



**Jurisdictions of the City of Alexandria, Virginia &
County of Arlington, Virginia**

Economic Analysis of Covanta Extended Term Agreement

Abridged Report

October 2013

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Acronyms and Abbreviations

CPI	Consumer Price Index
Facility	Alexandria/Arlington Resource Recovery Facility
FMG	Facility Monitoring Group
FY	Fiscal Year
MSW	Municipal Solid Waste
NPV	Net Present Value
SWOT	Strengths, Weaknesses, Opportunities, Threats
Unabridged Report	Economic Analysis of Covanta Extended Term Agreement Report prepared by ARCADIS-US dated September 2013

Preface

This abridged report (Report) is compiled from information and data from our complete Economic Analysis of Covanta Extended Term Agreement Report dated October 2013 (Unabridged Report). Reader is referred to the Unabridged Report for additional background and details concerning the study.

1. Introduction

The Alexandria/Arlington Resource Recovery Facility (Facility) was jointly developed by the City of Alexandria (City) and Arlington County (jointly referred to as the Jurisdictions) and is operated by Covanta Arlington/Alexandria, Inc. (Covanta). In 2012 the Jurisdictions identified that entering into a new Waste Disposal and Service Agreement (Agreement) with Covanta for the processing and disposal of the Jurisdictions' waste could provide for disposal savings to the Jurisdictions ranging from \$26-\$54 million over the potential life of the contract.¹ Subsequently, the Jurisdictions entered into the new Agreement which began on January 1, 2013 and which has an initial term through June 30, 2019. At this time, the Jurisdictions are now evaluating their right to extend the Agreement via options provided for in the Agreement through 2025 and through 2038.

The Jurisdictions retained ARCADIS US, Inc. (ARCADIS) to conduct an economic evaluation of the Agreement, specifically the extension options and costs of alternatives afforded to the Jurisdictions, to support the Jurisdictions' decision-making process regarding the Agreement and their collective solid waste management programs. To facilitate the decision making process, an understanding of current market conditions, Facility operations, and the potential strengths, weaknesses, opportunities and threats (SWOT) facing the Jurisdictions was developed.

This abridged version of the Economic Analysis of Covanta Extended Term Agreement Report provides a summary of the municipal solid waste (MSW) market study conducted for the region, findings from the review of available operations monitoring reports for the Facility and a Facility site inspection, and findings from the SWOT review of the Agreement including workshop meetings with the Jurisdiction's Facility

¹ Memorandum dated January 9, 2012 presented to the Arlington County Board at the January 21, 2012 meeting.

Monitoring Group (FMG) and its consultants. Review of these findings, in coordination with the FMG, were used to develop three case scenarios for the long-term management of Jurisdiction collected waste for economic evaluation. The economic evaluation of the three scenarios identified that the extension of the Agreement (Base Case) provides a low cost option with guaranteed savings consistent with previous projections and little financial risk as illustrated in Table 1. Additional alternatives (Case A and Case B) also provide cost effective solutions/savings over market rates, however there is large range in the potential total costs (low cost certainty) as these scenarios are subject to conditions which can change and which may be outside the control of the Jurisdictions.

The following table provides a cost comparison of the case scenarios. The figures represent the total “cost” (or how much the Jurisdictions would pay) for disposal of Jurisdiction collected waste over the planning period of 2014 through 2038 for each of the alternatives, presented in today’s dollars. These total “project costs” are not to be confused with the savings² afforded to the Jurisdictions by entering into the Agreement, as all of the alternatives considered below provide savings when compared to market rates.

Table 1: Cost Comparison of Case Scenarios (2013 Dollars)

	Base Case¹	Case A²	Case B³
Forecasted Net Cost Per Ton	\$16 per ton	\$23 per ton	\$21 per ton
Forecasted Total Net Project Cost	\$22.9M	\$31.5M	\$28.7M
90% Confidence Limit of Range in Total Net Project Cost (Revenue) ⁴	\$15M - \$26M	(\$11M) - \$75M	(\$5M) - \$40M
<ol style="list-style-type: none"> 1. Base Case: Exercise Extension in 2014 2. Case A: Go to Market 2019, Operate Facility Beginning 2025 3. Case B: Go to Market 2019, Sell Facility Beginning 2025 4. Represents a 90 percent confidence limit in the potential range of total costs based on the financial analysis of key variables. A positive number represents a cost. A negative number is identified through the use of parenthesis and represents a (Revenue). 			

² Refer to Exhibit A for discussion of comparison of costs to savings identified in January 9, 2012 meeting docket memo.

The following paragraphs provide an overview of the work conducted and a summary of the findings and conclusions of the study. The Unabridged Report provides the detailed information supporting the findings and should be read in its entirety.

2. Market Study

ARCADIS conducted a market study to estimate current and projected future MSW disposal capacity supply and demand, pricing trends and potential future market rates for MSW in the market area. A primary focus of the market study was potential disposal alternatives beginning in 2019 to coincide with the early termination option in the Agreement available to the Jurisdictions.

The findings indicate that the Jurisdiction's scheduled costs under the Agreement are below or at the low end of the projected market cost range as illustrated in Table 2. In addition, while disposal capacity in the region currently exceeds demand, and demand is anticipated to decrease due to increased recycling, disposal capacity is also decreasing as landfills close and/or implement sourcing restrictions. This is anticipated to have upward pricing pressure in the long-term. The use of transfer facilities to secure disposal capacity will be necessary for many communities as remaining available disposal capacity will be located at greater travel distances from where the waste is generated. Currently, there are no permitted MSW transfer facilities located within the Jurisdictions' boundaries. The closest existing permitted transfer stations with available capacity are located in Washington DC.

Table 2: Comparison of Costs: Agreement vs. Market

Year	2013	2019 ⁽¹⁾	2025 ⁽²⁾
Agreement ⁽³⁾	\$43.16-\$48.30	\$60.46-\$66.51	\$0-\$76.16
Market Cost ⁽⁴⁾	\$49-\$73	\$58-\$88	\$70-\$105
Notes: 1. Range presented assumes Extension Option not exercised prior to 2019; Renewal Term continues. 2. Range presented assumes Extension Option exercised in 2024. 3. Cost range representative of the Jurisdictions' Base O&M Fee and Excess Waste incremental charge. Escalated per the Agreement. 4. Estimated Market costs (see Appendix B, Table 3) are escalated at an assumed annual rate of 3.0 percent. Market costs representative of selected facilities in Virginia only.			

3. SWOT Analysis

The SWOT analysis is a tool to identify the strengths, weaknesses, opportunities, and threats relative to the Jurisdictions' decision-making process and the Agreement. The SWOT analysis was conducted to facilitate the identification and development of alternatives for the disposal of Jurisdictional waste that warrant further investigation and economic evaluation under this study. The strengths and weaknesses presented in this Report generally represent factors that are governed by the Agreement and set the stage for identifying opportunities that the Jurisdictions may want to explore to build on strengths and mitigate weaknesses. The opportunities and threats presented generally relate to external factors. Understanding opportunities and threats sets the stage for managing potential barriers to implementation and establishing direction. A workshop was conducted on June 12, 2013 to review and discuss the various SWOT factors to obtain an understanding of those factors which present significant concern. The findings from this workshop identified that securing economically advantageous environmentally-friendly long-term disposal capacity for the MSW currently collected by the Jurisdictions, primarily from single-family residents, was of top priority and concern to the Jurisdictions as this was the original mission established by the Jurisdictions when they were tasked with negotiating the Agreement.

Disposal costs that are within the range or lower than market rates are desired. The delay in return of the Facility and Facility Site from 2025 to 2038 is of concern but readily balanced with the reduction in Facility operating liability to the Jurisdictions during this time period. The disposal of waste outside of the Jurisdictions' boundaries while the Jurisdictions still host an operating Facility is a significant negative, but

potentially acceptable on a short-term basis. Long-term unknowns and risks are also of concern. While the Jurisdictions are generally risk adverse, they are willing to weigh potential opportunities, to evaluate risks and to take action to minimize risks.

Concern regarding the fact that the Agreement only secures disposal capacity for MSW collected by the Jurisdictions was discussed. These concerns included but were not limited to historic and potential continued controversy regarding private sector challenges to waste flow control, private sector desire to limit Jurisdictional involvement in solid waste collection and disposal, and potential for residential waste subsidizing private sector costs. Historically, the Jurisdictions were paying as much as \$30 per ton more for disposal of waste at the Facility than the private sector, as a result of the Jurisdictional financing of the Facility and their commitment to a put-or-pay agreement to ensure sustainable operations. Ultimately, the Jurisdiction's continued limited involvement in the disposal of privately collected waste was viewed as appropriate and in accordance with clear direction provided by City Council and the County Board to the FMG to specifically focus on that portion of the waste stream currently in direct control of the Jurisdictions (i.e. the MSW collected by the Jurisdictions primarily from customers who pay the Jurisdictions' refuse fees).

4. Overview of Scenarios

The existing Agreement contains three distinct periods: 1) Initial Term, 2) Renewal Term, and 3) Extended Term. The Initial Term represents the current contract period and runs through June 30, 2019. The Renewal Term represents the renewal of the Agreement subject to the terms and conditions therein and covers the period between July 1, 2019 and September 30, 2025. The Extended Term represents the period between October 1, 2025 and December 31, 2038, should the Jurisdictions exercise an extension option pursuant to the Agreement.

Various opportunities exist during each of these time periods. As such, a baseline assessment of the Agreement, review of market conditions, review of the Facility condition, and the prioritization of the SWOT factors was conducted to identify opportunities and develop three case scenarios for the long-term management of Jurisdiction collected waste. The three case scenarios include:

- Base Case: Exercise Extension in 2014
- Case A: Go to Market in 2019, Operate Facility Beginning 2025
- Case B: Go to Market in 2019, Sell Facility Beginning 2025

The above case scenarios were also selected for economic evaluation based on a series of workshops and teleconferences with the Jurisdictions and their consultants. Financial models were developed for each case scenario and various sensitivity analyses were performed. In addition, the financial models were developed to utilize Monte Carlo Risk Analysis using @Risk™ software to assess the financial risks associated with fluctuations in key variables and assumptions.

The following provides a summary description of the three case scenarios, discusses the assumptions utilized to analyze the alternatives, and presents the findings of the economic evaluation.

Base Case - Exercise Extension in 2014 – The Jurisdictions can exercise an extension of the Agreement to 2038 at any time between now and 2025, subject to the terms and conditions of the Agreement. As per the Leases, upon expiration of the Extended Term in 2038, the Facility Improvements revert back to the Jurisdictions: “in good order and condition, reasonable wear and tear of the Improvements excepted.”

The earlier the extension is exercised the greater the savings under the Agreement, since the execution of the extension serves to lock in the Jurisdiction's then tipping fee. As such, for the purposes of this scenario, exercising the extension in 2014 was selected as it minimizes the Jurisdictions' costs under the Agreement and eliminates the risk of Covanta potentially backing-out of the Agreement between July 1 and December 31, 2018. While several other advantages and disadvantages exist, an economic evaluation of this primary scenario was conducted to serve as a basis for comparison with Case A and Case B. The potential impact of delays in exercising the extension was quantified and is discussed in the Report.

Case A - Go to Market in 2019, Operate Facility Beginning 2025 – This scenario assumes that the Jurisdictions do not exercise the extension during the Initial Term, and the parties do not agree to the Renewal Term (i.e., Covanta opts to back out of the Agreement in 2018). It is assumed that Covanta is neither interested in negotiating new terms nor will they accept Jurisdiction delivered waste at any of their facilities. Consequently, it is assumed that the Jurisdictions will need to transfer their collected MSW to an alternate disposal facility during the period of July 1, 2019 through September 30, 2025, until the Jurisdictions can take back operations of the Facility on October 1, 2025. It is assumed, that the Jurisdictions will procure a contract operator to operate the Facility on behalf of the Jurisdictions for the period of October 1, 2025 and December 31, 2038.

Upon transfer of ownership and operations back to the Jurisdictions on October 1, 2025, the Jurisdictions' collected waste will be processed at the Facility. The Jurisdictions' collected waste currently represents about 17% of the processing capacity of the Facility. The Facility will need to run close to capacity to maximize its economic benefits. As such, the financial analysis for this scenario is based on the assumption that the Jurisdictions will establish below market gate rates at the Facility to provide for economic waste flow control³ to maximize the Facility's capacity utilization. Commercial customers/non-Jurisdictional collected waste generated in the service area will pay the established gate rate.

Case B - Go to Market in 2019, Sell Facility in 2025 – This scenario is similar to Case A. However, it is assumed that the Jurisdictions choose to sell the Facility and Site in 2025 instead of operating the Facility. The sale of the Facility serves to limit the Jurisdictions future liability for the Facility and provide the Jurisdictions with a purchase price for the assets. It is anticipated that as a condition of the sale, the purchaser will be required to continue to operate the Facility through 2038, as the continued use of the Facility for processing waste is anticipated to represent the highest and best use of the Facility and Site. The Facility will continue to accept the Jurisdictions' collected waste for disposal at then current market rates. This scenario also assumes that the proceeds from the sale will be deposited into a sinking fund for the Jurisdictions' collected waste and will be used to offset disposal costs for the Jurisdictions' waste.

A summary of the relevant risks and benefits associated with the above case scenarios is presented in Table 3 below.

³ Economic waste flow control means direction of waste through provision of economic incentives vs. regulatory requirements.

Table 3: Risks, Benefits, and Costs of Alternatives

Alternative	Risks	Benefits	Cost
Base Case: Exercise Extension during Initial Term	<ul style="list-style-type: none"> • Loss of asset control • Potential loss of asset value as Facility may be at its useful life by 2038 	<ul style="list-style-type: none"> • Cost certainty • Immediate savings • Insulated from market • No impact to current System • Facility returned in working order 	<ul style="list-style-type: none"> • Agreement tipping fees are below market rates • Minimizes future cost risks
Case A: Go to Market in 2019, Operate Beginning 2025	<ul style="list-style-type: none"> • Fuel/transport cost risk 2019-2025 • Multiple contracts • Owner/operator risks <ul style="list-style-type: none"> ○ Facility compliance ○ Commodity prices ○ Regulatory/Capital ○ Additional Jurisdictional staff for oversight • Public/political risks • Limited competition for operators • Change in law costs • Availability of waste • Lack of cost certainty 	<ul style="list-style-type: none"> • Facility ownership 2025 • Opportunity to re-evaluate programs • Increased control • Capacity for non-residential Jurisdictional waste • Risk allocation 	<ul style="list-style-type: none"> • Capital requirements • Procurement of operator • Operation and maintenance cost • Organizational / administrative cost • Cost dependent on Facility revenues/market conditions which are subject to change
Case B: Go to Market in 2019, Sell Facility in 2025	<ul style="list-style-type: none"> • Fuel/transportation cost risk 2019-2025 • Multiple contracts • Buyer/competition/ purchase price • Public/political risks • Lack of cost certainty • Loss of Facility Site 	<ul style="list-style-type: none"> • May avoid delivery commitment • Asset sale cash infusion • Opportunity to re-evaluate programs • Risk transfer 	<ul style="list-style-type: none"> • Capital requirements • Procurement of purchaser • Transaction costs

5. Financial Modeling Approach

A dynamic Microsoft Excel based financial proforma was developed for each of the scenarios to address the numerous variables and alternatives. The proforma was developed to model the annual revenues and expenses of each scenario over the planning period. This information was then utilized to calculate the resulting:

- net cost per ton of Jurisdictional collected waste for each year of the planning period (presented in today's dollars);
- the total cost of each scenario in today's dollars⁴, and
- the potential range in total cost based on changing market conditions.

The planning period selected runs from fiscal year (FY) 2014 through FY 2038 to coincide with the anticipated life of the Facility (50 years) and the potential extended term of the Agreement (December 31, 2038).

As in most situations, over the short-term it is much easier to reliably project outcomes than in the long-term. Over the long-term additional variables that are outside of a communities' control increasingly come into play. To assist in evaluating the potential long-term risks due to factors outside of the Jurisdictions' control, @Risk™ software was utilized to incorporate probabilistic modeling to quantify potential financial risks. The @Risk™ software provides for the use of Monte Carlo simulation techniques to provide a range of multi-year cost estimates for each alternative and the probabilities associated with those estimates. Key variables that could most impact future performance including waste flow, energy pricing, capital investment needs, facility performance, contracted facility operation and maintenance costs, escalation factors and market rates were assigned a range of values and probabilities based on professional judgment established in developing financial models for solid waste facilities, solid waste engineering expertise and resources, data, and input available from a variety of sources including the Jurisdictions and their consultant HDR.

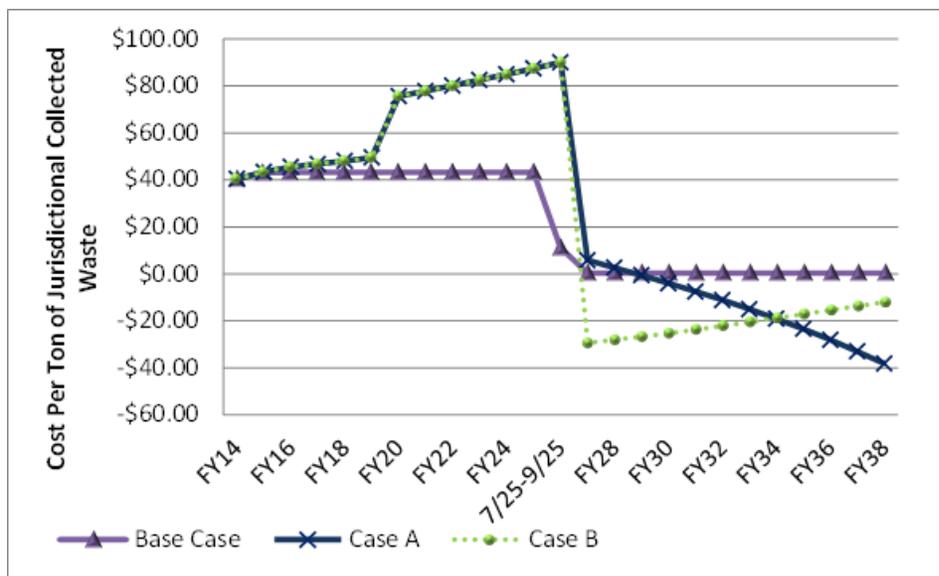
Appendix E to this Report provides a table of the financial model inputs utilized to evaluate the case scenarios and their likely ranges in value. To the extent possible

⁴ The total project cost in today's dollars, expressed in Net Present Value (NPV) terms, was calculated based on discount factor of approximately 5% (CPI plus 2%).

these inputs were consistently applied for all alternatives and scenarios to better allow for common comparisons.

Figure 1 below provides a summary of the proforma's forecasted cost per ton for each case scenario for each year over the planning period.

Figure 1: Comparison of Forecasted Annual Cost per Ton of Jurisdiction Waste



The forecasted tip fee for each of the case scenarios can be divided into three distinct time periods: a) the Initial Term of the Agreement (current to 2019); b) potential Renewal Term (2019-2025) and c) potential Extended Term (2025-2038). The tip fee for Case A and Case B are slightly higher than the Base Case for the Initial Term since they assume no contract extension and continued escalation of rates during this period. The tip fee for Case A and Case B are also substantially higher than the Base Case for the period of 2019-2025 as it is assumed that Jurisdiction collected waste will require the haul and disposal of waste at an alternate facility. The tip fee for the Jurisdiction collected waste under during the period of 2025 through 2038, however, drops significantly as the Jurisdictions leverage the ownership of the Facility.

Under Case A the Jurisdictions operate the Facility and use the revenues generated by the Facility to offset the disposal costs for the Jurisdictions collected waste which

represents only 17% of the processing capacity of the Facility. The revenues generated by the Facility include energy revenues and gate fee revenues from commercial, multi-family and outside waste customers. The continued decline in annual cost during this time period indicates that the revenues generated through Facility operations are increasing at a rate faster than the cost of operations (e.g., the difference between the gate rate and the actual cost per ton to process waste after accounting for energy revenues) is generating increasing revenues that are credited solely to the Jurisdictional collected waste to offset Jurisdictional collected waste costs). A significant risk to Case A is the availability of waste to maximize Facility capacity utilization.

In Case B, the Jurisdictions do not operate the Facility, but sell the Facility and use the proceeds to offset future Jurisdiction disposal costs. The financial forecasts assume the full amount of the proceeds is distributed in equal annual installments over the remaining planning period.

As previously illustrated in Table 1, the range in probable outputs is limited under the Base Case because most costs are fixed. The only significant variables are the quantity of waste and ash residue credits due to the Jurisdictions. For Case A and Case B the range in probable outputs is significant and increases as time passes. This is due to the number of variables present and the increased uncertainty in future years. The Base Case option presents a low cost option from a risk perspective. Because the costs are fixed under the Agreement, there is minimal pricing risk associated with this option. With respect to the Case A and Case B options, the range of potential costs is largely variable due to unknowns and factors outside of the Jurisdictions' control. Both the Case A and Case B scenarios present cost-effective options for the long-term management of the Jurisdictions' MSW, but with significantly more pricing risk both positive and negative.

The following are observations regarding potential additional factors that are not directly included in the cost analysis but which could impact the decision process:

- The potential residual value of the Facility beyond 2038 has not been factored into the analysis as this timeframe extends beyond the planning period and the typical 50 year life for similar facilities. Covanta reports that the life of the Facility could readily be extended to 60 years. Such extension, however, would likely require additional capital investment.
- The analysis of the case scenarios is based on an assessment of the financial impact solely to the Jurisdiction's refuse collection customers, consistent with direction provided by the City Council and County Board.

- The tipping fee rates for Jurisdictional collected waste presented in Case A is based on economic flow control. The implementation of regulatory flow control would serve to reduce the financial risk, hence the range of costs, associated with this scenario. Flow control, while currently a legally defensible option, is subject to much debate in the solid waste industry and is not considered without risk of challenge.
- The further into the future, the more difficult it is to accurately or reliably project future cost. As illustrated in the Exhibits, the risk of higher costs in the long term is greater under Case A and Case B than the Base Case.

6. Summary of Financial Model Findings

As previously described, a majority of the cost assumptions used in the proforma are outside the control of the Jurisdiction and consequently, actual costs can vary substantially from those presented in the proforma for Case A and Case B. This is common in any long-term planning project. In addition, each scenario presents unique pricing risks which further complicate the decision process and ability to conduct direct comparisons. This is particularly true the further costs are projected beyond a five- to ten-year period.

Our findings indicate that each of the case scenarios has the potential for providing cost-effective, below market rates for long-term disposal. The cost of the Base Case contains the least pricing risk and is more cost effective in the short term (through 2025). Case A and Case B provide potential for actual revenue generation in the long-term (post 2025) if advantageous economic conditions manifest during the planning period. These options also contain significant pricing risk should poor economic conditions manifest during the planning period.

These findings indicate that the decision regarding the best option for the Jurisdictions should be based on the Jurisdictions' tolerance and ability to manage risks over the planning period and other institutional factors.

7. Conclusions

From the economic analysis conducted in this study, the Base Case Scenario to Extend the Agreement in 2014 offers one of the lowest costs and has the least amount of financial risk. Potentially significant drawbacks of the Base Case include:

- a) postponement of the Jurisdictions' ability to control the Facility and Site from 2025 to 2038, and
- b) potential unleveraged value of the Facility during this time period (note: the value of the Facility in 2038 vs. 2025 will be significantly reduced as it will be near the end of its useful life, unless refurbished).

If the above potential drawbacks and other potential factors not directly included in the cost analysis as discussed previously continue to be of manageable concern, as identified during the conduct of the SWOT review and direction provided by the Jurisdictions during the study, the Jurisdictions' extending the Agreement in 2014 to maximize the savings available under the Agreement is considered a preferential course to follow.

If, however, concerns regarding the control of the Facility and other potential factors not directly included in the cost analysis remain, then it is recommended that the Jurisdictions consider postponing the decision to extend the Agreement but with a re-evaluation scheduled well in advance of July 1, 2018, while the Jurisdictions maintain the unilateral right to extend. In making such decision, it is important that the Jurisdictions also consider their tolerance for risk since this may be an overriding factor for exercising the extension and there is a cost/loss of savings associated with postponing the decision to extend. As discussed further in Section 6 and illustrated in Table 6-1 of the Unabridged Report, postponing the extension results in increased costs in the amount of approximately \$500,000 annually from now until July 1, 2018. This increased cost is in direct relation to the 2.75% annual increase in tipping fees per ton of waste processed which continues until the extension is exercised. This amount, however, is small in comparison to the total project cost of the Base Case scenario.

The new information that may become available during this time period that could impact the decision to extend or not extend may include but may not be limited to:

- Reduced uncertainty in the market place due to a more stable economy,
- Reduced uncertainty in the regional market through anticipated resolution of long-term agreements for neighboring jurisdictions including Fairfax County VA, Prince George's County MD, and the District of Columbia,
- Existence of any locally-permitted transfer facilities that could manage Jurisdiction collected waste during the period of 2019 to 2025,
- Information regarding newly proposed regulations which may impact capital improvement requirements and/or waste generation,

- Opportunities for ash recycling or other Facility enhancements that could serve to reduce operating costs or increase revenue,
- Ability to refine key projections regarding:
 - Local and regional MSW and recycling quantities.
 - Energy and capacity rates including green energy credits.
 - Local solid waste supply, demand and market rates.



Exhibit A

Review of January 2012 Cost
Savings Projections and Current
Findings

**Exhibit A:
Review of January 2012 Cost Savings Projections and Current Findings
Economic Analysis of Covanta Extended Term Agreement**

This Exhibit A discusses previously projected savings the Jurisdictions would realize by entering into the Waste Disposal and Service Agreement (Agreement) with Covanta, relative to not entering the Agreement and resulting in exposure to market based disposal costs.¹ The previous analysis, conducted in January 2012, indicated that the Jurisdictions would realize savings in the range of approximately \$26-\$54 million over the life of the Agreement. If the option to extend the Agreement through 2038 was exercised in 2014, the projected savings, based on assumed values for certain factors, was estimated at approximately \$42 million.²

Based in part on these potential savings, the Jurisdictions subsequently executed the Agreement with Covanta, which became effective on January 1, 2013. The Initial Term of the Agreement runs through 2019, and provides for a Renewal Term through 2025 and an Extended Term through 2038. The Jurisdictions have already secured significant savings from the Agreement as evident from the \$43.16 per ton rate currently being paid by the Jurisdictions as compared to an estimated market rate of \$55 per ton, which translates to a savings of almost \$700,000 in FY14 alone based on current waste deliveries. These savings are currently being passed on to the Jurisdictions refuse customers as evident by the reduction in Jurisdiction refuse fees for FY14.

The analysis presented in this Economic Analysis of Covanta Extended Term Agreement Report (Report) does not evaluate the savings offered under the Agreement as the Agreement has already been executed and the Jurisdictions are already benefiting from a portion of these savings. The analysis in this Report is based on the potential cost to the Jurisdictions, through 2038, of exercising the Extended

¹ Arlington County Board Agenda Item. Meeting of January 21, 2013. Arlington County, Virginia. Dated January 9, 2012

² The values assumed for certain factors used in the referenced analysis (*e.g.*, Jurisdiction tons, Discount Rate, market rate). For example, the projected savings of approximately \$42 million was based on 65,000 tons, a Discount Rate of 4.5%, and a market rate of \$55.00 per ton.

Term as compared to other alternatives or opportunities afforded the Jurisdictions under the executed Agreement. While not evaluating the question of whether or not to enter into the Agreement, the Report details the analysis of three case scenarios that represent the Jurisdictions options under the Agreement. The findings of the analysis (forecasted total project costs) of the three case scenarios are summarized below. The “costs” associated with the alternatives presented in the below table are not to be confused with the “savings” associated with the current Agreement, as all of the below scenarios offer savings as compared to market rates, thereby confirming the benefits of executing the Agreement. The question now is not of whether to enter into the Agreement, but when and if to exercise the extension options offered under the Agreement.

Scenario	Forecasted Total Project Cost
Base Case: Exercise Extension in 2014	\$22.9 million
Case A: Go to Market in 2019, Operate Facility Beginning 2025	\$31.5 million
Case B: Go to Market in 2019, Sell Facility Beginning 2025	\$28.7 million

As shown above, the Base Case scenario represents the lowest cost option to the Jurisdictions relative to other alternatives or opportunities afforded under the executed Agreement. The statistical analysis also indicates the Base Case to have the least financial risk. Each of the three case scenarios is preferable to projected market rate conditions.

Considering the Base Case alone, as this scenario parallels the framework of the previous analysis, the analysis in the Report indicates a savings of approximately \$26 million is projected by exercising the extension option in 2014, as compared to taking no action within the Agreement continuing through the Renewal Term at the Renewal Term rates and through 2038 based on a 2.75% annual escalation of the previous year’s rates.

NPV of Contract Extension Savings (5% discount)			Loss in Savings by Waiting to Extend*	
If Extend by June	Extension Savings Over Contract Term (2038)	Extension Savings Through 2025	Annual Cost for Delay in Extension	Cumulative Cost of Delay in Extension
2014	\$26,138,442	\$4,960,644	\$0	\$0
2015	\$25,618,210	\$4,440,412	\$520,232	\$520,232

NPV of Contract Extension Savings (5% discount)			Loss in Savings by Waiting to Extend*	
If Extend by June	Extension Savings Over Contract Term (2038)	Extension Savings Through 2025	Annual Cost for Delay in Extension	Cumulative Cost of Delay in Extension
2016	\$25,105,527	\$3,927,729	\$512,683	\$1,032,915
2017	\$24,642,810	\$3,465,012	\$462,717	\$1,495,633
2018	\$24,230,152	\$3,052,354	\$412,658	\$1,908,291

* Includes ash residue credit and assumes Covanta continues to dispose of ash at the Fairfax County Lorton Landfill.

As stated previously, based on the market study conducted as part of the study, each of the case scenarios are financially preferable to market rates. Accordingly, when compared to market based disposal costs, the savings potentially realized by the Jurisdictions of exercising the Extended Term in 2014 would be greater than that shown in the above table. There are several points of difference in projected savings that are important to note:

- The previous analysis assumes market rates apply after the Initial Term of the Agreement (2019). The analysis conducted in the study, as described in the Report, assumes the Agreement would continue through the Renewal Term.
- Values assigned to factors used in the analysis differ from those used in the analysis to estimate projected savings by entering into the Agreement. For example, factors such as Jurisdictional tonnage, market rates, and discount factors differ, each of which separately influence the projected results.

The two sets of analyses considered in this Exhibit are different in nature and were developed to address different questions. Given the above, the findings of the previous analysis and the analyses presented in this Report, while different, are consistent and indicate the greatest potential for savings to the Jurisdictions is exercising the Extended Term option early. The reader of this Exhibit A is referred to the full Report for a full understanding of the assumptions and analyses conducted as part of the Study.