

AGENDA ITEM #10
March 9, 2010

Worksession

MEMORANDUM

March 5, 2010

TO: County Council

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Worksession: FY11-16 Capital Improvements Program (CIP): Solid Waste Management**

NOTE: The County Executive did not recommend any projects in the FY11-16 CIP for Solid Waste Management. This memorandum includes updates on work that is concluding in FY10 and items expected to come back to the Council in the near future.

Summary of Current Projects

The County Executive is recommending **no new projects** for the FY11-16 CIP at this time (Excerpt from FY11-16 CIP attached on ©9-12). Two projects are concluding during FY10 including:

- **Air Pollution Control System Upgrade.** This project involved installation of a Low Nitrogen Oxide (NOx) system at the Resource Recovery Facility to reduce NOx emissions by an estimated 50 percent as well as replacement of the ammonia anhydrous tank and system with a new tank and system holding a non-hazardous liquid aqueous solution. This work is complete (project cost of \$8.6 million).
- **Landfill Gas to Energy Facilities:** This project included the installation of electricity generating equipment at both the Gude and Oaks landfills at an estimated cost of \$7.5 million. Estimated electricity generated from both sites will be approximately 2.9 MW/h (equivalent to the energy needs of 2,900 homes).¹ At the time of the approval of this project, the payback period from this energy generation was conservatively estimated to be 10 to 15 years, although it could be much sooner depending on actual energy prices.

¹ Energy generated from landfill gas-to-energy facilities is considered "Tier I" clean energy (equivalent to solar or wind power) with regard to the Maryland Renewable Portfolio Standard.

A third project, Transfer Station Improvements, is partially complete. This project includes two distinct pieces of work.

- The first piece, which was completed a couple of years ago, included the expansion of the transfer building, upgrades and additions to the truck weighing facilities, the addition of one more bay at the Public Unloading Facility and associated connecting roads and paving. This work was done to help improve the safety of the unloading operations by separating large collection vehicles from smaller vehicles and to increase the efficiency of operations and reduce the frequent queuing of vehicles onto Shady Grove Road.
- The second piece involved re-locating the Yard Trim/Wood Waste Processing Facility from the Transfer Station to the Closed Gude Landfill. This relocation was intended to improve safety and efficiency at the Transfer Station by reducing overall vehicle traffic and allowing the Division to provide a safer, efficient, and more flexible yard trim/wood waste facility. Residential drop-off would still occur at the Transfer Station (to maintain a one-stop capability for residents with multiple items such as trash, recyclables, and yard trim), but commercial drop-off of yard trim (most of the yard trim volume) would move.

This second piece of the project was suspended pending additional Gude landfill remediation planning work by DEP and coordination with the Maryland Department of the Environment. Last year, the Council approved an amendment to this project (PDF attached on ©8) that zeroed out the appropriation for the yard trim project pending additional remediation planning.

At the Committee worksession, DEP Staff provided an update on the above projects (see slides on ©1-7).

Attachments

KML:f:\levchenko\solid waste\cip\council solid waste cip 3 9 10.doc

Gude Landfill Remediation

- Remediation Status: Approvals and Submittals to MDE
- Summary of Remediation
- Community coordination
- Next steps

Gude Landfill 2009 Remediation Status

- **Maryland Dept. of the Environment Approvals**
 - Landfill Gas Monitoring Plan (4/22/09)
 - Groundwater and Surface Water Monitoring Plan (5/11/09)
 - Remediation Approach (5/27/09)
- **Recent Remediation Submittals to MDE**
 - **Waste Delineation Study** (delivery to MDE on 1/29/10)
 - **Landfill Gas Monitoring Report** (delivery to MDE on 1/29/10)
 - **Proposed New Groundwater Well Locations** (delivery to MDE on 2/1/10)
 - **Leachate Seep Mitigation** (delivery to MDE on 2/2/10)

Gude Landfill Remediation Summary

- **EA Engineering evaluating historical information, site conditions and data needs**

- **Elements of the Remediation**
 - Northeast Maryland Waste Disposal Authority: IGA
 - EA Engineering, Science and Technology: Consultant via IGA
 - Phase 0: Aerial/Field Survey and Waste Delineation, completed
 - Phase 1: Nature and Extent Study to assess contamination and human exposure pathways, in progress

Coordination with the Community

- Gude Landfill Concerned Citizens (GLCC) Meetings are Held on a Regular Basis
- To date, meetings have been held 3/10, 6/11, 7/16, 8/13, 9/10, 11/12, 12/10/09 and 1/14/10
- 9/24/09 large community meeting held at Candlewood Elementary School with joint presentations by GLCC and DEP to present ongoing issues
- Meetings are generally held the second Thursday of each month at the Transfer Station and are open to the public as well as GLCC members

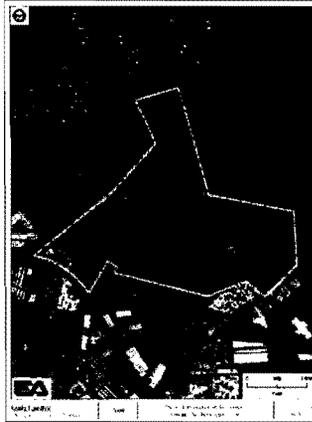
Gude Landfill Remediation Next Steps

- **Waste is located beyond County Property**
 - Meet with M-NCPPC to discuss agreement for long term property access and maintenance
 - February/March 2010
- **Installation of Landfill Gas Monitoring Wells**
 - Install 24 new Landfill Gas Monitoring Wells along landfill property boundary in two phases (12, 12)
 - First Phase of Installation March 2010

Gude Landfill 1979



Gude Landfill 2008



Gude Landfill Remediation Next Steps

- **Installation of Groundwater Monitoring Wells**
 - Obtain MDE Approval and County Permits
 - Install 18 new Groundwater Monitoring Wells on County, M-NCPPC and possibly WSSC property and in Derwood Community
 - Installation to begin March 2010

- **Repair Areas of Landfill Experiencing Leachate Seeps**
 - Construct infiltration trenches to direct surface seeps back into landfill
 - Construct additional drainage swales to manage stormwater ponding
 - March/April 2010

Landfill Gas-to-Energy: Gude LF

■ **Major Accomplishments**

- LFGE Engine (0.8 MW Jenbacher) Performance and Emissions Tests
 - Performance Test – 6/29/09 (Jenbacher).
 - Emissions Test – 6/30/09 (Jenbacher).
- Emissions levels for Volatile Organic Compounds (VOCs) are several orders of magnitude below the permit limit (<0.0028 vs. 1.0 grams/BHP-hr).
- Emissions levels for Nitrogen Oxides (NOx) were 20 percent of the permit limit of 3.0 grams/BHP-hr.
- Emission levels for Carbon Monoxide (CO) were 55 percent of the permit limit of 5.0 grams/BHP-hr.
- Started generating power to the grid for revenue (first week of July 2009)
- Substantial Completion Acceptance (July 13, 2009)

Landfill Gas-to-Energy: Gude LF

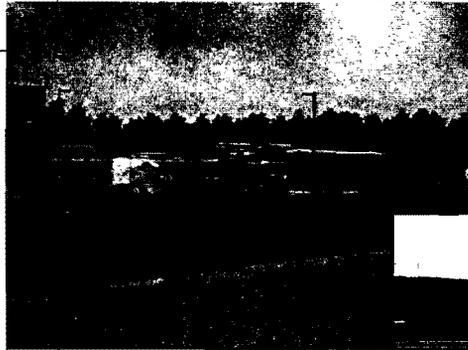


Landfill Gas-to-Energy: Oaks LF

■ **Major Accomplishments**

- LFGE Engine Performance and Emissions Tests (CAT 1.6 MW engine and Jenbacher 0.8 MW engine)
 - Performance Test – 7/16/09 (CAT), 6/30/09 (Jenbacher)
 - Emissions Test – 6/23/09 (CAT), 7/1/09 (Jenbacher).
- Emissions levels for VOCs were several orders of magnitude below the permit limit (<0.0029 vs. 1.0 grams/BHP-hr for the Jenbacher and <0.0025 vs. 1.0 grams /BHP-hr for the CAT).
- Emission levels for NOx were 16 and 20 percent of the permit limit of 3.0 grams/BHP-hr for the CAT and Jenbacher, respectively.
- Emission levels for CO were 37 and 62 percent of the permit limit of 5.0 grams/BHP-hr for the CAT and Jenbacher respectively.
- Started generating power to grid for revenue (first week of July 2009)
- Substantial Completion Acceptance (7/16/09)

Landfill Gas-to-Energy: Oaks LF



Beauty Spots Update

- Damascus Beauty Spot Closed October 1, 2009
- Operational Hours were Changed at Poolesville January 1, 2010 to 7:00 a.m. – 1:00 p.m. Saturday and Sunday to allow afternoon hauling
- This has accomplished the principal objective of minimizing the amount of time trash is on the ground

Air Pollution Control System Upgrade

- LNTTM System to reduce NO_x Emissions
 - Completed March 2009

Permitted	Actual Cal. Year 2008	Actual Since Installation
(ppm 24-hr avg.)	(ppm 24-hr avg.)	(ppm 24-hr avg.)
180	170	83

- Conversion from Anhydrous Ammonia (hazardous material) to Aqueous Ammonia (non-hazardous)
 - Aqueous system operational 10/27/09
 - Anhydrous tank removed 12/29/09
 - Source of concern to residents eliminated

FY09-14 Amended

Transfer Station Improvements -- No. 500550

Category
Subcategory
Administering Agency
Planning Area

Solid Waste-Sanitation
Solid Waste Management
General Services
Rockville

Date Last Modified
Required Adequate Public Facility
Relocation Impact
Status

May 11, 2009

No
None.
Planning Stage

EXPENDITURE SCHEDULE (\$000)

Cost Element	Total	Thru FY08	Rem. FY08	Total 6 Years	FY09	FY10	FY11	FY12	FY13	FY14	Beyond 6 Years
Planning, Design, and Supervision	2,374	614	580	1,180	904	276	0	0	0	0	0
Land	1	1	0	0	0	0	0	0	0	0	0
Site Improvements and Utilities	10,397	0	565	9,832	0	9,832	0	0	0	0	0
Construction	7,141	6,538	119	484	0	484	0	0	0	0	0
Other	41	0	0	41	0	41	0	0	0	0	0
Total	19,954	7,153	1,264	11,537	904	10,633	0	0	0	0	0

FUNDING SCHEDULE (\$000)

Solid Waste Disposal Fund	19,954	7,153	1,264	11,537	904	10,633	0	0	0	0	0
Total	19,954	7,153	1,264	11,537	904	10,633	0	0	0	0	0

OPERATING BUDGET IMPACT (\$000)

Maintenance	149	0	9	35	35	35	35
Energy	68	0	4	16	16	16	16
Program-Staff	569	0	33	134	134	134	134
Program-Other	1,713	0	101	403	403	403	403
Net Impact	2,499	0	147	588	588	588	588
WorkYears	0.0	0.3	2.2	2.2	2.2	2.2	2.2

DESCRIPTION

This project consists of the assessment of the effectiveness of current operations at the Transfer Station Complex, and the planning, design and implementation of improvements to the facility. The County needs to plan and prepare the necessary infrastructure to maintain fundamental waste management services. This requires: modifications to the current transfer station facility to improve safety by separating large collection vehicles from smaller vehicles being driven and unloaded by residents and businesses; increases in the efficiency of operations through additional truck scales for weighing in and weighing out vehicles and additional unloading areas; and reductions in the frequent queuing of vehicles onto Shady Grove Road. This project also provides for the design and construction of a yard trim/wood waste processing facility to be relocated from the Transfer Station complex to the Gude Drive Landfill.

JUSTIFICATION

The growth in County population, the increases in the percentage of County-generated waste that stays in the County and is disposed of at County facilities, the increases in the number and size of businesses, and the corresponding increases in the number of collection vehicles serving these businesses dropping off refuse and recyclables all contribute to significant impacts on the efficient and effective operation of County waste facilities. Over the past several years, the County added programs to the Transfer Station site to improve customer service, recycling opportunities, and address State and County requirements, i.e., yard waste was banned from disposal facilities. When the Transfer Station opened over 20 years ago, it just handled waste for disposal. Presently, in addition to handling waste for disposal, the Transfer Station provides an extensive drop-off area for recycling and a yard waste drop-off and processing area. This has resulted in increased demands on the Transfer Station site resulting in a need to upgrade the facility to safely and efficiently handle the increased volume in traffic and waste. The Management of Yard Trim/Wood Waste is the second largest activity at the Transfer Station, after the management of burnable solid wastes. The Transfer Station receives approximately 40,000 to 80,000 tons per year of yard trim/wood waste to be managed as a separate recyclable commodity. The new facility at the Gude Landfill includes an 8,000 square foot maintenance building, two seventy foot scales with a scale house, office space, loading scale and tarping station, parking, waste drop off, and processing areas.

FISCAL NOTE

The FY10 appropriation for this project is zero pending additional Gude Landfill remediation planning being done by DEP as required by the Maryland Department of the Environment. Appropriation authority within this project may be pursued in the future depending on the results of this planning work.

OTHER DISCLOSURES

- A pedestrian impact analysis has been completed for this project.

APPROPRIATION AND EXPENDITURE DATA	COORDINATION	MAP																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Date First Appropriation</td> <td style="text-align: center;">FY05</td> <td style="text-align: right;">(\$000)</td> </tr> <tr> <td>First Cost Estimate</td> <td style="text-align: center;">FY09</td> <td style="text-align: right;">19,954</td> </tr> <tr> <td>Current Scope</td> <td></td> <td style="text-align: right;">19,954</td> </tr> <tr> <td>Last FY's Cost Estimate</td> <td></td> <td style="text-align: right;">19,954</td> </tr> <tr> <td>Appropriation Request</td> <td style="text-align: center;">FY10</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Supplemental Appropriation Request</td> <td></td> <td style="text-align: right;">0</td> </tr> <tr> <td>Transfer</td> <td></td> <td style="text-align: right;">0</td> </tr> <tr> <td>Cumulative Appropriation</td> <td></td> <td style="text-align: right;">9,321</td> </tr> <tr> <td>Expenditures / Encumbrances</td> <td></td> <td style="text-align: right;">7,172</td> </tr> <tr> <td>Unencumbered Balance</td> <td></td> <td style="text-align: right;">2,149</td> </tr> <tr> <td>Partial Closeout Thru</td> <td style="text-align: center;">FY07</td> <td style="text-align: right;">0</td> </tr> <tr> <td>New Partial Closeout</td> <td style="text-align: center;">FY08</td> <td style="text-align: right;">0</td> </tr> <tr> <td>Total Partial Closeout</td> <td></td> <td style="text-align: right;">0</td> </tr> </table>	Date First Appropriation	FY05	(\$000)	First Cost Estimate	FY09	19,954	Current Scope		19,954	Last FY's Cost Estimate		19,954	Appropriation Request	FY10	0	Supplemental Appropriation Request		0	Transfer		0	Cumulative Appropriation		9,321	Expenditures / Encumbrances		7,172	Unencumbered Balance		2,149	Partial Closeout Thru	FY07	0	New Partial Closeout	FY08	0	Total Partial Closeout		0	<p>Department of General Services Department of Environmental Protection M-NCPPC Department of Permitting Services PEPCO WSSC</p>	<p>See Map on Next Page</p>
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Solid Waste Management

PROGRAM DESCRIPTION AND OBJECTIVES

The principal objectives of Montgomery County's Solid Waste Management program are to: ensure that the solid waste generated in the County is managed in a safe, environmentally sound manner; encourage the reduction of waste generated by residents and businesses in the County; recycle as much as feasible of the resources contained in, and extractable from, solid waste; and minimize the use of landfilling. The major elements in the management of solid waste are to:

- Recycle 50 percent of the solid waste stream;
- Continue implementation of the ban on all recyclable materials at all waste disposal facilities and encourage greater on-site management of yard trim by homeowners;
- Operate the mass-burn, Resource Recovery Facility (RRF) located in Dickerson;
- Provide rail transport of solid waste from the Solid Waste Transfer Station to the RRF;
- Transport RRF ash, non-processible waste, and by-pass waste for disposal to a private out-of-County landfill until at least 2012; and
- Preserve the New Landfill - Site 2 in Dickerson for use in the event that economic conditions or changes in law render out-of-County waste disposal infeasible.

PROGRAM CONTACTS

Contact Anthony Skinner of the Department of Public Works and Transportation at 240.777.6438 or Brady Goldsmith of the Office of Management and Budget at 240.777.2793 for more information regarding this department's capital budget.

CAPITAL PROGRAM REVIEW

There are no ongoing projects in the County Executive's recommended Solid Waste Management Capital Program for FY11-16. The recommended six-year expenditure total represents a decrease of \$22.4 million, or 100 percent, from the FY09-14 Amended program of \$22.4 million. This decrease is due to completion of several projects including Transfer Station Improvements, Landfill Gas-to-Energy Facilities, and Air Pollution Control System Upgrade, as well as deferral of the relocation of the Yard Trim/Wood Waste Facility from the Transfer Station complex to the Gude Drive Landfill.

Expenditure Detail by Category, Sub-Category, and Project (\$000s)

Solid Waste-Sanitation

Project	Total	Thru FY09	Est. FY10	6 Year Total	FY11	FY12	FY13	FY14	FY15	FY16	Beyond 6-yrs.	Approp.
Solid Waste Management												
*500931 Air Pollution Control System Upgrade	8,564	6,085	2,479	0	0	0	0	0	0	0	0	0
*508712 Gude Landfill Closure	2,814	2,772	42	0	0	0	0	0	0	0	0	0
*500809 Landfill Gas-To-Energy Facilities	7,500	6,168	1,332	0	0	0	0	0	0	0	0	0
*509101 New Landfill - Site 2	10,156	10,155	1	0	0	0	0	0	0	0	0	0
*500550 Transfer Station Improvements	8,417	7,180	1,237	0	0	0	0	0	0	0	0	0
Sub-Category Total	37,451	32,360	5,091	0	0	0	0	0	0	0	0	0
Category Total	37,451	32,360	5,091	0	0	0	0	0	0	0	0	0

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* Pending Close Out or Close Out

CIP230 - Recommended



Funding Summary by Category, Sub-Category and Revenue Source (\$000s)

Solid Waste-Sanitation

Funding Source	Total	Thru FY09	Est. FY10	6 Year Total	FY11	FY12	FY13	FY14	FY15	FY16	Beyond 6 Years
<i>Solid Waste Management</i>											
Intergovernmental	889	889	0	0	0	0	0	0	0	0	0
Revenue Bonds	5,615	5,615	0	0	0	0	0	0	0	0	0
Solid Waste Disposal Fund	30,947	25,856	5,091	0	0	0	0	0	0	0	0
Sub-Category Total	37,451	32,360	5,091	0	0	0	0	0	0	0	0
Category Total	37,451	32,360	5,091	0	0	0	0	0	0	0	0
CIP Total	37,451	32,360	5,091	0	0	0	0	0	0	0	0

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