

Gude Landfill Remediation Update

Community Meeting

Date: April 18, 2016



Outline

- Introductions
- Landfill Background
- Community Engagement
- Remediation Studies and Assessment
- Proposed Corrective Measure
- Land Reuse Process
- Next Steps
- County Contacts and Additional Information
- Questions and Discussions



Introductions

- Gude Landfill Concerned Citizens (GLCC)
 - HOA Presidents and Other Interested Residents
- Montgomery County DEP
 - Dan Locke, Chief, DEP, Division of Solid Waste Services
 - Peter Karasik, DSWS Section Chief
 - Rao Malladi, DSWS Senior Engineer



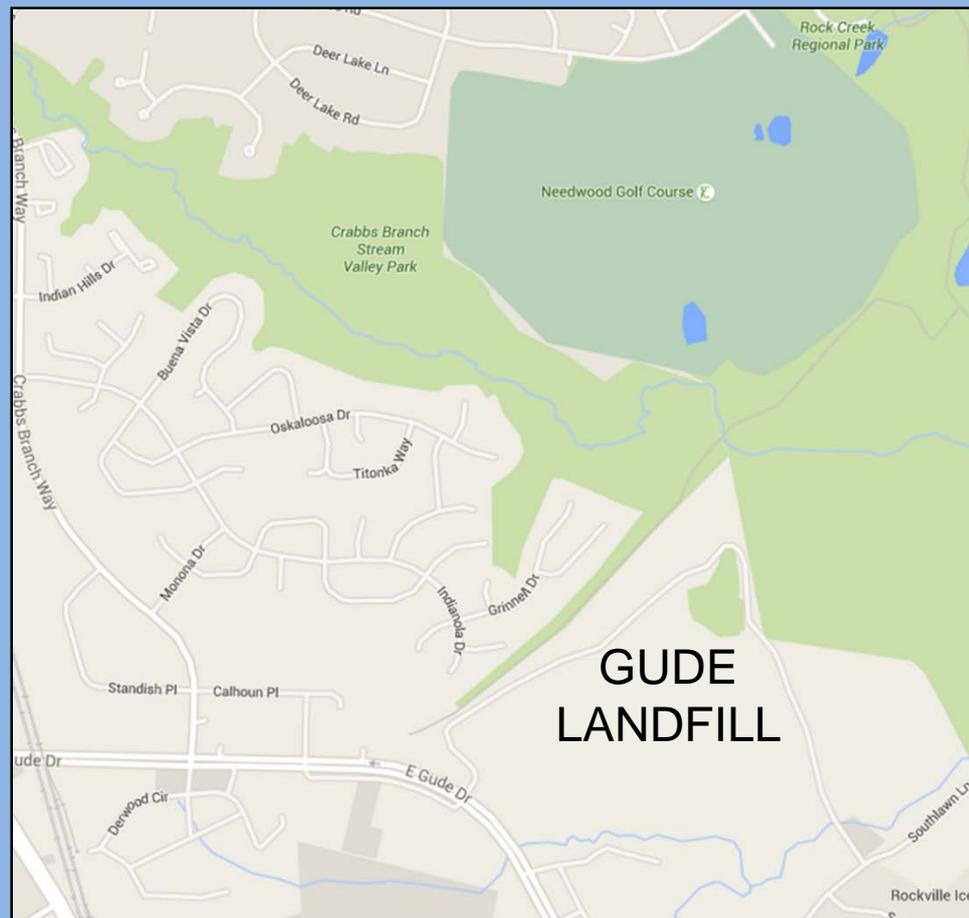
Introductions

- DEP engaged EA Engineering, Science, and Technology, Inc., PBC (EA) as a technical resource
- EA – founded 1973 in Maryland
- Experienced in assessing groundwater contamination, performing risk evaluations, and evaluating remediation alternatives at landfills
 - Mark Gutberlet, P.E. – Project Manager



Landfill Background

- Landfill Operated: 1964 to 1982
- DEP performs Post-Closure Care Maintenance Activities:
 - DEP monitors water quality via 39 groundwater monitoring wells and 5 stream locations
 - DEP manages landfill gas via 100+ gas extraction wells, 2 stack flares and a gas-to-energy facility
 - DEP monitors landfill gas via 17 gas monitoring wells
 - Along with other site inspections



Landfill Background

- Groundwater and surface water quality analysis performed since 1984
- The groundwater in the vicinity of the Landfill is not used as a potable water supply
- Potable water for Derwood Station is supplied by the Washington Suburban Sanitary Commission (WSSC)



Landfill Background

- Maryland Department of the Environment (MDE) reviewed historical groundwater data in 2008 and directed DEP to initiate comprehensive site investigations to characterize groundwater contamination
- The County and MDE entered into a consent order in May 2013 to formalize requirements for the landfill assessment and remediation



Community Engagement

- GLCC/DEP Monthly Meetings – 38 meetings (since June 2009)
- DEP Remediation Webpage (June 2009)
- Community Meeting (September 2009 & September 2012)
- DEP Letters and Fact Sheets
- Derwood Station HOA Newsletters (2009-2016)
- Revised Sections of the ACM Report and this Presentation will be Posted on the Webpage



Landfill Studies

- Waste Delineation Study – Complete (2009-2010)
 - Define the horizontal extent of waste at the Landfill
- Nature and Extent Study – Complete (2010-2012)
 - Characterize and define the horizontal and vertical extent of groundwater contamination at and beyond the Landfill property boundary
- Assessment of Corrective Measures – Ongoing (Aug. 2012–ongoing)
 - Assess the most feasible and effective technologies and/or processes to mitigate environmental contamination at and beyond the Landfill property boundary



Nature and Extent Study

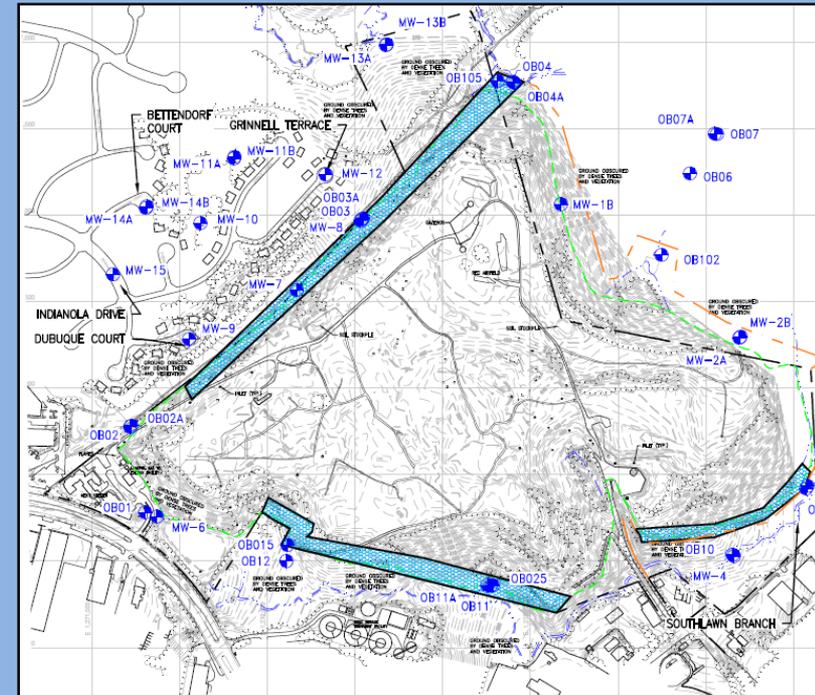
- Volatile Organic Compounds (i.e. constituents) were detected in the groundwater monitoring wells in the vicinity of the Gude Landfill
- Constituent concentrations are compared to U.S. EPA's Drinking Water standards (Maximum Contaminant Levels, or MCLs)
- A limited number of constituent concentrations exceed MCLs
- MDE requires comparison to MCLs even though the groundwater is not used as a source of drinking water
- Detected constituents do not pose human health or ecological concerns for activities including walking, hiking, wading in streams, etc. in the vicinity of the Landfill. This includes adults, children and pets.



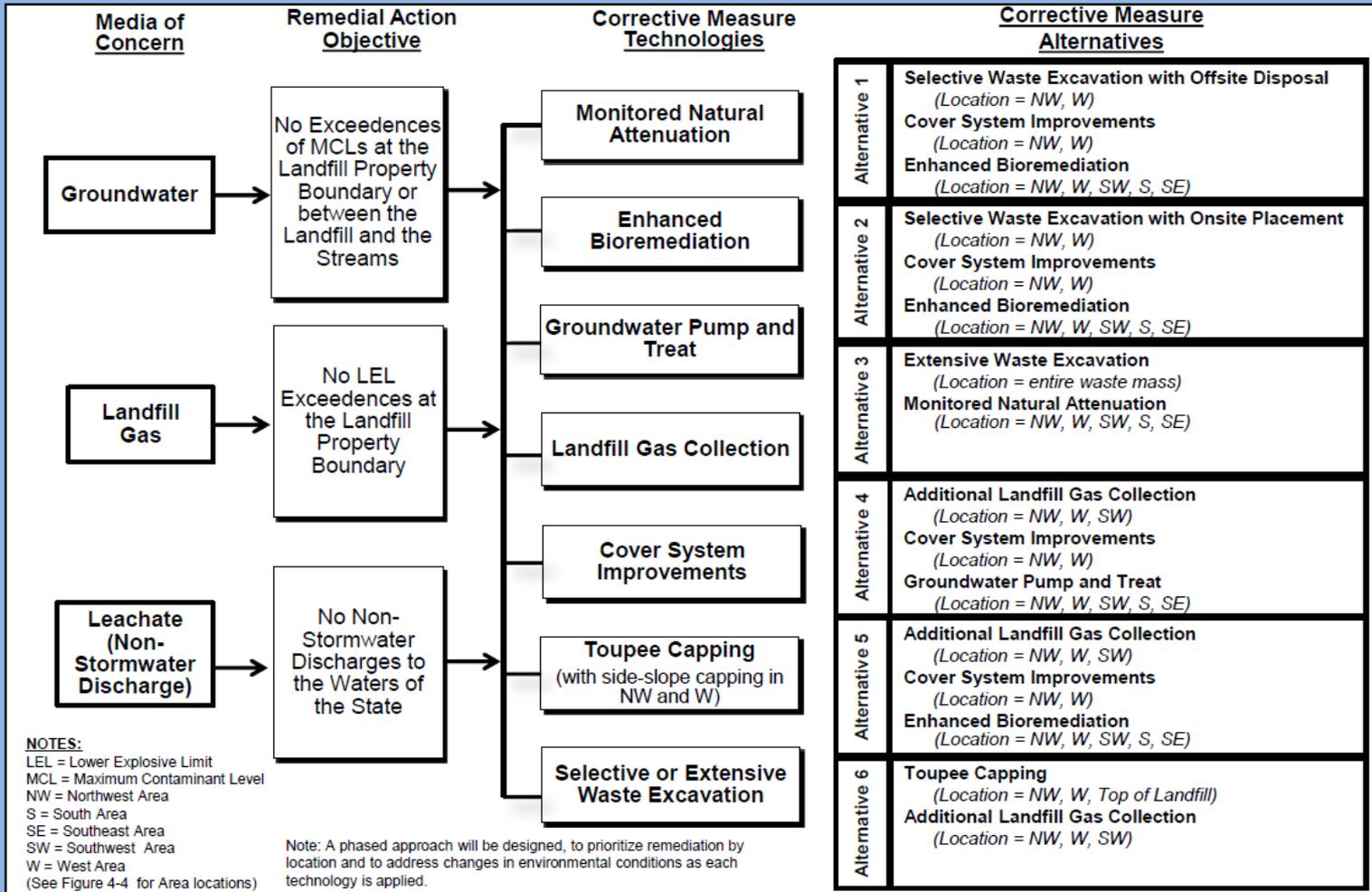
Assessment of Corrective Measures

Remedial Action Objectives

- *Groundwater:* U.S. EPA's drinking water maximum contaminant levels (MCLs) will not be exceeded in the groundwater at the Gude Landfill property boundary
- *Landfill Gas (LFG):* Methane will not exceed lower explosive limit (LEL) at the Gude Landfill property boundary
- *Leachate:* No non-storm water discharges (leachate) will occur to waters of the State



Corrective Measures Developed



NOTES:
 LEL = Lower Explosive Limit
 MCL = Maximum Contaminant Level
 NW = Northwest Area
 S = South Area
 SE = Southeast Area
 SW = Southwest Area
 W = West Area
 (See Figure 4-4 for Area locations)

Note: A phased approach will be designed, to prioritize remediation by location and to address changes in environmental conditions as each technology is applied.



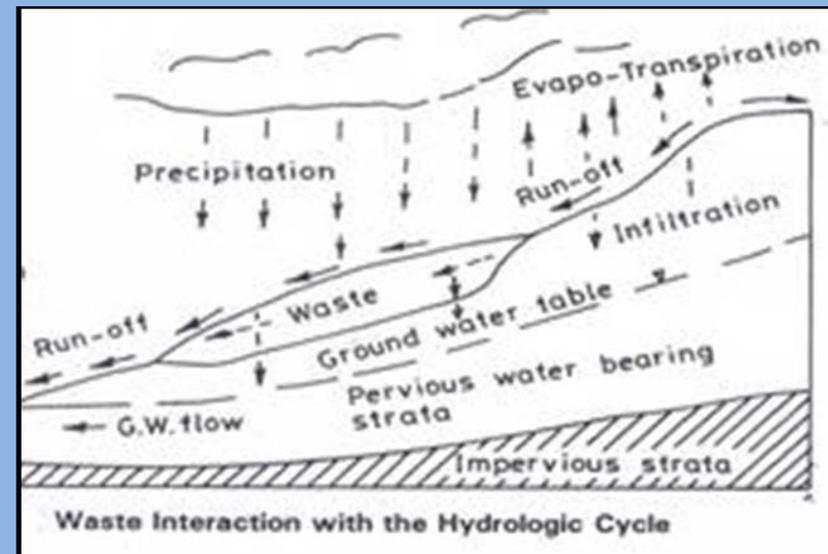
Corrective Measures Evaluated

Criterion	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
ARARs and RAOs – Groundwater ^a	4	4	4	3	4	3
ARARs and RAOs – Landfill Gas ^a	4	4	5	3	3	5
ARARs and RAOs – Leachate ^a	4	4	5	4	4	5
ARARs and RAOs – Overall	4	4	5	3	4	4
Timeframe for Achieving RAOs (years) ^a	4	4	1	3	3	2
Groundwater	12 years	12 years	30+ years	16 years	11 years ^b	30+ years
Landfill Gas	9 years	9 years	10 years	4 years	4 years	3-5 years
Non-Stormwater Discharges	9 years	9 years	10 years	4 years	4 years	3-5 years
Short-Term Risks to Community ^a	2	2	1	4	4	3
Short-Term Effectiveness – Overall	3	3	1	4	4	3
Long-Term Effectiveness	4	4	4	2	4	4
Implementability	2	2	1	3	4	5
Protection of Human and Ecological Health	3	3	4	5	5	5
Source Treatment and Reduction of Toxicity, Mobility, and Volume	4	4	5	3	3	4
Cost^f	2	4	1	4	4	5
Capital	\$105,000,000	\$52,000,000	\$455,000,000	\$8,000,000	\$9,000,000	\$26,300,000
Average Annual O&M	\$2,400,000	\$2,400,000	\$48,000	\$3,300,000	\$2,400,000	\$30,000
Total with 20 years O&M	\$152,000,000	\$100,000,000	\$456,000,000	\$74,000,000	\$57,000,000	\$27,000,000
Regulatory Acceptance	4	4	4	4	4	5
Community Acceptance	3	3	1	4	5	5
Total	29	31	26	32	37	40

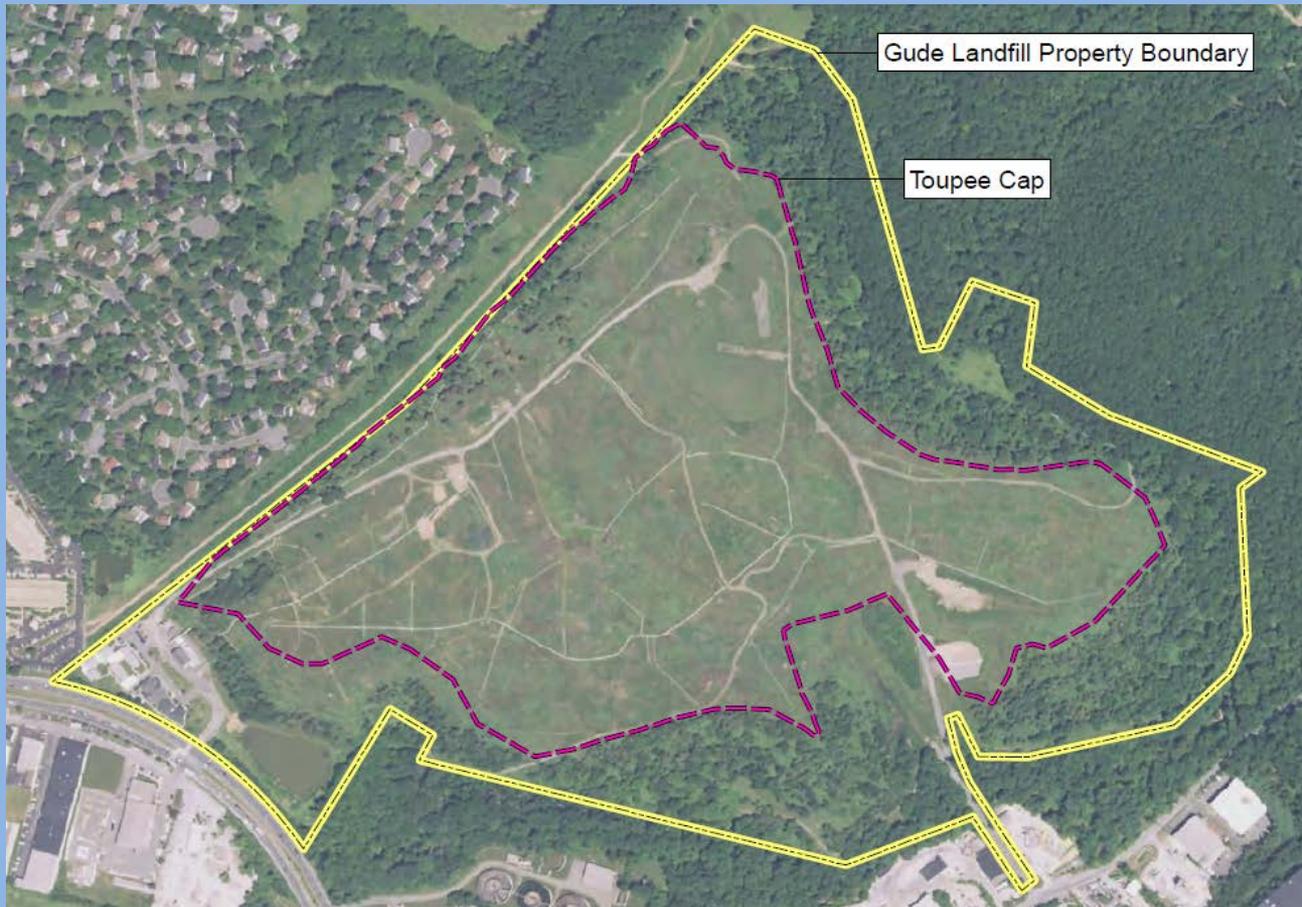


Landfill “Toupee” Capping and Additional Landfill Gas Collection

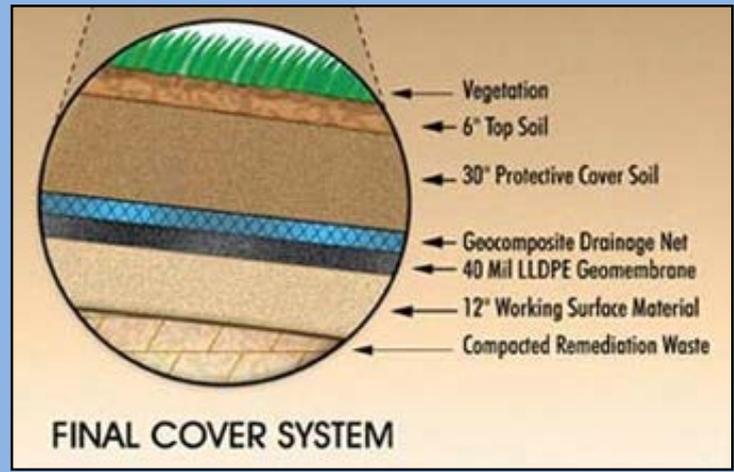
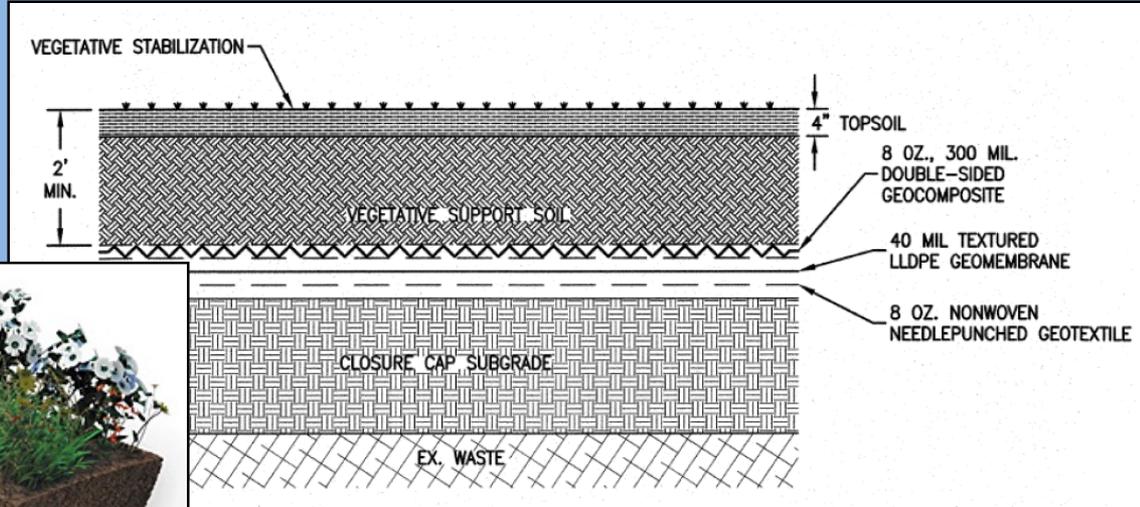
- Installation of a geomembrane cap over the flatter, grassed area of the landfill to reduce infiltration by rainwater and associated groundwater contamination and leachate seeps
- Installation of additional landfill gas extraction wells to reduce landfill gas migration



Landfill “Toupee” Capping and Additional Landfill Gas Collection



Example Landfill Capping Sections



Potential Community Impacts and Mitigation Strategies

Work will be phased to limit the size of disturbed area and limit overall impacts

Potential Impact	Mitigation Strategies
Noise	<ul style="list-style-type: none">• Limit work to daylight hours
Dust	<ul style="list-style-type: none">• Moisten exposed soil
Odor	<ul style="list-style-type: none">• Minimize amount and duration of exposed waste• Expose waste in winter• Use foam or misters to reduce odor migration
Truck Traffic	<ul style="list-style-type: none">• Minimize truck traffic on west side of landfill
Restricted Access to Site	<ul style="list-style-type: none">• Provide re-use opportunities after construction is complete



Final Landfill Condition



Land Reuse Process

- County agrees to continue holding monthly status meetings with local community representatives at mutually agreeable dates and times. Discussion of land use and reuse will continue during the Assessment of Corrective Measures Report review process and during implementation of the corrective measures.
- Written recommendations from the community should be sent to Lisa Feldt, Director, Department of Environmental Protection, 255 Rockville Pike, Suite 120, Rockville, MD 20850.
- Community land use recommendations will be forwarded to the County Executive and County Council.



Land Reuse Process (cont.)

- The County Executive will make a recommendation to the County Council concerning land reuse. This will likely occur sometime after MDE has approved the ACM report and associated remediation recommendation. Associated funding will be in the annual budget presented to the Council.
- The land re-use plan will go to the County M-NCPPC Planning Board for review under the Mandatory Referral Process.
- The County Council controls funding and will vote on whether to formally approve the final project.



Land Reuse Community Preference

- Derwood Station HOAs performed a survey of residents that indicated a preference for passive land reuse activities for the Landfill site, which include:
 - Running and walking trails
 - Bike paths
 - Model plane flying areas
 - Children's play areas
 - Dog park areas
 - Community gardening plots



Upcoming Activities

- EA will prepare the final technical report
- MDE review
- Revisions to ACM (if required by MDE)
- MDE ACM approval
- Potential future land reuse will be identified by the community, the County Executive and other interested parties
- Design and implement selected corrective measure, considering potential future land reuse options in design of corrective measure to the extent feasible
- Monitor success of corrective measure



Anticipated Schedule

CY	2008				2009				2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022																																														
	Q3	Q4	Q1	Q2																																																																																																			
FY	FY09				FY10				FY11				FY12				FY13				FY14				FY15				FY16				FY17				FY18				FY19				FY20				FY21				FY22																																																		
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Project Phase																																																																																																							
Formalize Environmental Monitoring Plans	█																																																																																																						
Remediation Approach	█																																																																																																						
Aerial Survey and Waste Delineation					█																																																																																																		
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Exchange of Land with M-NCPPC					█																																																																																																		



Ongoing Community Engagement

- Regular GLCC/DEP Meetings
- DEP will continue to present documents to the community at principal milestones such as the approval of the ACM study
- DEP will continue to post documents to the remediation webpage



County Contacts & Additional Info.

- Peter Karasik
 - Section Chief, DSWS Central Operations
 - 240-777-6569; Peter.Karasik@montgomerycountmd.gov
- Rao Malladi
 - Senior Engineer, DSWS Central Operations
 - 240-777-6574; Rao.Malladi@montgomerycountymd.gov
- Gude Landfill Remediation Webpage
 - <http://www.montgomerycountymd.gov/sws/facilities/gude/>
- GLCC/DEP Meetings
 - Open to public and typically held the second Thursday of each month
 - Contact Rao Malladi for schedule

