

**Borough of Naugatuck, Connecticut
Analysis of Financial Impact of Incinerator Operation**

September 19, 2014

Cost Estimation: Continued VWNA Incinerator Operation vs. Incinerator Shutdown

The Borough's sewage treatment plant, sewage collection system and sludge incinerator are operated by Veolia Water North America (VWNA) under a long-term contract. VWNA operates the incinerator as a "merchant plant" which disposes of sewage sludge from around the state. VWNA pays revenues ("Rent") to the Borough for the right to operate the incinerator as a merchant plant.

The Connecticut DEEP is requiring the Borough (as owner of the incinerator) to install new air pollution control equipment on the sludge incinerator in order to reduce mercury emissions from incinerator operations. The estimated cost for the required new equipment is \$12,430,000

This model analyses two scenarios:

1. The financial impact to the Borough assuming that the Borough invests in the new required air pollution control equipment and continues incinerator operations.
2. The financial impact to the Borough assuming that the Borough decides to permanently shut down the incinerator and ship its sewage sludge to an out-of-town facility for disposal.

The table below summarizes the analyses. Tables on the following pages present background information and calculations.

| <u>Fiscal Year</u> | Cost if the Borough Invests in New Air Pollution Equipment and Continues Incinerator Operations | Cost if the Borough Shuts Down the Incinerator and Ships Sludge Out of Town for Disposal | <u>Difference</u> |
|--------------------|---|---|---------------------|
| 2015 | \$3,349,508 | \$7,723,795 | \$4,374,287 |
| 2016 | \$3,364,292 | \$6,604,328 | \$3,240,036 |
| 2017 | \$3,385,058 | \$6,692,633 | \$3,307,575 |
| 2018 | \$3,387,114 | \$6,753,167 | \$3,366,053 |
| 2019 | \$3,404,661 | \$6,841,701 | \$3,437,039 |
| 2020 | \$3,422,820 | \$6,932,527 | \$3,509,706 |
| 2021 | \$3,635,717 | \$7,025,459 | \$3,389,742 |
| 2022 | <u>\$4,565,675</u> | <u>\$7,125,274</u> | \$2,559,599 |
| Totals | \$28,514,847 | \$55,698,883 | \$27,184,036 |

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Summary: Impact on Borough of Continued VWNA Incinerator Operation vs. Incinerator Shutdown

September 19, 2014

| | <u>Cost to Borough with Continued Operation</u> | <u>Cost to Borough with Incinerator Shutdown</u> |
|---|---|--|
| Collection System O&M Costs | Yes | Yes |
| <i>Sewage Plant O&M Costs ⁽¹⁾</i> | <i>Yes</i> | <i>Yes</i> |
| Sewage Plant Fee Element B Costs | Yes | Yes |
| Sewage Plant Reimbursable Costs | Yes | Yes |
| Contract Monitoring | Yes | Yes |
| Sludge Disposal Costs | No | Yes |
| | | |
| <i>Sewage Plant/Incinerator Debt ⁽²⁾</i> | <i>Yes</i> | <i>Yes</i> |
| Incinerator Equipment Debt Service | Yes | No |
| VWNA Termination Fee | No | Yes |
| | | |
| VWNA Incinerator Rent Revenue | Yes | No |

(1) While the Borough is responsible for paying plant O&M costs through the VWNA annual service fee, the Borough's costs are off-set 100% by the incinerator Rent paid by VWNA. "Element 1" of the annual Rent paid by VWNA is equal to the annual VWNA sewage plant service fee. This off-set would not be available if the incinerator was shut down and VWNA ceased paying Rent.

(2) While the Borough is responsible for paying all debt service costs, "Element 2" of the annual Rent paid by VWNA partially off-sets the Borough's actual debt service costs. Approximately 47% of the Borough's total debt service costs are off-set by the "Element 2" payment by VWNA. This off-set would not be available if the incinerator was shut down and VWNA ceased paying Rent.

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Background Calculations

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Table 1. Current Situation - - Continued Incinerator Operation

| System Revenues VWNA to Borough | | | | System Costs | | | | | | Net Cost to Borough | |
|------------------------------------|------------------------|------------------------|--------------------------------|---|--------------------|--|--|--|----------------------------|---------------------------|-----------------------------|
| Fiscal Year | Base Rent Element 1 | Base Rent Element 2 | Total Revenue To Borough | Sewage Plant & Collection System Service Fees | Sludge Disposal | Existing Sewage Plant & Collection System Debt Service | Existing Incinerator Debt Service | New Debt Service for Incinerator Improvements | VWNA Termination Fee | | Total Cost to Borough |
| 2015 | \$3,148,734 | \$1,112,166 | \$4,260,900 | \$3,982,039 | \$0 | \$275,656 | \$2,069,000 | \$1,283,713 | \$0 | \$7,610,408 | \$3,349,508 |
| 2016 | \$3,211,708 | \$1,110,998 | \$4,322,706 | \$4,061,680 | \$0 | \$272,856 | \$2,068,750 | \$1,283,713 | \$0 | \$7,686,999 | \$3,364,292 |
| 2017 | \$3,275,943 | \$1,110,282 | \$4,386,225 | \$4,142,914 | \$0 | \$274,656 | \$2,070,000 | \$1,283,713 | \$0 | \$7,771,282 | \$3,385,058 |
| 2018 | \$3,341,461 | \$1,099,140 | \$4,440,601 | \$4,225,772 | \$0 | \$275,731 | \$2,042,500 | \$1,283,713 | \$0 | \$7,827,716 | \$3,387,114 |
| 2019 | \$3,408,291 | \$1,099,114 | \$4,507,405 | \$4,310,288 | \$0 | \$275,566 | \$2,042,500 | \$1,283,713 | \$0 | \$7,912,066 | \$3,404,661 |
| 2020 | \$3,476,456 | \$1,099,348 | \$4,575,804 | \$4,396,493 | \$0 | \$274,919 | \$2,043,500 | \$1,283,713 | \$0 | \$7,998,625 | \$3,422,820 |
| 2021 | \$3,545,986 | \$905,502 | \$4,451,488 | \$4,484,423 | \$0 | \$273,819 | \$2,045,250 | \$1,283,713 | \$0 | \$8,087,205 | \$3,635,717 |
| 2022 | \$3,616,905 | \$0 | \$3,616,905 | \$4,574,112 | \$0 | \$277,256 | \$2,047,500 | \$1,283,713 | \$0 | \$8,182,580 | \$4,565,675 |
| | \$27,025,484 | \$7,536,550 | \$34,562,034 | \$34,177,721 | \$0 | \$2,200,459 | \$16,429,000 | \$10,269,701 | \$0 | \$63,076,881 | \$28,514,847 |

The revenues in this table exclude the potential Percentage Rent (i.e., disposal service revenue sharing) payments that the Borough may receive, in addition to the revenues listed above.

Table 2. Alternate Scenario - - Incinerator Permanently Shutdown

| System Revenues VWNA to Borough | | | | System Costs | | | | | | Net Cost to Borough | |
|------------------------------------|------------------------|------------------------|--------------------------------|---|--------------------|--|--|--|----------------------------|---------------------------|-----------------------------|
| Fiscal Year | Base Rent Element 1 | Base Rent Element 2 | Total Revenue To Borough | Sewage Plant & Collection System Service Fees | Sludge Disposal | Existing Sewage Plant & Collection System Debt Service | Existing Incinerator Debt Service | New Debt Service for Incinerator Improvements | VWNA Termination Fee | | Total Cost to Borough |
| 2015 | \$0 | \$0 | \$0 | \$3,982,039 | \$197,100 | \$275,656 | \$2,069,000 | \$0 | \$1,200,000 | \$7,723,795 | \$7,723,795 |
| 2016 | \$0 | \$0 | \$0 | \$4,061,680 | \$201,042 | \$272,856 | \$2,068,750 | \$0 | \$0 | \$6,604,328 | \$6,604,328 |
| 2017 | \$0 | \$0 | \$0 | \$4,142,914 | \$205,063 | \$274,656 | \$2,070,000 | \$0 | \$0 | \$6,692,633 | \$6,692,633 |
| 2018 | \$0 | \$0 | \$0 | \$4,225,772 | \$209,164 | \$275,731 | \$2,042,500 | \$0 | \$0 | \$6,753,167 | \$6,753,167 |
| 2019 | \$0 | \$0 | \$0 | \$4,310,288 | \$213,347 | \$275,566 | \$2,042,500 | \$0 | \$0 | \$6,841,701 | \$6,841,701 |
| 2020 | \$0 | \$0 | \$0 | \$4,396,493 | \$217,614 | \$274,919 | \$2,043,500 | \$0 | \$0 | \$6,932,527 | \$6,932,527 |
| 2021 | \$0 | \$0 | \$0 | \$4,484,423 | \$221,967 | \$273,819 | \$2,045,250 | \$0 | \$0 | \$7,025,459 | \$7,025,459 |
| 2022 | \$0 | \$0 | \$0 | \$4,574,112 | \$226,406 | \$277,256 | \$2,047,500 | \$0 | \$0 | \$7,125,274 | \$7,125,274 |
| | \$0 | \$0 | \$0 | \$34,177,721 | \$1,691,703 | \$2,200,459 | \$16,429,000 | \$0 | \$1,200,000 | \$55,698,883 | \$55,698,883 |

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Inputs to Tables

Sludge Disposal Cost

| | |
|----------------------|---|
| Daily Volume (Tons) | 2 daily amount of sludge produced by Naugatuck's sewage treatment plant |
| Annual Volume (Tons) | 730 annual amount of sludge produced by Naugatuck's sewage treatment plant |
| Cost/Ton | \$270 if the incinerator is shut down, Naugatuck will need to dispose of its sludge at an out-of-town facility; this projected cost/ton for that disposal |
| Total Annual Cost | \$197,100 cost for Naugatuck to dipose of its sludge at an out-of-town facility |

Consumer Price Index 2.00% assumed annual inflation on operating costs and out-of-town sludge disposal costs

Sewage Plant and Collection System Operating Costs

FY 2015 VWNA service contract fees for plant and collection system operation:

| | |
|-------------------------------|-----------------|
| VWNA Sewage Plant Service Fee | \$3,148,734 |
| Sewage Plant Fee Element B | \$330,000 |
| VWNA Collection System Fee | \$307,118 |
| Reimbursable Costs | \$110,530 |
| Contract Monitoring Fee | <u>\$85,658</u> |
| | \$3,982,039 |

Air Pollution Capital Improvements

Under new Connecticut DEEP regulations, the Borough must install new air pollution control equipment to reduce mercury emissions from the incinerator.

| | |
|---------------------|---|
| Capital Cost | \$12,430,000 projected cost of Connecticut DEEP-required new equipment |
| Debt Interest Rate | 4.50% project interest on Naugatuck bonds issued to finance the new equipment |
| Debt Term | 13 term over which new bonds are amortized |
| Annual Debt Service | \$1,283,713 projected annual cost to Borough |