Merrifield Transfer Station is within direct hauling distance for waste vehicles. In fact, Alexandria's single stream recyclables are currently direct hauled by Bates Trucking & Trash Removal Inc. (Bates) to the Merrifield Transfer Station where they are consolidated and hauled to a material recovery facility located in Manassas, VA for further processing. However, the Merrifield Transfer Station is not currently permitted to accept municipal solid wastes. Given enough lead time and a long-term contract, Waste Management might be willing to attempt to modify its permit to

accept MSW and or expand this facility to accommodate the City's waste. There are no other transfer stations that will accept the City's waste that are located close enough to allow for direct haul of the City's waste as most municipal facilities are restricted to accepting only local wastes.

Transfer Station with Truck Haul

Because there are multiple landfills within 250 driving miles (200-mile radius), if the current A/A WTE Facility was to close, landfilling is an option for future disposal. Nationwide, hauling waste in transfer trailers is typically the most cost effective option for haul distances in the range of 25 to 250 miles. However, the 250-mile upper limit can be highly variable and factors such as labor and O&M costs, payload limits, and travel routes can increase or decrease this range.

HDR estimates truck hauling costs assuming the use of transfer trailers capable of hauling 20 tons per load to be in the range of $2.60 per mile at this upper haul distance limit of 250 miles. This rate assumes the City will contract out hauling to a private third party operator. The estimated round trip hauling costs to the Alliance LF in Taylor, PA (240 miles one way) and the Maplewood Landfill Facility in Jetersville, VA (144 miles one way) are approximately $62/ton and $39/ton, respectively. It is therefore cost effective to haul waste to the closest landfill that has capacity. Lower tip fees may be negotiated if the City is willing to guarantee a large annual tonnage and/or enter into a long-term contract.

A third option being attempted in some regions of the U.S. is to bale waste and haul via flatbed trucks. This method can reduce transportation costs as the flatbed truck may have the ability to backhaul other goods on the return trip. However, these cost savings need to be weighed against the additional costs incurred to bale the waste at the transfer station to the specifications and requirements of the haulers. In addition, some truckers, and some states, may require that the bales be wrapped in plastic adding to the shipping costs.

Transfer Station with Rail Haul

Class I rail service in Alexandria is provided by CSX and Norfolk Southern (NS). Municipal solid waste can be shipped via rail to distant landfills or WTE facilities, if they have the ability to accept rail-hauled waste. Typically, waste is compacted into intermodal containers and loaded onto flatbed rail cars either on-site or at an intermodal freight handling facility. However, there are no CSX freight handling facilities in Alexandria. The NS intermodal freight facility located in Alexandria on Van Dorn Street was converted into an ethanol trans-loading facility about 10-years ago. This limits the City's potential to use rail, as any rail transfer station would have to incur the added expense of developing a rail spur and an intermodal container loading system. Montgomery County, Maryland has a rail intermodal waste transfer station, however, at this time, the facility only accepts wastes generated within their county.

Costs to haul containerized MSW under a long term agreement will depend on a number of factors, including the origin/destination pair, the availability of capacity on the main and interconnecting lines, and the railroads' willingness to work with the City. Issues related to the size of the appropriate fleet needed to provide the required level of service will also need to be addressed.

In general, rail transportation typically becomes cost effective when distances exceed a 250 mile one-way threshold (500-miles round trip). Rail is almost always more cost effective for hauls in the 600 mile range (one-way).[(2)]

A significant portion of the cost of rail hauling is incurred getting the waste material into a container/onto the rail car and connected to CSX or NS. Once loading and connection cost are incurred, the costs for hauling the waste between 250 and 1,000 miles becomes progressively cheaper by the mile.

Based on discussions with rail professionals, the estimated cost to haul a 100 ton open gondola car from the northeast United States to a landfill in Ohio (about 750 miles one way) is approximately $4,000, or about $40/ton or about $0.05/ton-mile. Using four (4) 22-ton intermodal containers on a flat bed rail car raises this cost to about $45.45/ton or about $0.06/ton-mile.

For comparison purposes, to haul 100 tons via truck 750 miles will require 4 trucks (25 tons each) at $2.60/mile which is $78/ton or about $0.10/ton-mile. However, that only accounts for one-way hauling and because waste trucks/trailers typically cannot find a return haul load, they are forced to return empty which essentially doubles the cost of hauling by truck to $156/ton or $0.20/ton-mile.

Based on HDR's review of recent rail haul contracts, a "rule of thumb" budgetary cost estimate for rail haul is $0.50 - $0.10 per ton mile depending on guaranteed tonnages, contract duration, car/container load density, and distance hauled. This is strictly for rail hauling and does not include transload costs, dray, or disposal costs.

Rail haul does limit the disposal options as waste can only be shipped to those landfills that can accept rail cars and/or intermodal containers. It also should be noted that coordination with regional and major railroads can be challenging. There are also brokers who specialize in rail haul coordination that can be used to help smooth out the process.

Given that the City will likely have multiple landfills within a 250-mile driving distance, the transfer and hauling of waste via truck will, in all likelihood, be the most economical solution to manage the City's solid waste.

However, in the future the economics could change; therefore, rail haul should not be ruled out as a future option. One nearby landfill, Atlantic Waste Disposal in Waverly, VA (144 miles one-way), has access to a rail line and will have capacity past 2058.

Figure 2 – Rail Map of Virginia

Source: Virginia Department of Rail and Transportation

Estimate of Probable Costs – Transfer Station

HDR developed the following opinion of probable construction costs to develop a fully enclosed, top load transfer station with four (4) unloading bays and one (1) load out bay. The estimate is strictly for high level planning purposes only. Key assumptions are listed under each table.

Based on the projected throughput and sizing requirements discussed in the previous sections, HDR estimates the cost for a transfer station to be approximately $10.5 million in 2018 dollars. Transfer station costs include the transfer building, scale house, an administrative building, and two scales. The total cost for rolling stock is estimated to cost approximately $1.7 million and includes 2 front end loaders, a yard tractor, a skid loader, and a pickup truck.

Table 2 shows a breakdown of the capital costs associated with the design and construction of a 310 TPD (peak capacity of 425 TPD) transfer station in Alexandria.

Table 2: Capital Costs

Item	Description	Transfer Station Total
Site Acquisition	To be located by City – Assumed to be City owned Lot	$0
Site Development	Earthwork, roadways, utilities, stormwater control, surveying, etc.	$1,718,000
Facility Construction	Transfer Station, 300 S.F. Scale House, & 3,000 S.F. Administrative Building	$3,787,000
Rolling Stock	Initial Purchase of transfer trucks and trailers, front end loader, yard tractor, etc.	$1,733,000
Subtotal Costs		**$7,238,000**
Contingency (25%)		$1,809,500
Design, Permitting, Construction Period/ CM/CQA (20%)		$1,447,600
TOTAL		**$10,495,100**

NOTES
1. Assumes City owned site is selected ($0 acquisition costs)
2. Cost for office furniture, furnishings, or miscellaneous building equipment or supplies not included
3. Demolition costs for an existing structures on the selected site not included
4. The estimate of probable costs was developed using the following assumptions:
    a. The Annual Debt Service was calculated assuming a 20 year bond at 3% interest
    b. Assumes the Facility is tax exempt
    c. Suitable on-site soils are present for general earthwork tasks such as moving soil, grading, backfilling;
    d. There are existing utility connections available;
    e. The transfer station will be an open top load out process (no compactors);

HDR compared this cost estimate to six (6) transfer stations designed and built across North America over the past 12 years at an average cost per square foot of $282 in 2018 dollars. This is in-line with HDR's estimate of $303/square foot. Note the price per square foot is calculated by

dividing the Facility Construction costs ($3,787,000) by the total facility footprint of 12,500 square feet (which includes the tipping building, administrative building, and scale house).

Table 3 provides a breakdown of annual costs.

Table 3: Annual Costs

Item	Description	Annual Estimated Costs
Debt Service	20 years @ 3%	$701,000
Transfer Station O&M	Labor, building and equipment maintenance, supplies, fuel, and utilities	$1,504,000
Transportation	Estimated cost to haul to landfill 240 miles away	$5,967,600
Disposal	Estimated disposal costs at $30/ton	$2,885,190
Subtotal O&M Costs		**$11,057,790**
Contingency	@ 25%	$2,764,448
TOTAL ANNUAL OPERATIONAL COSTS		**$13,822,238**

NOTES
1. All costs are based on $2018 dollars
2. The Annual Debt Service was calculated assuming a 20 year bond at 3% interest and assumes the Facility is tax exempt
3. A rail transfer facility will incur additional costs such as rail spurs, rail cars or an intermodal container loading facility
4. Haul costs were developed with the following assumptions:
    a. 20 tons per trailer load
    b. based on a projected waste tonnage of 96,173 tons
    c. hauling will be contracted to private hauler but trucks and trailers will be owned and maintained by the City

HDR estimates that a transfer station of this size requires a staff of 8-10 fulltime workers. Labor and building operations and maintenance equipment costs are estimated to be approximately $1.5 million. The hauling costs vary widely and depend on factors such as haul distance, payload capacity, and whether or not the City contracts out the hauling. Assuming an average of 20 tons per load, HDR estimates the cost to haul a projected 96,173 tons of waste to a disposal facility 240 miles away to cost approximately $6 million annually, or $2.60 per mile at this haul distance. Labor rates and how the City determines to transport the way will affect this estimate. HDR assumes that the City will be purchasing and maintaining the trucks and transfer trailers but will be contracting the hauling. Disposal costs are estimated to be approximately $2.9 million based on this same tonnage and a $30/ton tip fee (in 2018 dollars).

Transfer Station Timeline

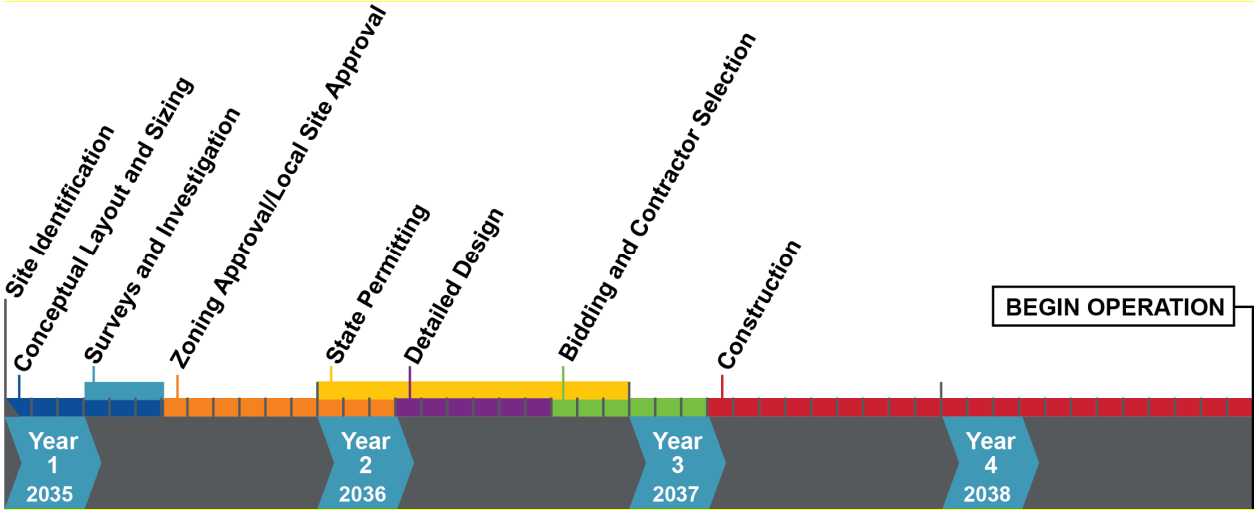
The following timeline estimates the design and build of a new transfer station to be about 4 to 5-years assuming a site has been identified and procured.

Once a site is selected, it will take approximately 6 months to develop a Basis of Design and Conceptual Layout. Zoning and permitting is the likely next step and can be largely influenced by

the specific local and state processes and procedures. The detailed design process often occurs simultaneously, or overlaps, with the permitting process. Once all permits are in place and the plans are approved, bid documents are developed and a construction contract is awarded. Construction and start-up can take 1-2 years depending on the complexity of design.

From the time the City decides to develop a transfer station to start-up may take 4 to 5-years. This process can be extended if the project runs into public opposition.

Figure 3 – Transfer Station Timeline



Privatization of Collection and Disposal of Residential Waste

The final future waste management alternative to be evaluated is the privatization of collection and disposal. Although this was discussed in more detail under Task 3, it is worth summarizing in this document. The City can ultimately choose to solicit bids from private waste companies to collect, process, haul and dispose of all residential waste and recyclables. Under this option it is assumed commercial waste collection will continue to be provided by private haulers under an open, competitive based collection system in which businesses contact haulers directly for trash and recycling collection services.

Privatization would allow the City to transfer responsibility to a private company. This would relieve the City of day-to-day operations and likely reduce staff, equipment, and vehicle needs. The City will need to manage the contract and ensure that the contractor is meeting the requirements of the agreement. Through privatization, the City will likely avoid large capital expenses (such as required for collection fleets or transfer stations) and may be able to sell their collection fleet.

Under privatization, the City will give up its waste autonomy and have no direct control over collection services. Unfortunately, while the City can contract out collection services, the ultimate responsibility for providing waste services will always remain with the City. The City will need to rely upon the strength and terms of any contract they negotiate. Often this can be frustrating and

expensive when it comes to providing special/additional services not envisioned when the contract was initially negotiated.

Finally, privatization can put the City at a competitive disadvantage for future trash collection service contracts. Upon contracting for services, it is assumed that the City will liquidate its collection fleet, retrain or lay-off the employees, and in general, get out of the trash collection business. Once out of the collection business, contract negotiations become more difficult as the City cannot negotiate from a position of strength as the cost of re-entering the collection business may become prohibitive. While the short-term goal of lower costs is sometimes realized, the long-term result can be reduced competition and higher cost.

Summary

- Continued operation of the A/A WTE Facility beyond 2038 is a real option. The major end of term equipment refurbishment and replacement budget will be largely impacted by Covanta's adherence to their comprehensive preventative and corrective maintenance program. This is of particular importance over the final 5 years of the contract.
- There will likely be end-of-term capital improvements and repairs that will be required to operate the A/A Facility past 2038.
- The City should begin to look at alternative waste management strategies 10 to 12-years in advance of the 2038 end of term date.
- There are no current transfer stations within direct haul range that the City could contract with to provide transfer services.
- In all likelihood, post-2038, there will be multiple landfill options and possibly one or two WTE options, but most will likely require use of a transfer station to consolidate waste for cost effective transport.
- HDR's opinion of probable construction cost for a 21,000 square foot transfer station is $10.5M with annual transportation and disposal cost is estimated to be $13.8M. This does not include the cost to collect waste or recyclables from residential and/or commercial properties in the City.
- HDR assumes the City will continue their curbside collection of recyclables.
- The City could bid residential collection, transfer, hauling, and disposal services and contract all solid waste services to the private sector.

Recommendations

- If the City elects to develop a new WTE replacement of the existing A/A WTE Facility, should allocate at least 10 to 12-years to site, permit, design, and construct.
- The City should closely monitor Covanta's comprehensive preventative and corrective maintenance efforts over the final 5 years of the contract, to ensure the Facility is returned to the City "…in good order and condition…" as required by the WDSA.
- If the City elects to develop a transfer station as a focal point of its future solid waste management program, it should allocate at least 4 to 5-years to site, permit, design and construct such a facility.

- In 2025, after the A/A WTE Facility rate changes to $0.00/ton (or even sooner), the City should develop an enterprise fund for solid waste management and allocate a portion, if not all, of the savings to fund an end of term capital refurbishment plan, a replacement of the A/A WTE Facility, or another future waste management strategy.
- The City should discuss the possibility of continuing their relationship with Arlington County and develop a new, regional solid waste management strategy together, as there are likely certain economies of scale to be achieved.
- The City should continue to evaluate alternate emerging technologies as they develop.
- The City should perform a comprehensive alternative disposal options study 10-12 years prior to the year 2038. This will allow the City to better understand the disposal options available at that time and potentially make a decision on the feasibility of extending the life of the A/A WTE Facility (or developing a new WTE Facility) based on the alternative options.

Bibliography

(1) Virginia Employment Commission; Virginia Community Profile - Alexandria City - http://virginialmi.com/report_center/community_profiles/5104000510.pdf

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