



# Co-Digestion

Harnessing a valuable resource

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**King County**

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# CO-DIGESTION

- Commercial food waste is screened to remove contaminants and sent through a blend tank
- Food waste is converted into an organic slurry
- The slurry can then be directly pumped into anaerobic digesters at wastewater treatment facilities
- Co-digestion enhances the digestion process at the treatment plant and increases gas production

# 2019 WM PROPOSAL: CO-DIGESTION

- King County approached by Waste Management
  - Wastewater Treatment Division (WTD) and Solid Waste Division met to discuss potential for co-digestion in WA State
- King County representatives headed to East Coast for an exploratory visit
  - 3 wastewater facilities, 3 solid waste facilities and 3 food waste process facilities



# The Process

# Product Quality

- WTD highest priority: protecting our processes and products.
- Testing:
  - Metals
  - Nutrients
  - pH
  - Chemical Oxygen Demand
  - Total Solids
  - Physical inerts



## Boston Key Takeaways

- 2014 – Massachusetts banned disposal of organic material.
- Compost facilities maxed out.
- Biogas production reduced greenhouse gas (GHG) emissions by 20%.
- Potential to generate 100% of its energy needs.



## New York Key Takeaways

- Facility used to prove the concept.
- The goal is to reduce GHG to 40% below 2005 levels by 2050 and carbon neutral by 2050.
- Two phased approach.



## New Jersey Key Takeaways

- Drivers were finance and performance.
- Sought a contract:
  - guaranteed pricing and schedule
  - odor guarantee
  - minimum slurry delivery commitment with specific pricing
  - maximum solids production based on percent increase over historical trend
- Anticipate reaching Net Zero by 2025.





# SUMMARY OF FINDINGS

- 50% increase in gas production
- Little change or variability to the biosolids end-product
- Benefits to the wastewater treatment plant include:
  - Increased Volatile Solids Reduction (VSR)
  - Increased biological activity
  - Increased stabilization of biosolids
  - Decrease in digester foaming events
- Benefits to the environment include:
  - Reduction in GHG emissions
  - Sustainable waste management process
  - Potential landfill diversion (future exploration)

- Largest portion of food waste is on the South End
  - Focus is on Bow Lake and South Treatment Plant
- Phased approach will work best
  - Build volume received over time
- Timing is important
  - Policy changes
  - Permitting
  - Outreach/education



Initial Exploration

# Next Steps



1. Working with Solid Waste Division to establish internal team
2. Determine costs, benefits, revenue potential, constraints
3. Siting, processing, operating, etc.
4. Consistent volume availability

# Questions?

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