

**ADDITIONAL MATERIAL
PUBLIC HEARING
JANUARY 23, 2024**

**SUBMITTED AT THE REQUEST OF
RESILIENT ENVIRONMENT
DEPARTMENT**



Resilient Environment Department
115 S. Andrews Avenue, Room 329 • Fort Lauderdale, Florida 33301 • 954-357-6612 • FAX 954-357-8655

Date: January 18, 2024

To: Broward County Board of County Commissioners

From: Leonard Vialpando, PE, Department Director *Leonard Vialpando*

Re: January 23, 2024 – Commission Meeting – Agenda Items 45 and 46

As a result of conversations with commissioners regarding Agenda Items 45 and 46, several questions related to climate change were asked of Waste Management by Broward County. The text of the questions and Waste Management's responses are attached below as additional material.

cc: Monica Cepero, County Administrator
Kimm Campbell, Deputy County Administrator
Drew Meyers, County Attorney
Bob Melton, County Auditor

WM Response to Monarch Hill LUPA Questions:

1. How would the applicant propose to minimize greenhouse gas emissions if allowed to expand the landfill use to the affected site?

Reducing climate impact and greenhouse gas emissions of our operations is a top priority at WM. By 2031, WM is committed to reducing greenhouse gas (GHG) emissions by 42% below our baseline year of 2021. As part of our commitment, we have invested heavily in landfill operations including enhanced surface cover, landfill capping, and landfill gas collection systems that meet or exceed regulatory requirements.

The Monarch Hill land use plan amendment (LUPA) site would utilize the existing Monarch Hill Landfill-Gas-To-Energy (LFGTE) plant to manage the methane generated from the new landfill area. The LFGTE plant currently utilizes the landfill methane to generate clean, renewable energy (electricity) powering approximately 9,000 homes per day.

In addition, the new landfill area would utilize the current flare capacity at Monarch Hill Landfill to destroy methane not utilized for energy generation to manage emissions.

2. Fugitive emissions, like methane, may have economic value. How would the applicant propose to address future emissions for the affected site?

The expanded landfill use site would utilize the existing Monarch Hill Landfill-Gas-To-Energy (LFGTE) plant to manage the methane generated from the new landfill area. The LFGTE plant currently utilizes the landfill methane to generate clean, renewable energy (electricity) powering approximately 9,000 homes per day.

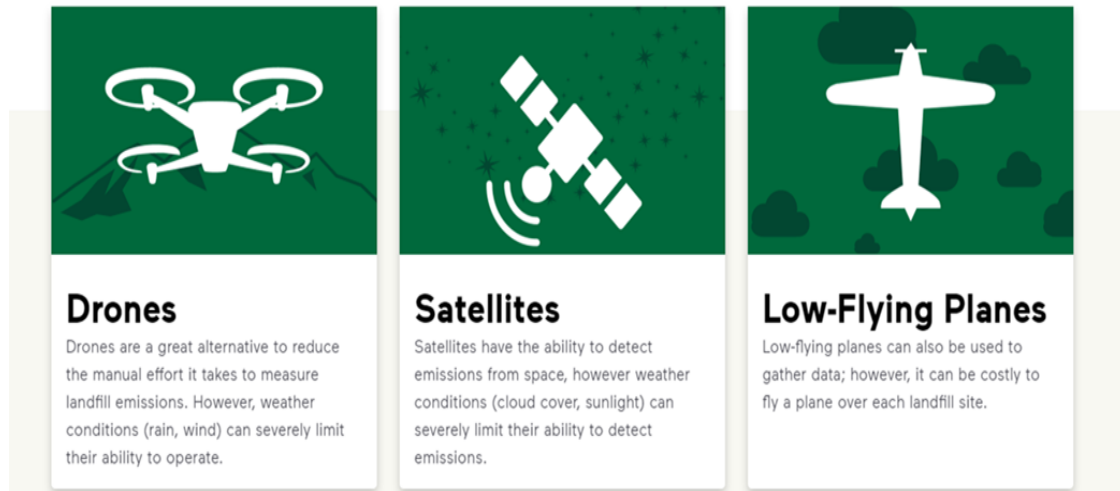
It is important to note that a “no” vote on the LUPA would mean that the Landfill Gas-to-Energy site would be utilized for landfilling out of necessity with a resulting increase in GHG emissions.

3. What monitoring and measuring methods will be used to minimize net life cycle emissions for the affected site?

WM collects landfill gas at our municipal solid waste landfills – including at Monarch Hill Landfill – to comply with environmental regulations and the conditions of air quality permits issued to our facilities by federal and state regulatory agencies. At many of our facilities, including Monarch Hill Landfill, collected landfill gas is beneficially reused to create renewable energy which can power communities.

WM monitors emissions from all our landfills including Monarch Hill Landfill. The traditional way of measuring landfill surface emissions involves a WM technician manually traversing the landfill with a portable sensor. Today, we’re seeing new technologies like satellites and drones being equipped with the capabilities to collect emissions data presenting opportunities for evolving how we measure emissions.

To compare current measurement methods with newer tools, WM has been working with regulators, such as the U.S. Environmental Protection Agency (EPA), Environment and Climate Change Canada (ECCC), academia, technology providers, and other experts, including Carbon Mapper, to conduct research and evaluate the accuracy and reliability of available measuring methods using several of our landfill sites. Here are a few of the tools being tested:



Each of these technologies has its limitations, so to get the most accurate and reliable measurement of methane emissions, we're using multiple tools and technologies. To help review and interpret all the data, WM and its contractor, Blue Sky Resources, developed the Air Logic application.

Air Logic brings available landfill emissions data, from 160 sites including Monarch Hill Landfill, into one powerful tool. Putting this data from technician landfill surface emissions monitoring (LSEM) events, satellite, drone, and aircraft observations as well as real-time optical imagery and weather data into our teams' hands gives us the ability to visualize and review more data points, act quickly, and take preventative action based on the most accurate data possible.

In 2024, WM will also roll out the LSEM application to our gas technicians, allowing them to automate and visualize surface emissions monitoring data collection, produce work orders, and more.

By taking preventative action, we're reducing the impact our operations have on the environment and improving the efficiency of our gas collection systems—increasing our capacity to generate more renewable energy.

4. How would the applicant propose to address the reduction in alternative energy generating capacity?

WM is seeking a Land Use Plan Amendment (LUPA) for a 24-acre parcel at Monarch Hill, formerly the Wheelabrator North site, and originally a Waste-to-Energy (WTE) facility. Wheelabrator North ceased operations in July 2015 after the Solid Waste Disposal District was disbanded, the plant was decommissioned, and its equipment removed. It is scheduled for demolition in early 2024.

The LUPA is the first step in utilizing the 24 acres for future landfill space. If approved and utilized for landfilling, the site would still be generating alternative energy by utilizing the existing Landfill-Gas-to-Energy plant to produce clean, renewable energy (electricity) powering approximately 9,000 homes per day.

In addition, WM is investing \$825 million through 2026 to expand its Renewable Natural Gas (RNG) infrastructure nationwide and has committed to build two Renewable Natural Gas (RNG) facilities in Florida at Okeechobee Landfill and Medley Landfill.

The Okeechobee Landfill RNG facility will process biogas collected from the landfill into pipeline-quality gas for injection into the nearby commercial gas transmission and distribution network. The facility will use a proven, reliable, and efficient technology platform including a combination of physical and chemical absorbers to purify the biogas. The facility is expected to recover and distribute roughly 2 million MMBTU per year of RNG. The recovered gas would serve the air conditioning/heating needs for over 50,000 households or would fuel the equivalent of approximately 1,800 heavy duty waste and recycling vehicles. Through the beneficial use and recovery of the biogas, more than 100,000 tons per year of carbon dioxide emissions would be avoided or reduced.

Through a mix of WM plants and third-party developers, WM currently has 16 RNG plants across North America and plans to add an additional 17 RNG projects by 2026. WM estimates that the increased RNG production will displace 1.43 million tons of carbon dioxide (CO₂) by 2026, the equivalent to 3 billion miles driven by an average gasoline-powered passenger vehicle.

5. How would the applicant propose to ensure that MSW, including organics, are successfully recycled through methods like waste-to-energy and composting?

Today, 90% of the material coming to Monarch Hill Landfill is construction and demolition debris and bulk waste that cannot be incinerated (only 10% is municipal solid waste). And overall, 43% of Broward's waste is C&D material which cannot be incinerated.

Most of the C&D material coming to Monarch Hill Landfill has already been processed for recycling at WM Recycling Oakes Road and WM Recycling Deerfield, reducing its volume by 50%.

In addition, WM to set to break ground on its new \$75 million WM Recycling South Florida facility in Pembroke Pines in early 2024.

WM Recycling South Florida will be one of the largest and most technologically advanced single-stream recycling facility in the Southeastern United States and is expected to improve the recycling capture rate while reducing the amount of contamination in the inbound stream.

The 127,000-square-foot WM Recycling South Florida facility will have a capture rate of 95 percent compared with the 80-85 percent rate in current facilities. It will also have the capacity to process 60 tons per hour, resulting in a 75 percent increase in the production of marketable recycling materials.

WM does not own or operate waste-to-energy facilities (or composting facilities in Florida).