

GIS Applications for Solid Waste Operations

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Uses of GIS in Solid Waste Operations

- Optimizing Routes in Waste Collection
- Siting Landfills, Waste Processing Facilities, etc.
- Design Phase of Landfills
- Landfill Operations
- Tracking Hurricane Debris Cleanup





What is GIS (Geographic Information System)?



Geographic Information Systems (GIS) is a framework for gathering, managing and analyzing data.





Geographic Information System

- Data can be visualized in endless ways.
- Visual interpretation of complex data.





Surface Emissions Monitoring (SEM)







Handheld GPS/FID with Built-in GPS

- Requires downloading data.
- Data is not viewable in real-time.
- No smartphone/tablet interface.
- No storage of multiple fields of information for a given point.
- Does not associate photos with a point.





SEM Using GIS

Collector for ArcGIS



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Landfill Operations Field Tools Explorer For ArcGIS









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Desktop Tools Operations Dashboard





Desktop Tools Operations Dashboard

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Benefits of Using GIS for SEM



- Easy to use with any smartphone or tablet.
- Real-time data to stakeholders.
- Customizable to store multiple information for a data point.
- Ability to capture pictures and associate with a data point.

Collector, Explorer & Operations Dashboard for ArcGIS

Data can be easily imported into AutoCAD.





H₂S Heat Map for Odor Control



Jerome Meter

Sweep points are labeled with individual H2S PPM values over 0.1. Contour map represents Kriging Analysis of the Class I 2015 4th Qrt Sweeps H2S Hot Spot Anaylsis z-Score.

Note: Closed Cells 1-4 have been excluded from monthly sweeps, they will be swept annually.



Landfill Gas with GIS - SWAMPGAS



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GIS for Location of Temporary Debris Management Sites (TDMS)







Tracking Hurricane Debris Using GIS





Tracking Hurricane Debris Using Collector



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Tracking Hurricane Debris Using GIS





Summary - Use of GIS

- Surface Emissions Monitoring (SEM)
- ► H₂S Heat Maps for Odor Control
- Landfill Gas using SWAMPGAS
- Location of Temporary Debris Management Sites
- Debris Assessment
- Debris Collection Tracking Where are we headed...

GIS Centric Asset and Work Order Management System



Questions?



