

# The Middlesex County Landfill

*an overview  
presentation for  
the residents of  
East Brunswick*



**MCUA**

Middlesex County Utilities Authority

# What we do at the Landfill:

- We are the disposal site for the majority of all waste generated in Middlesex County, including waste from East Brunswick.
- We are open for our residents and communities 300 days per year.
- We accept approximately 2,000 tons of waste a day, which equates to 4 million pounds of waste a day.
- Average person generates 4.4 pounds of waste a day.



# What is the Landfill Gas-to-Energy system?

- Methane, a gas naturally occurring from decomposing solid waste, is collected from the Middlesex County Landfill.
- The methane is transported via a network of pipelines to the Electric Power Generating Facility in Sayreville.
- There the gas is turned into 16 megawatts of electrical green energy. The recycled energy is then used to power the MCUA Central Treatment Plant where most of the County's sewage is sent, including East Brunswick's sewage.
- The gas delivers cost-saving green energy for Middlesex County residents.

# Fundamental Questions

- **Why does it smell?**
- **What are we doing about it?**
- **When will it get better?**

# Why does it smell?

## *Recent odors*

- A major capital improvement to the Landfill Gas-to-Energy system is currently ongoing.
- We have been literally digging holes and drilling wells in the Landfill which is contributing to the odors.
- Winds and weather conditions have taken the nuisance odors into neighborhoods near the Landfill.

# Why does it smell?

## *Recent odors*

- Rotten egg smell is caused by the Hydrogen Sulfide present in Landfill gas.
- Air sampling was performed along the property line in December 2018.
- Hydrogen Sulfide suggested limit is 30 parts per billion (ppb) averaged over a 30-minute period.
- Landfill is operating well below these limits.

# Why does it smell?

## *Recent odors (continued)*

- 2018 was New Jersey's wettest year on record. This had a major impact on the cause of the odors in two ways:
  - The Landfill gas extraction lines have to be continually pumped to remove water from the system
  - Rain water can cause the Landfill to smell even though the waste is covered every day



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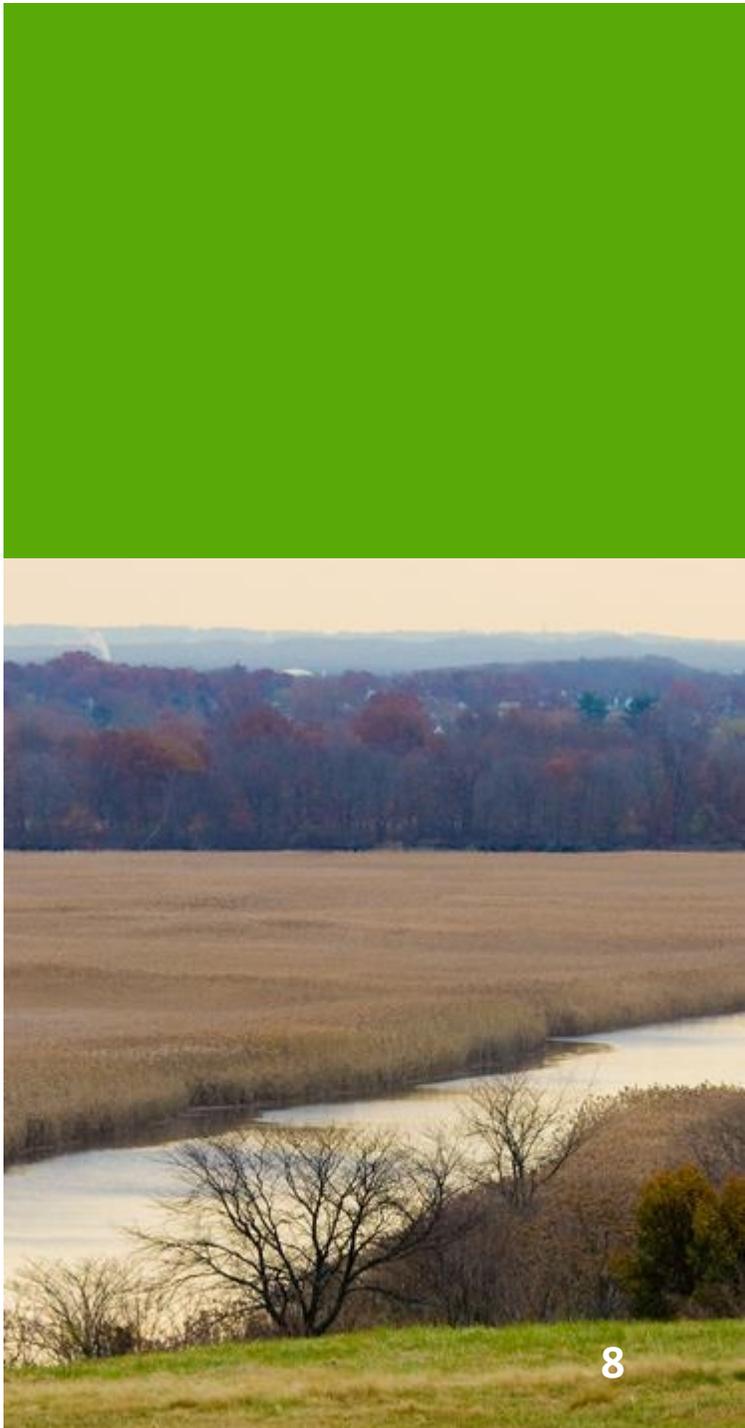
# New Jersey's wettest year on record: 2018

*New Brunswick rainfall:*

<b>2018</b>	<b>63.22 inches of rainfall</b>
2017	51.34 inches
2016	38.77 inches
2015	39.51 inches
2014	50.90 inches
2013	45.48 inches
2012	37.09 inches
<b>7-year average</b>	<b>46.62 inches</b>



*2018 saw 16.6 more inches of rain than the average*



# Why does it smell?

- While there is no one single factor, one cause of the recent increase in odors is because our gas collection system is undergoing major renovations.
- This will be an ongoing activity as long as the Landfill exists. As improvements are completed, we expect to see a reduction in odors.
- Since November rebalancing.

# What are we doing about it?

## *Odor reduction efforts*

- We're investing millions of dollars in upgrading the current gas collection system. The process is difficult because the pipeline system spreads over 200 acres of our Landfill.
- As waste continues to come to the Landfill, we will continue to build and expand the gas collection system and improve our water collection and pumping systems.
- Landfills by design are constantly settling and the gas collection system within the Landfill has to adjust accordingly.

# When will it get better?

- There are ongoing projects through the fall of 2019. We believe completion of these projects should not cause the level of odors that were recently experienced.
- A significant improvement to the Landfill gas collection system was completed in December 2018.
- Significant new Landfill gas system improvements to a portion of the Landfill (Cell 8) are underway and will be completed by March 2019.
- High Capacity Water Pumping System in Spring 2019.



# When will it get better?

*In addition to the Landfill gas system improvements, other capital initiatives are being performed and will reduce odors:*

- Temporary cap installed along the eastern portion of the Landfill covering 12 acres completed in December 2018.
- Interim Cap on top of the Landfill – a soil cover (Spring 2019) and HDPE liner (Summer 2019) will be installed on approximately 34 acres at the top of the Landfill.
  - This will seal off a significant portion of the top of the Landfill for approximately the next two years, reduce the active area, and help keep odors sealed below the cap.

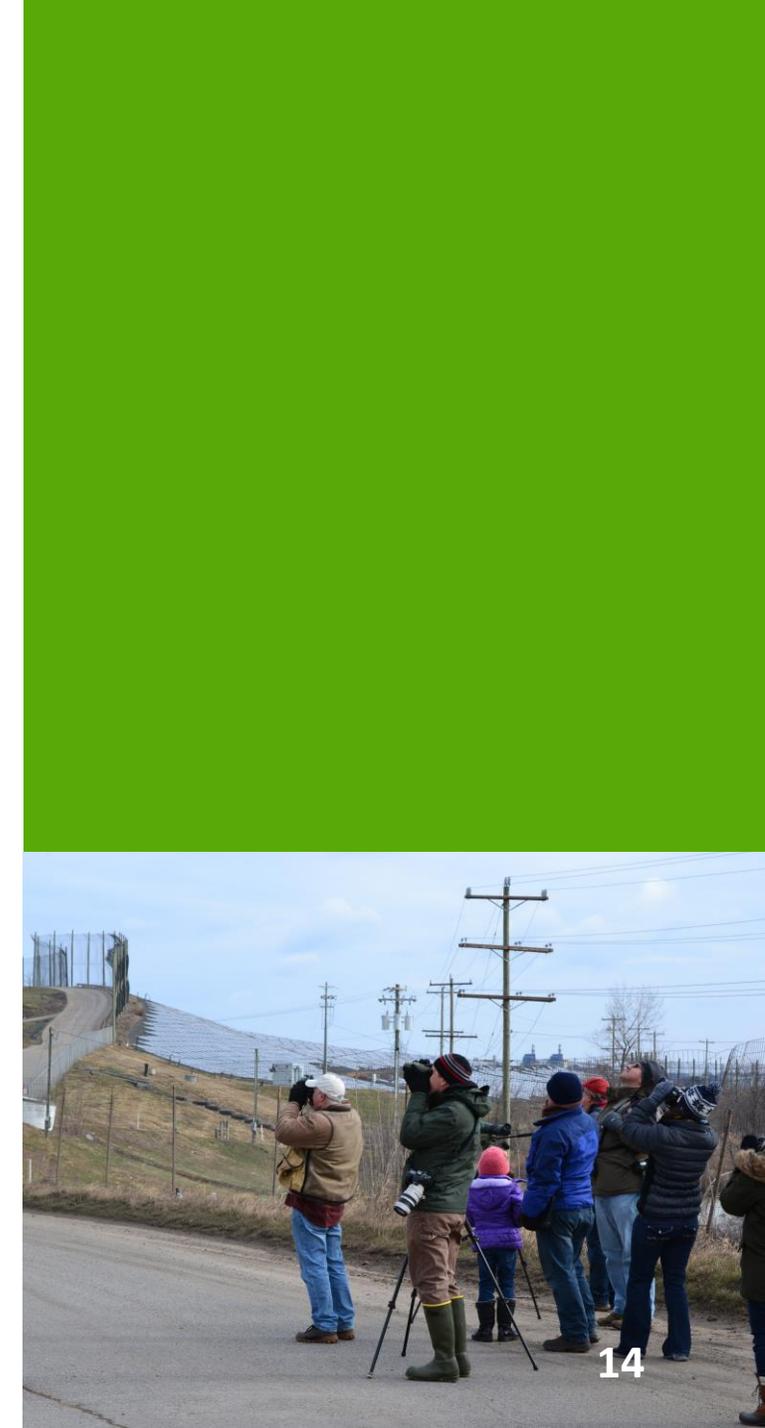
# When will it get better?

## *Other capital initiatives (continued)*

- A final cap covering 18 acres will be placed along the Edgeboro Road portion of the Landfill and should benefit the Pine Ridge neighborhood. This permanent cap construction will begin in late Spring 2019 and will be completed in early 2020.
- Significant investment to develop and install a new odor control system.
  - The system will create an entire ring around the upper portion of the Landfill. A vapor system will help control various odors coming from the Landfill. Based on the NJDEP permitting process, this will be installed by early Summer 2019 or sooner.

# MCUA: Who we are

- We are supporters of environmental education efforts for local grammar schools, high schools and colleges through our Landfill tour programs.
- We are a major financial supporter of the County and Municipal recycling programs.
- We contribute millions of dollars each year to our host community, East Brunswick Township in addition to contributions to South River, Sayreville, and Edison.
- We provide 20 acres to East Brunswick residents for their leaf composting program at the Landfill.
- We provided for the protection and conservation of 152 acres around our facility as a buffer to our neighbors.
- We support local environmental groups including the East Brunswick Environmental Commission and the New Jersey Audubon Society, who use the Landfill for bird watching and other educational activities.



# Summary and Q&A

- Methane from the Landfill is collected, used to create energy
- **Why does it smell?**
  - Digging holes in Landfill (to improve gas collection system) releases odors + record rain totals
- **What are we doing about it?**
  - Upgrading gas collection system, new capping projects, new odor control system, and improved water pumping capability
- **When will it get better?**
  - When improvements to the Landfill gas collection system are complete, it is anticipated that odors will continually be reduced
- The MCUA will host a Landfill tour on May 11, 2019.
- The MCUA will return for another forum in East Brunswick in June 2019. If you'll have us back.

- It should be noted that the MCUA continually assists the County, other government agencies, and all of our municipalities during times of emergency, such as fires, blizzards, and hurricanes, to name a few.
- We understand the role that we have in the community and realize we must continue to improve our efforts.

# F&P 3D View of Landfill Improvements