

# ZERO WASTE INITIATIVE

## STATUS UPDATE

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# STRATEGIC PLAN

## GOAL 6: BUILDING A SUSTAINABLE REGION

- Protect the natural environment
- Reduce carbon footprint
- Reduce landfill waste



# STORY OF ZERO WASTE





# TRADITIONAL SOLID WASTE MANAGEMENT

- Hundreds of tonnes of waste deposited daily
- Wasting valuable resources
- Occupies valuable land
- Impacting climate change
- Not leveraging unique regional opportunities

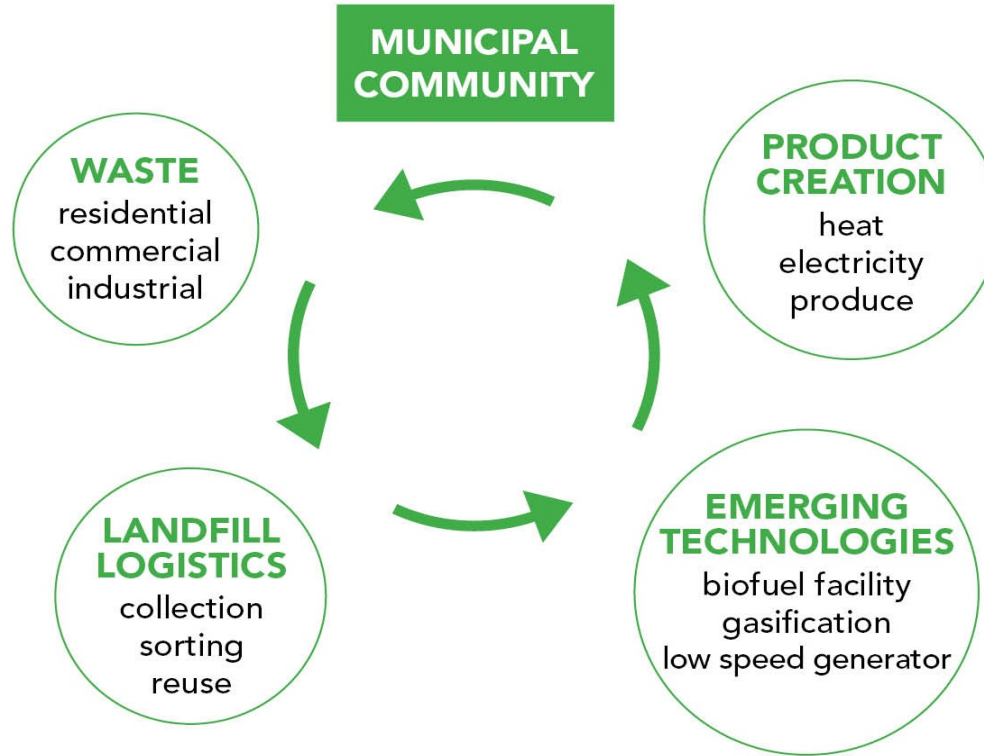


# “ALL CLIMATE IS LOCAL”

- “Mayors are often better equipped than presidents to cut greenhouse gases”
- “In some ways, cities may be in a better position than nations to do something about climate change.”

Scientific American, Cynthia Rosenzweig, September, 2011

# ZERO WASTE CONCEPT





# BENEFITS

An aerial photograph of a city, likely Asheville, North Carolina, showing a mix of urban development and green spaces. In the foreground, a large, modern building with a curved roof, possibly a convention center or arena, is visible next to a golf course. The city extends into the background, surrounded by dense green forests and rolling hills under a clear blue sky.

## Environment

- Reduced carbon footprint
- Positive net environmental effects
- Reduced land disturbance

## Economy

- New revenue sources
- Reduced operating costs
- Diversified local economy

## Society

- Community Investment
- New Local Products
- Job Creation



# KEY PROCESSES

Waste → Energy



Energy → Resource





# LOCAL INITIATIVES

## Waste to Energy

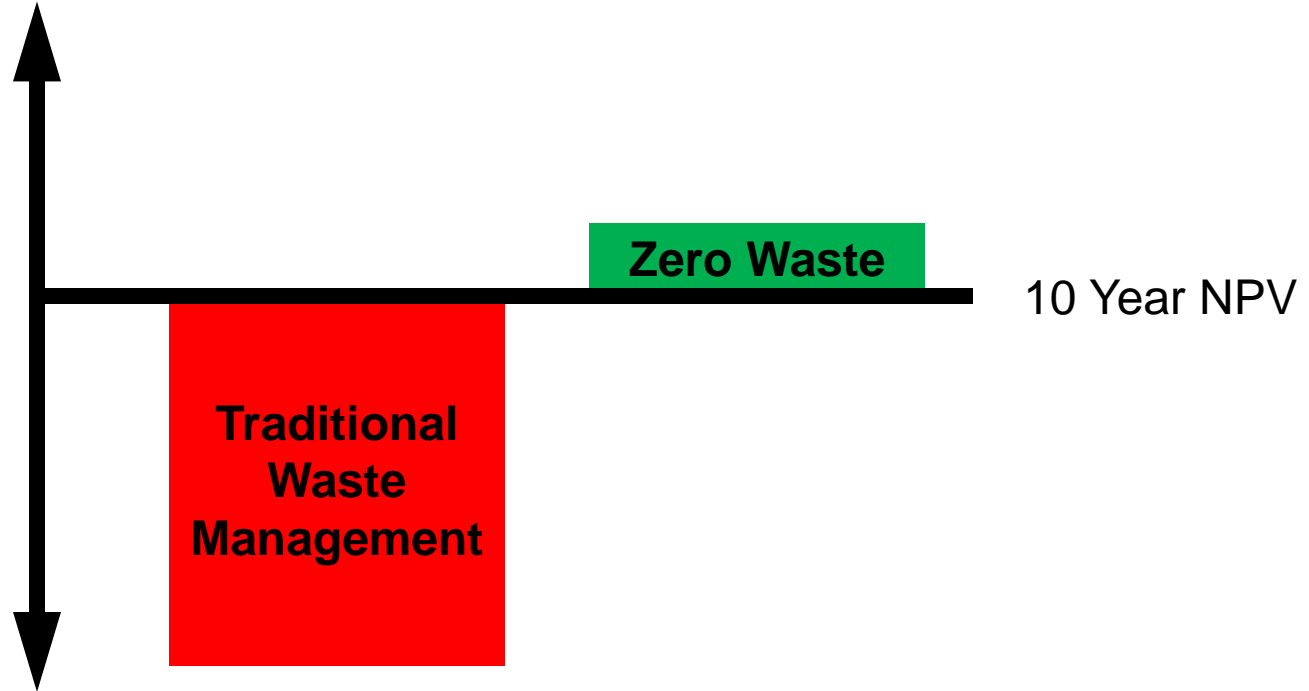
- Gasification
- Biodiesel Generation
- Aerobic Landfill Bioreactor
- Effluent Heat Capture
- Waste Conditioning

## Energy to Resource

- Electricity and Heat Generation
- Aquaponic Greenhouses
- Material Conversion

# ZERO WASTE INITIATIVE

## NET PRESENT VALUE



# GASIFICATION STATUS

Gasifier is currently at the landfill





# GASIFICATION

## NEXT STEPS

- 2016 Q3 – Gasifier Commissioning
- 2016 Q3/Q4 – Testing
- 2017 and beyond – Technology Scaling

# BIODIESEL STATUS

Biodiesel unit is currently at the landfill



# BIODIESEL

## NEXT STEPS

- 2016 Q3 to 2017 Q2 – Facility Inspections and Certification
- 2017 Q1 to Q3 – Preparation for Operating
- 2016 Q3 to 2017 Q3 – Collection of Waste Vegetable Oil



# AQUAPONIC GREENHOUSES

## STATUS

Three units located at the Landfill  
One unit operated in 2015



# AQUAPONIC GREENHOUSES

## NEXT STEPS

- 2016 Q3 – Operations and Maintenance Plans
- 2017 Q2/3 – Finalize Certification
- 2017 Q4 – Units Operating

# AEROBIC LANDFILL

LARGEST LANDFILL CARBON OFFSET PROGRAM IN THE WORLD





# ZERO WASTE INITIATIVE AND BEYOND

- Continued progress - Phase 1 target completion in 2017
- Integrated Initiatives
  - Implementing waste conditioning technologies

THANK YOU