

# Metro Plant Solids Management Improvements



June 2021 Virtual Project Update



# **Welcome**

## **Peter Lindstrom**

**Metropolitan Council Member – District 10  
Environment Committee Chair**



# Project Update Objectives



**Share information on the status of the Metro Plant Solids Management Improvements Project and opportunities for future public engagement.**





Overview



How it Works



Air Permitting &  
Environmental  
Review



Summary



# Overview

**Jeannine Clancy**  
Assistant General Manager



Protects public  
health and  
safety



Protects the  
environment



Fosters the  
economic growth  
of the region

## WHO WE SERVE

7-county Twin Cities Metro Area

110 communities

2,600,000 people

## OUR FACILITIES

9 wastewater treatment plants

640 miles of interceptors

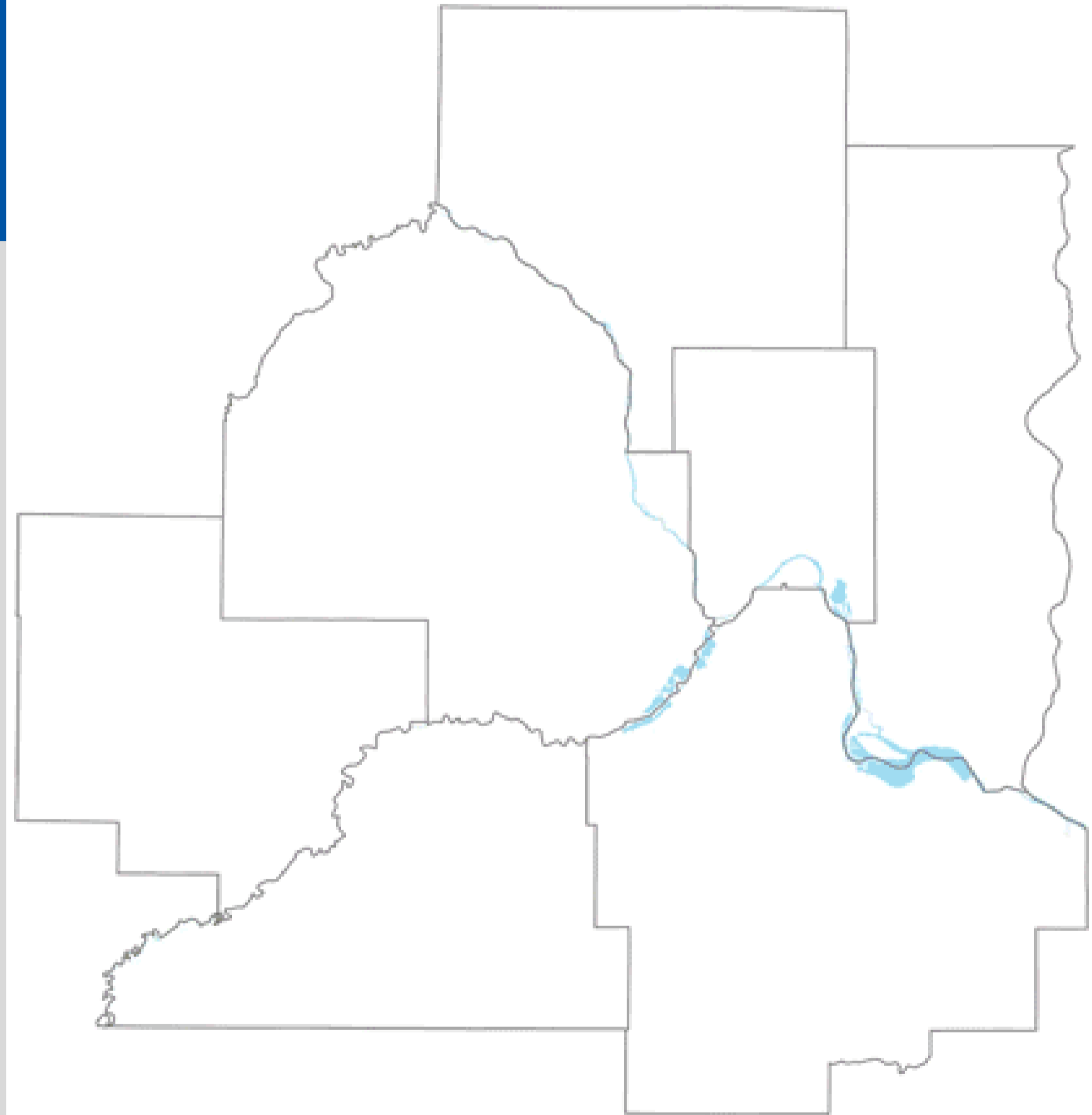
250 million gallons per day (avg)

## OUR ORGANIZATION

600+ employees

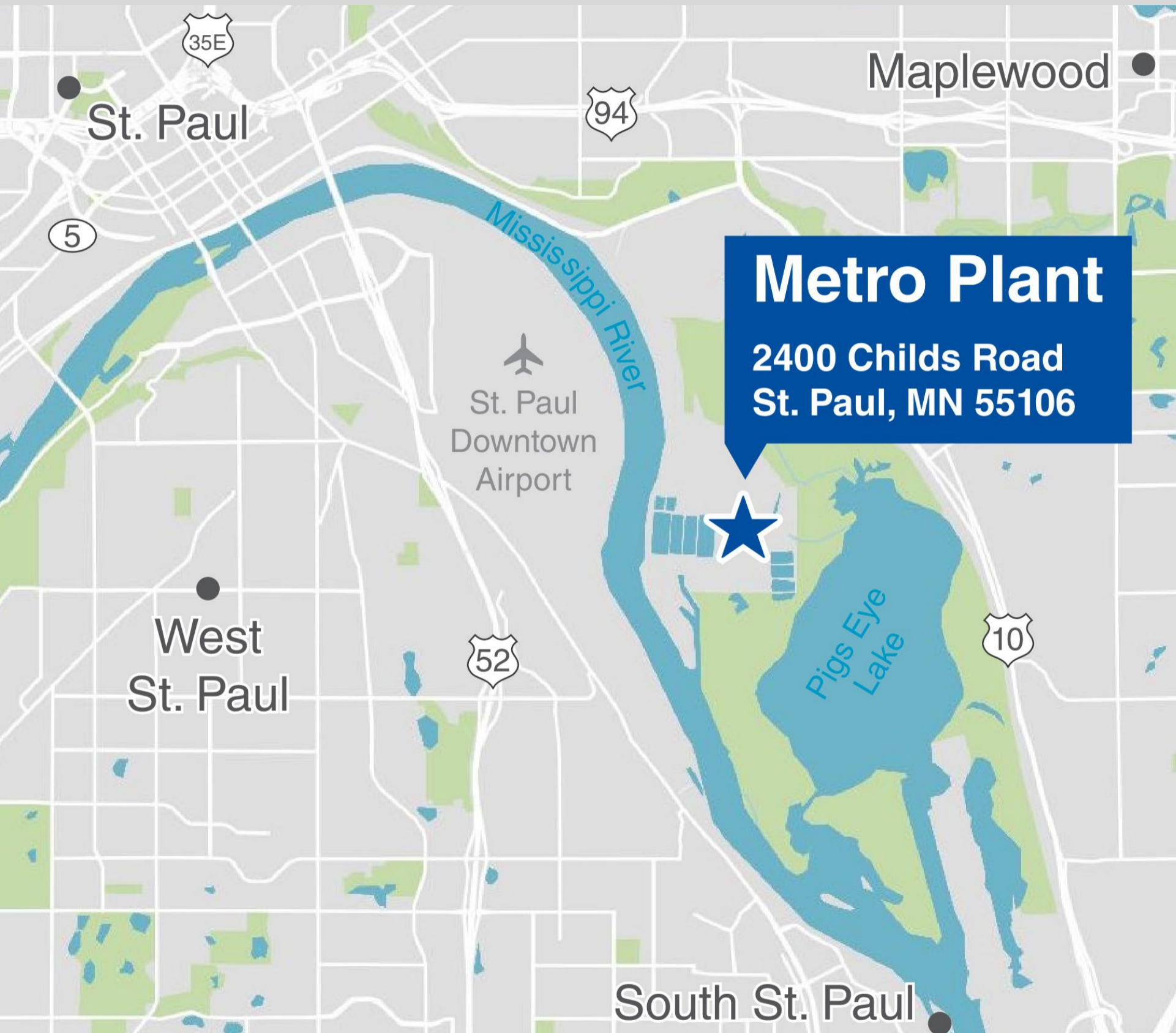
\$7 billion in valued assets

\$150 million / yr capital program



# Metro Plant Location

*The Metro Plant is located southeast of downtown Saint Paul.*



## Metro Plant

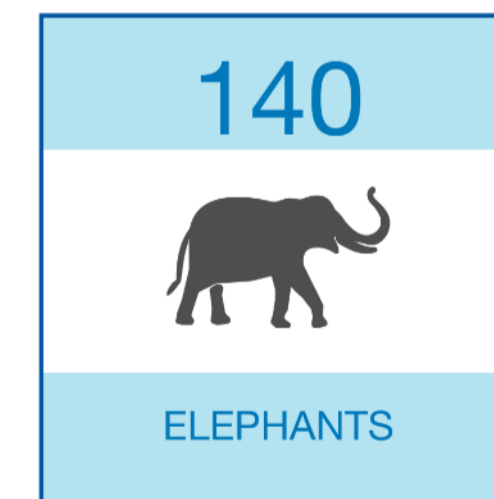
- Processes 850 wet tons of wastewater solids every day for 73 communities.

**850** WET TONS EVERY DAY

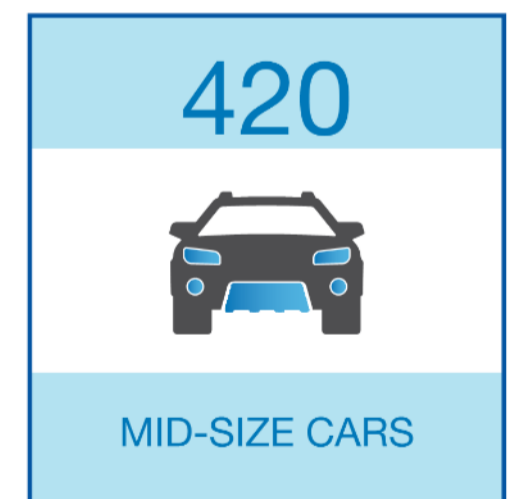
EQUIVALENT WEIGHT TO:



Every day



Every day



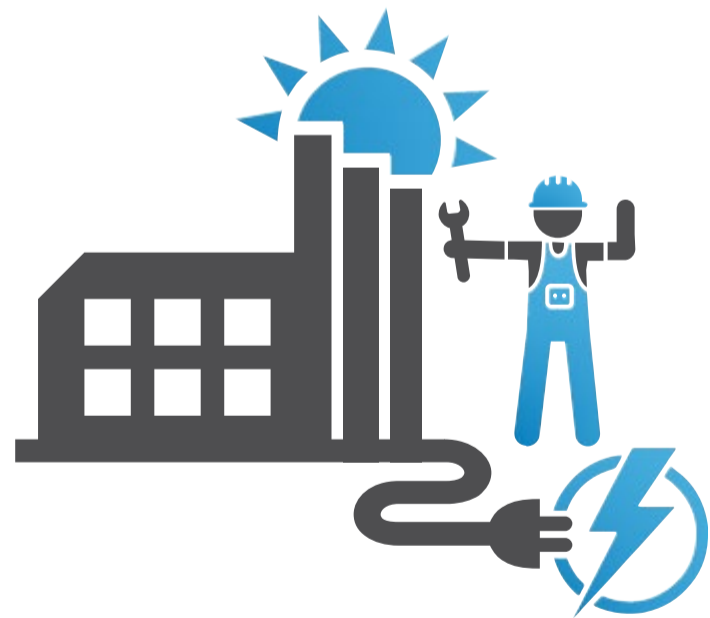
Every day

*The Metro Plant processes 75% of the region's wastewater solids including solids from four other treatment plants.*

# Project Need



**Preserve Existing Wastewater Treatment Plant Infrastructure**



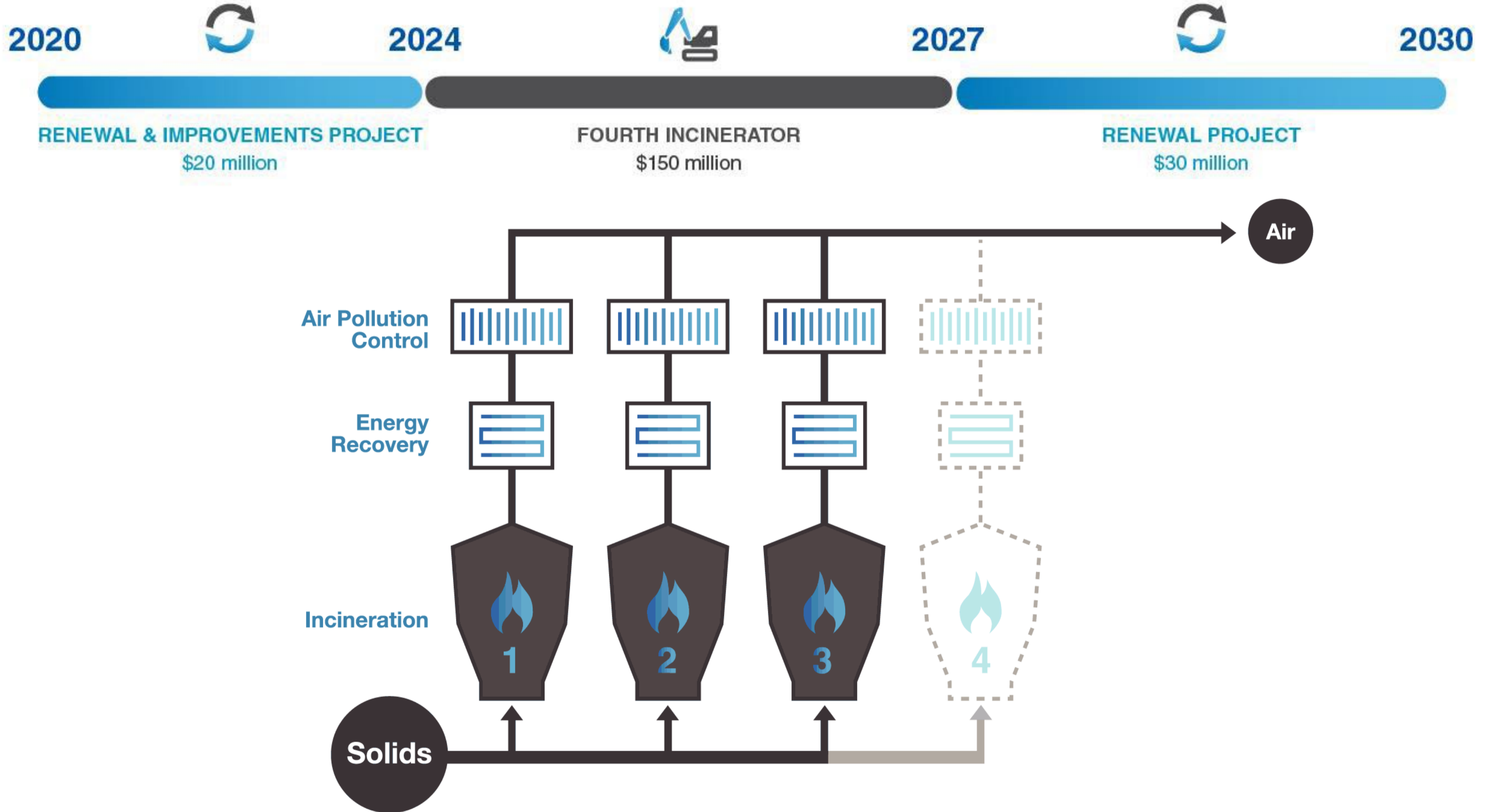
**Serve Regional Population Growth**



***Adding Solids Processing Capacity at the Metro Plant is Important for the Region.***



# Program Overview



***MCES will spend roughly \$200 Million on Metro Solids projects over the next eight years.***

# Project Scope

**Cake  
Receiving**

**Dewatering**

**Fourth  
Incinerator**

**Energy  
Recovery**

**Air Pollution  
Control**



***The fourth incinerator will include a 21,000 square foot building addition and the stack will be located in the same location and height as the existing stacks.***

# Project Planning



Outreach



Public Hearing



Facility Plan



Metro Plant  
Solids Management  
Improvements  
Facility Plan



Prepared for  
Metropolitan Council Environmental Services

January 2019

***After public outreach and public hearing, the Metropolitan Council approved the Facility Plan in October of 2018.***

# Project Schedule

2015



2019



2024



2027

PLANNING

FOURTH INCINERATOR  
PERMITTING / PROCUREMENT /  
PRELIMINARY DESIGN

FOURTH INCINERATOR  
DESIGN BUILD  
CONSTRUCTION



## Planning

- Facility Plan was approved by the Council in October of 2018.

## Permitting

- The Metro Plant's air permit will be amended, and voluntary environmental assessment worksheet completed.

## Construction

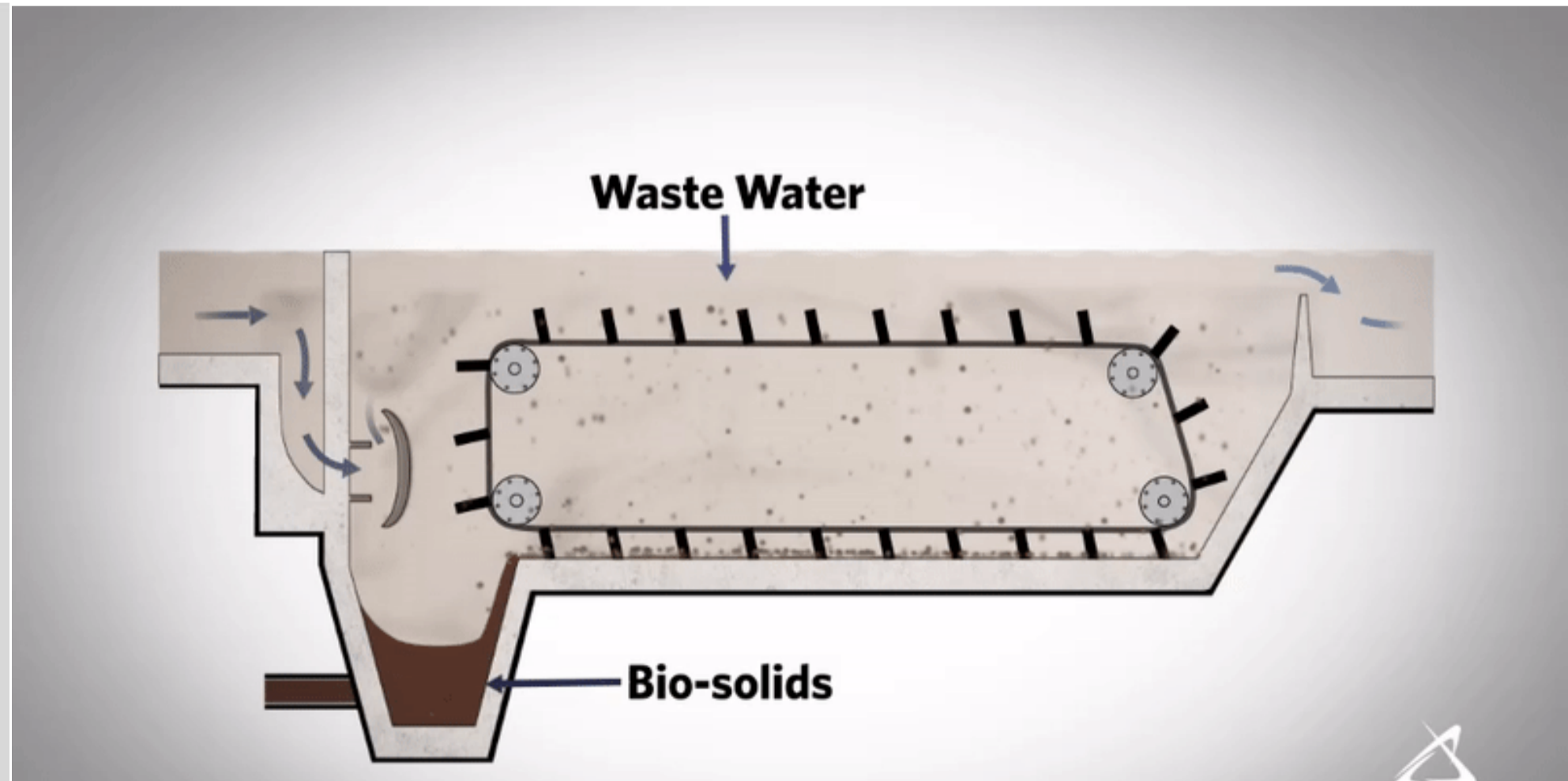
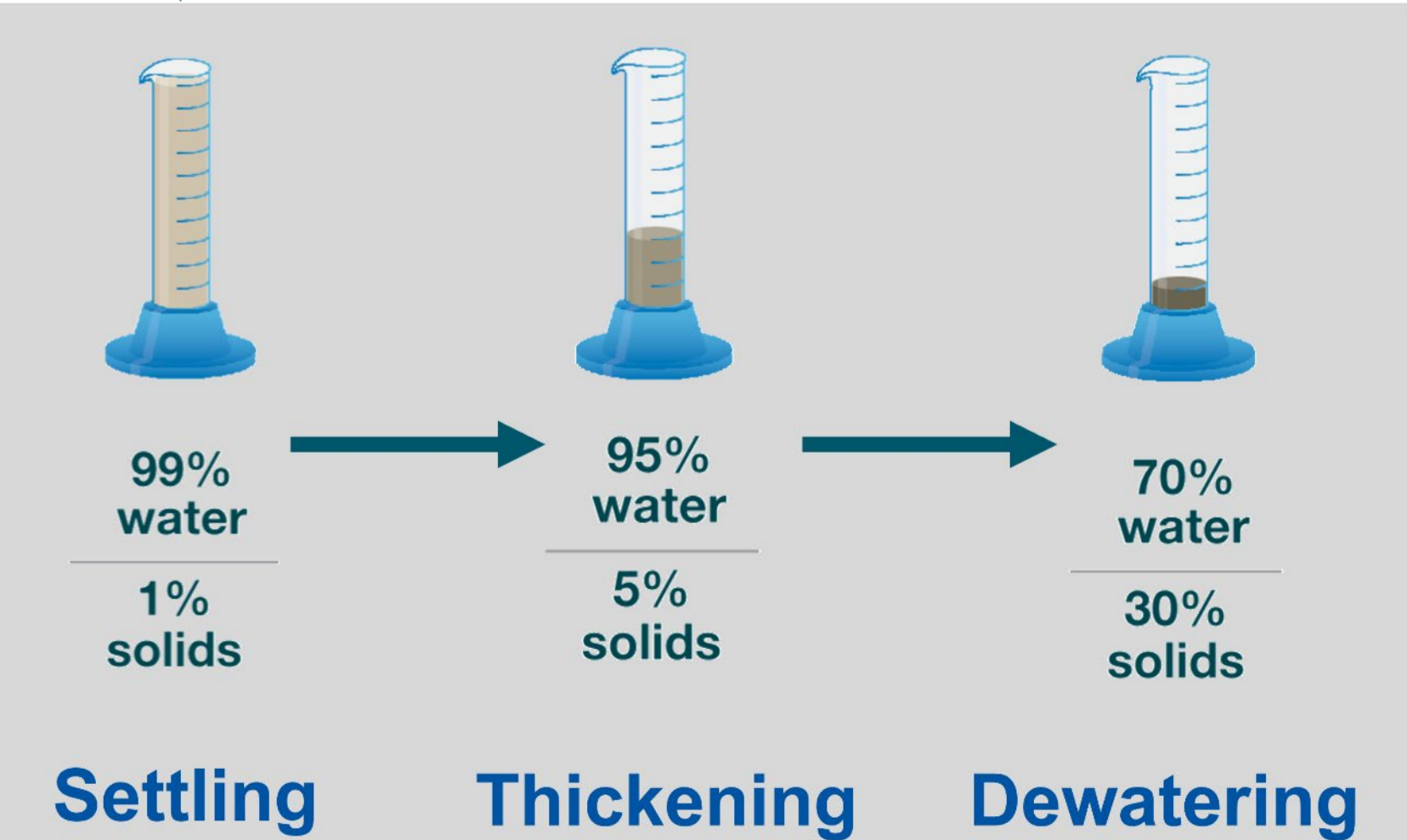
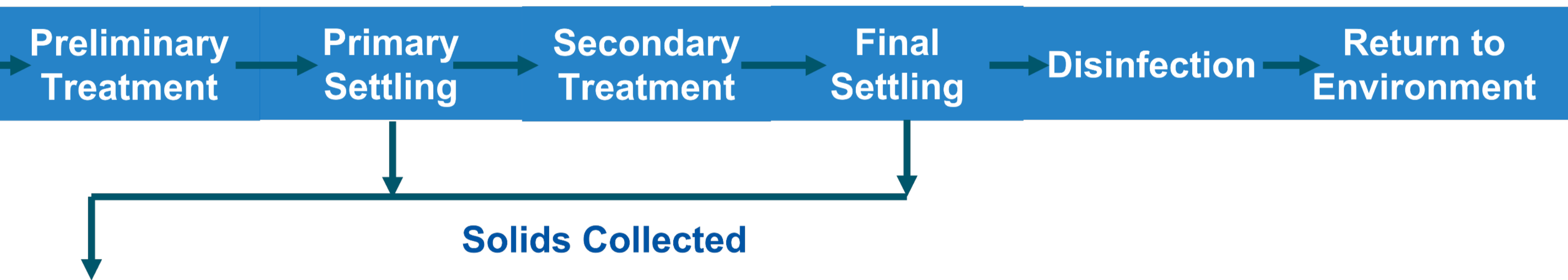
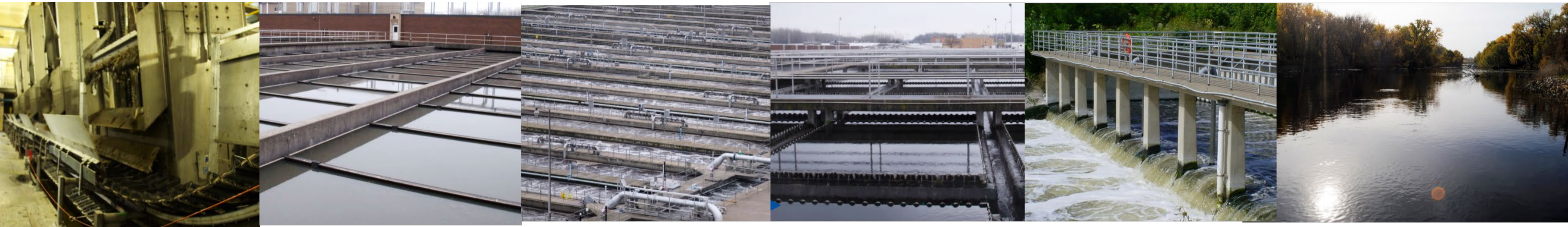
- Design build construction of the fourth incinerator is expected to take 3 years.

***The existing incinerators will be 20 years old in 2025 and in need of renewal following construction of the fourth incinerator.***

# How it Works

**Stephen Norton**  
Principal Engineer

# Solids Collection



# Renewable Fuel

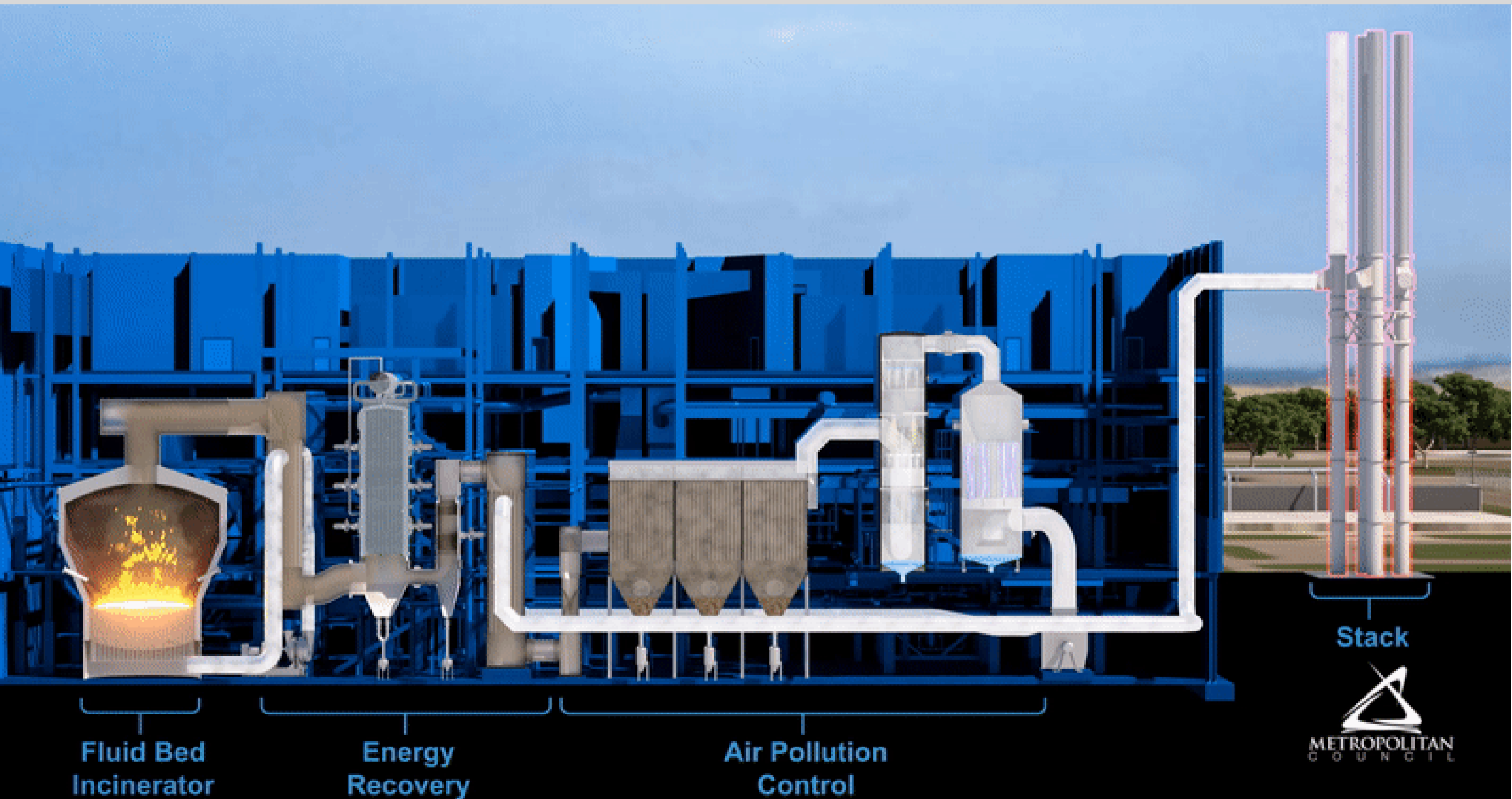
**Dewatered wastewater solids have the same heating value as wood or low grade coal.**



***Wastewater solids have enough energy that the incinerators normally operate without the need for supplemental fuel.***

# How Incineration Works

Fluid bed incineration, paired with energy recovery and state-of-the-art air pollution control, is a sustainable solution for treating wastewater solids.



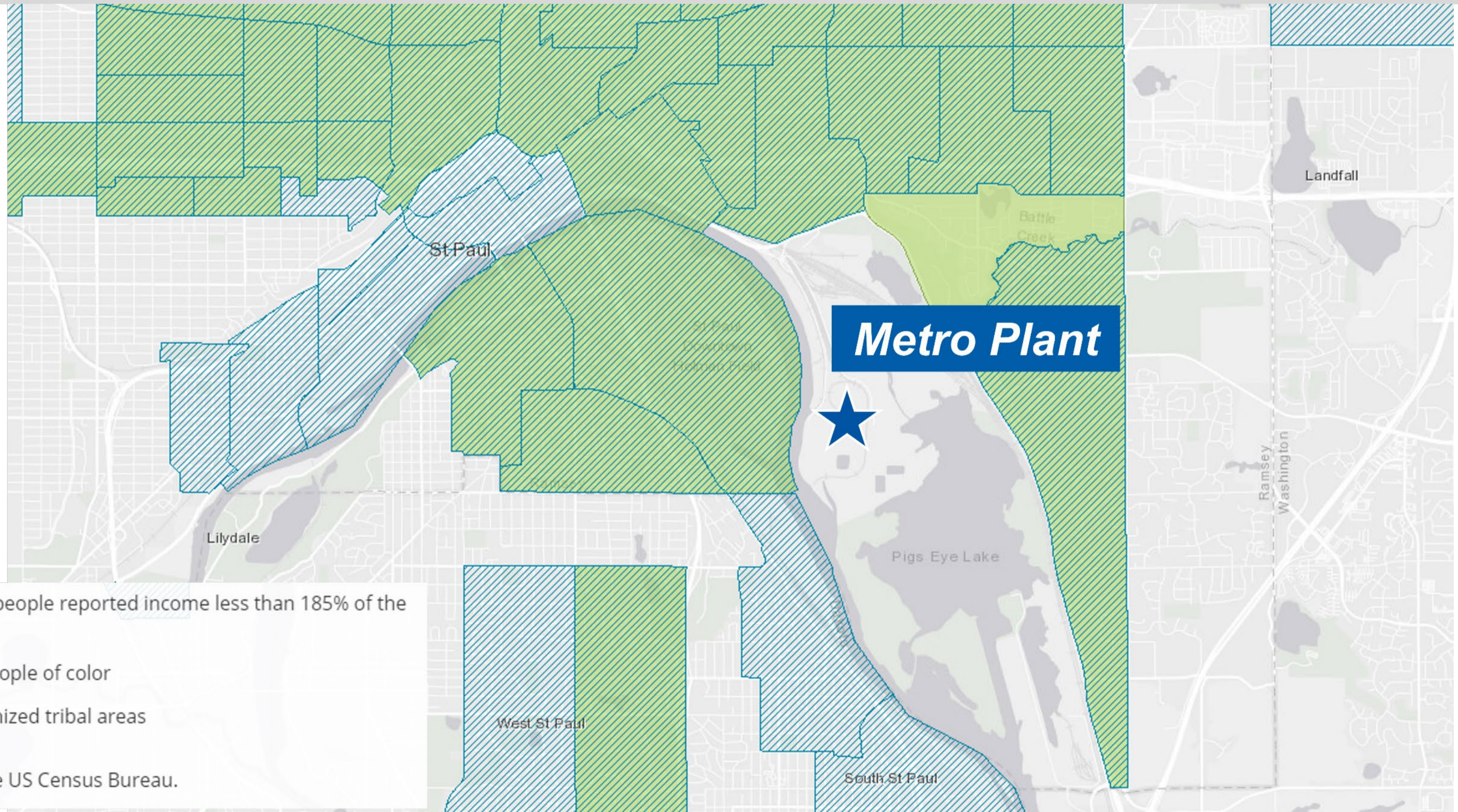


# **Air Permitting & Environmental Review**

**Rene Heflin**  
**Plant Engineering Manager**



MCES recognizes there are environmental justice areas surrounding the Metro Plant.



***The fourth incinerator will have no significant impacts to surrounding communities.***

# National Ambient Air Quality Standards

The National Ambient Air Quality Standards (NAAQS) for six criteria pollutants were developed by the EPA and are part of the Clean Air Act.

## Criteria Pollutants

Carbon Monoxide

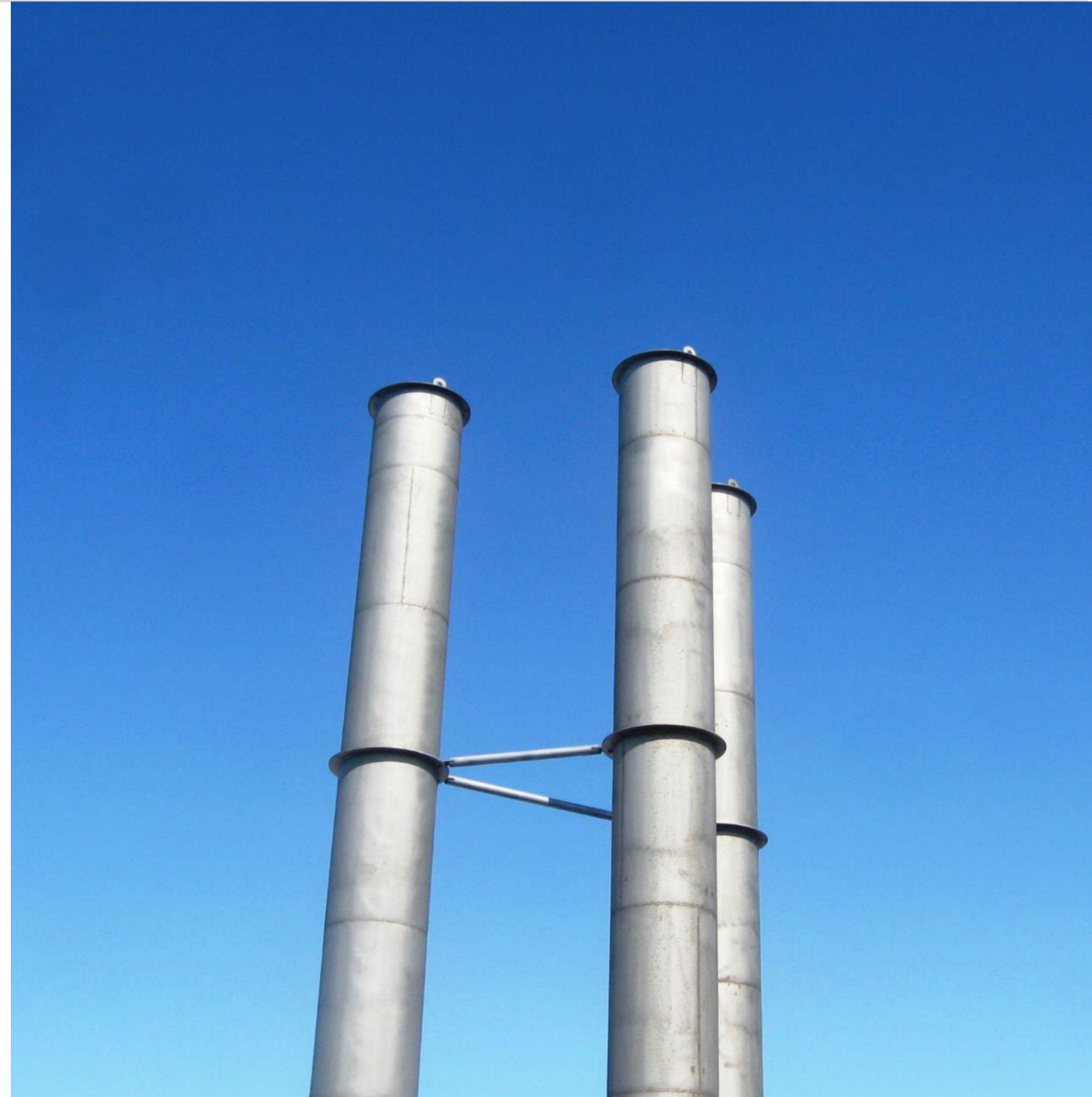
Lead

Nitrogen Dioxide

Sulfur Dioxide

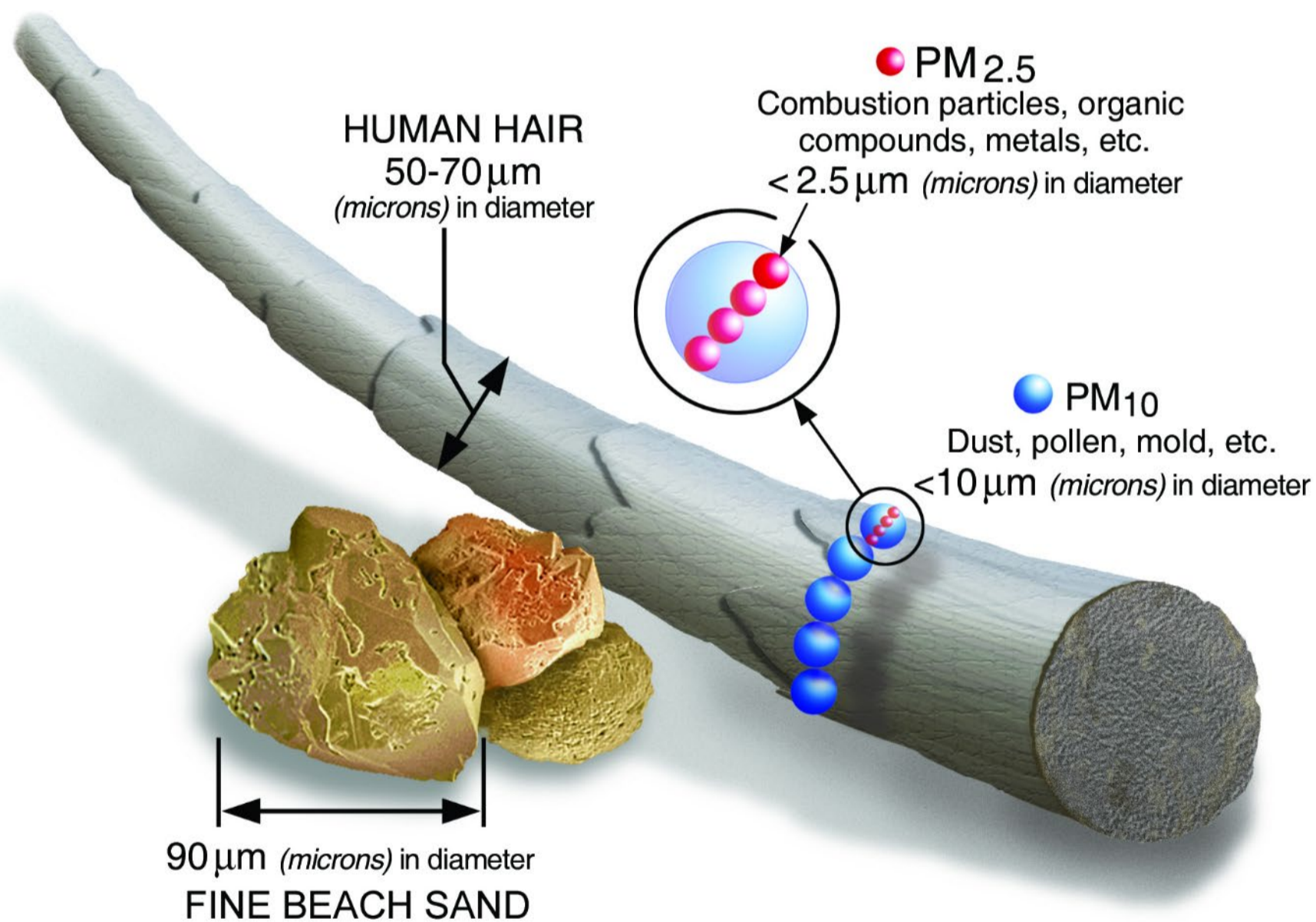
PM<sub>2.5</sub>

PM<sub>10</sub>



***The Metro Plant will continue to meet all the NAAQS at the facility boundary.***

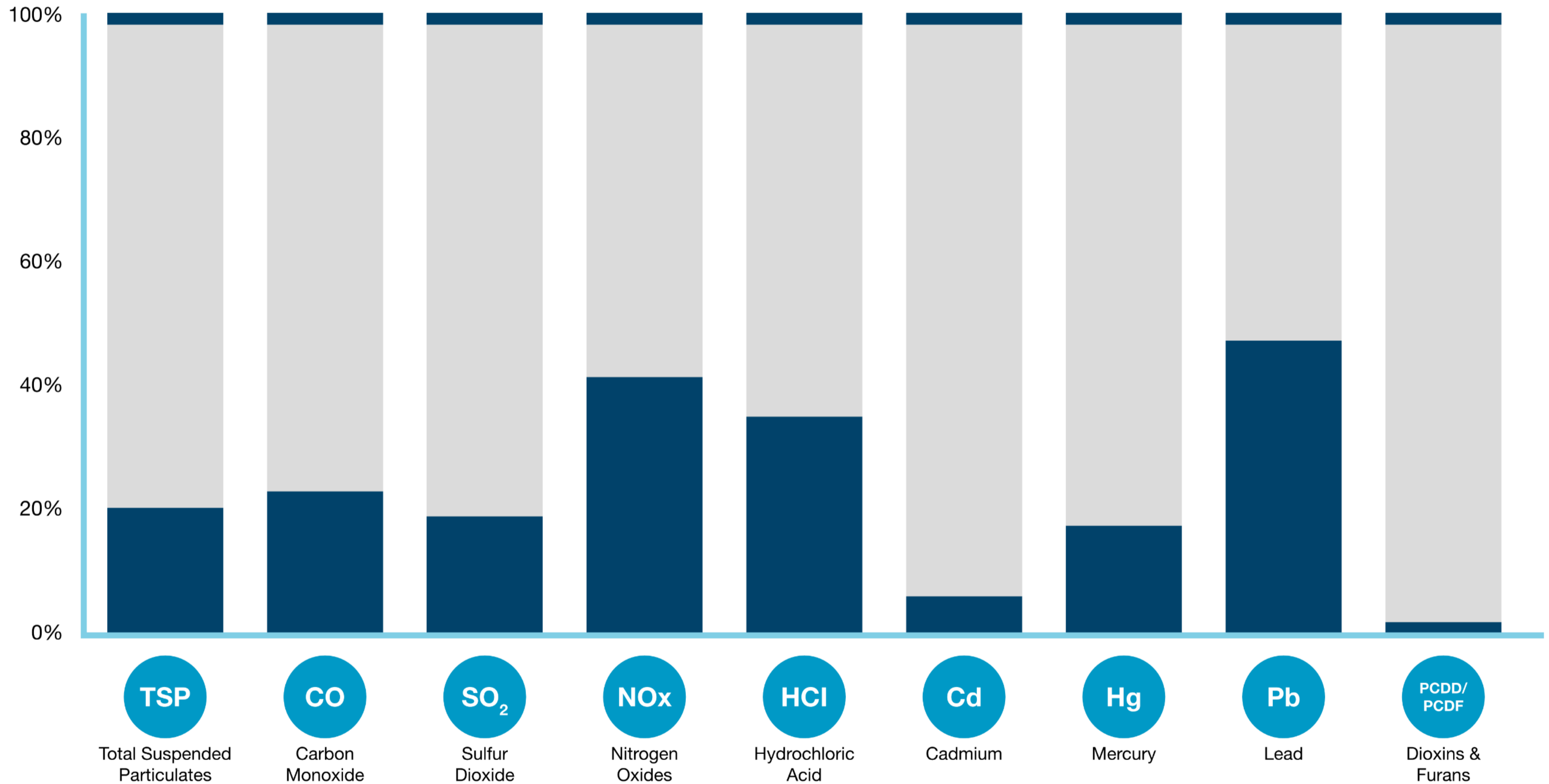
## The Metro Plant is located in a PM<sub>10</sub> Maintenance Area



**The project will reduce the Metro Plant's PM<sub>10</sub> potential to emit emissions by almost 2.5 tons/year from what was previously permitted.**

# Technology Specific Emission Standards

**Metro Plant Incinerator Performance Compared to EPA Emission Standards for New Fluidized Bed Incinerators**



***The existing incinerators meet federal emission standards for existing and new fluidized bed incinerators.***

# Air Emissions Risk Analysis

MCES completed an air emissions risk analysis for the Metro Plant including eight different risk scenarios.



## Resident Cancer Scenario

0 500 1000 1500  
meters

- - - - - 1.5 km radius

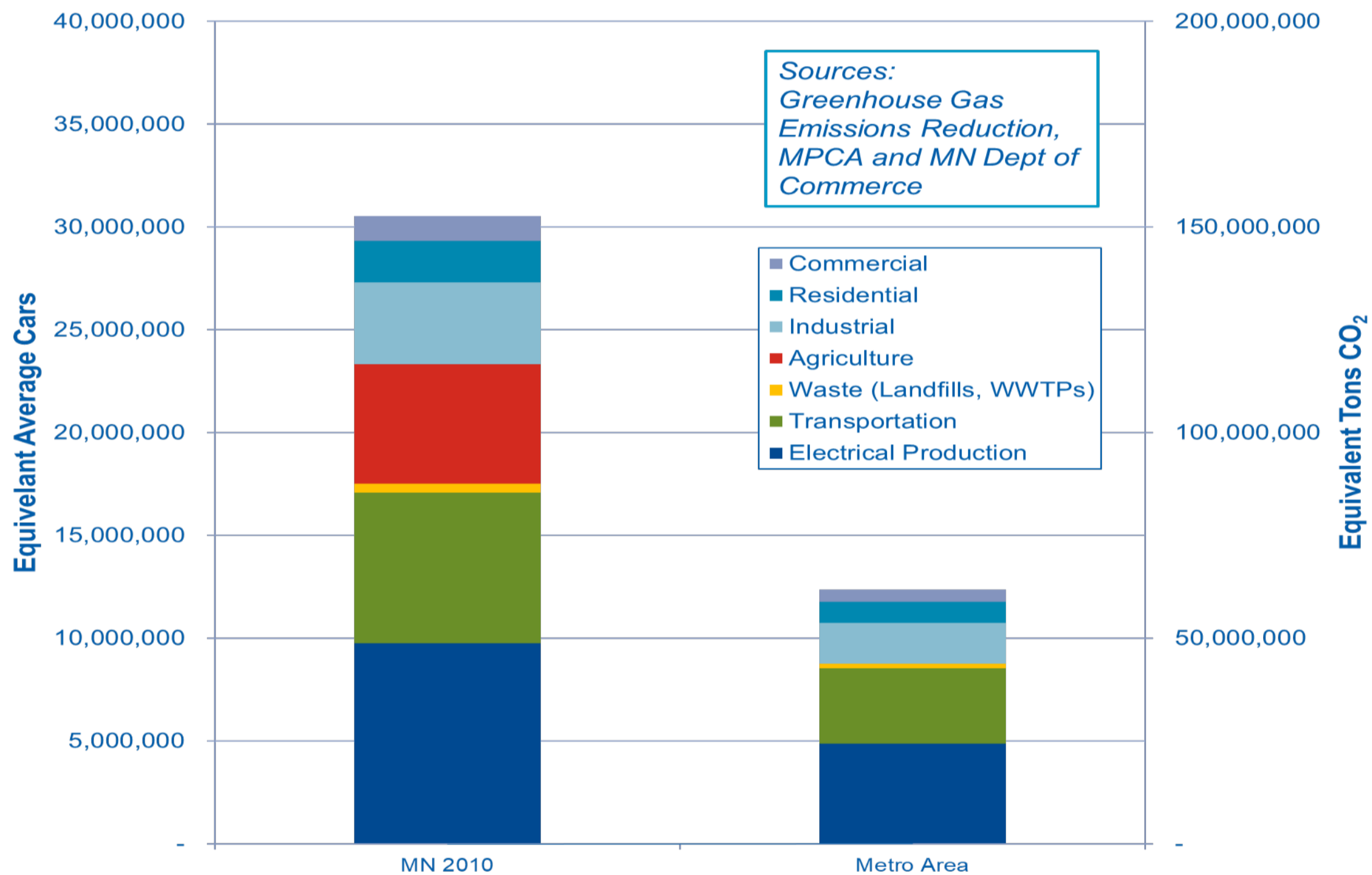
+ Maximum receptor

Meets Risk Threshold  
Exceeds Risk Threshold

***The results indicate that the Metro Plant meets the risk threshold for all eight risk scenarios evaluated.***

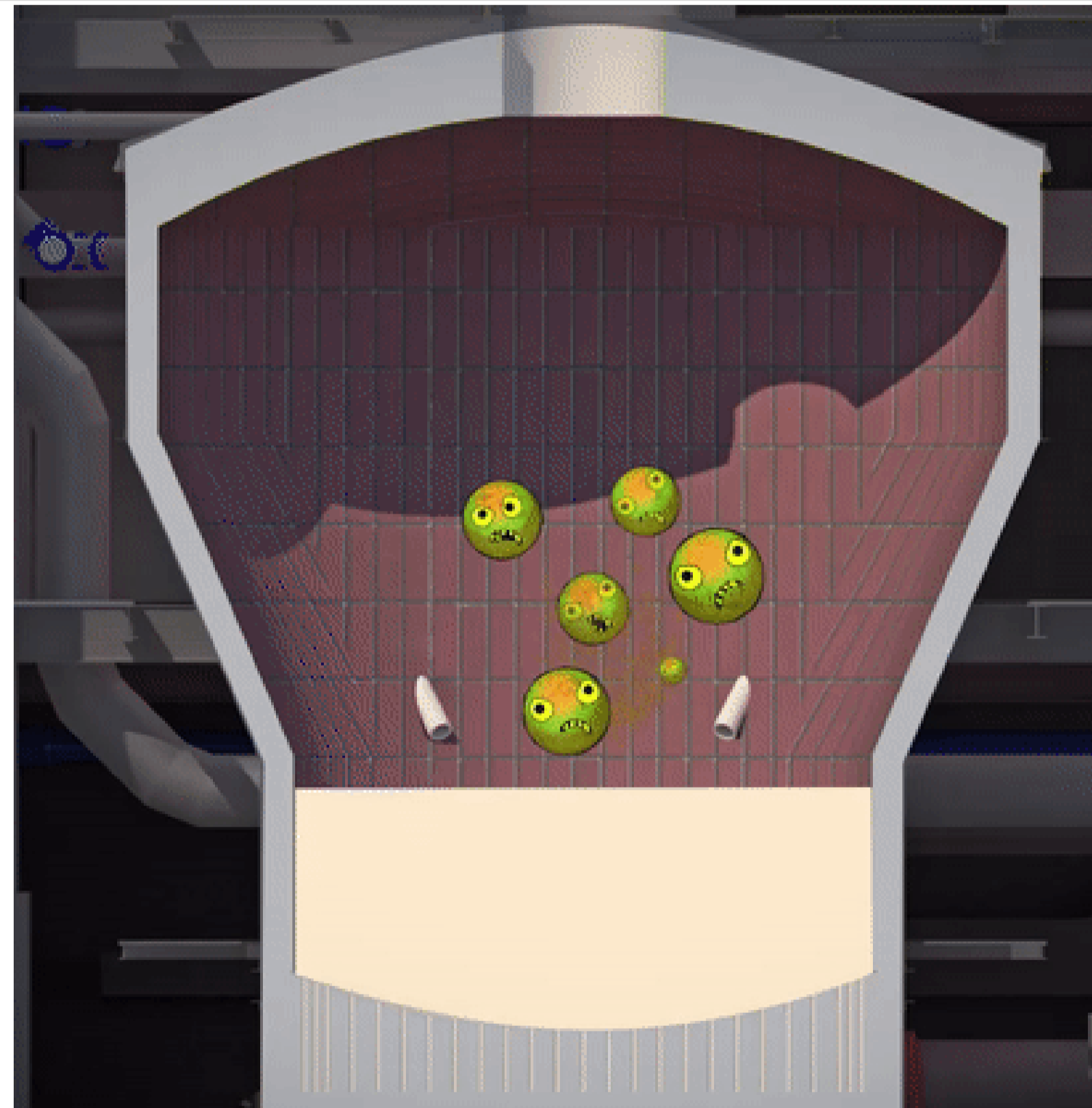
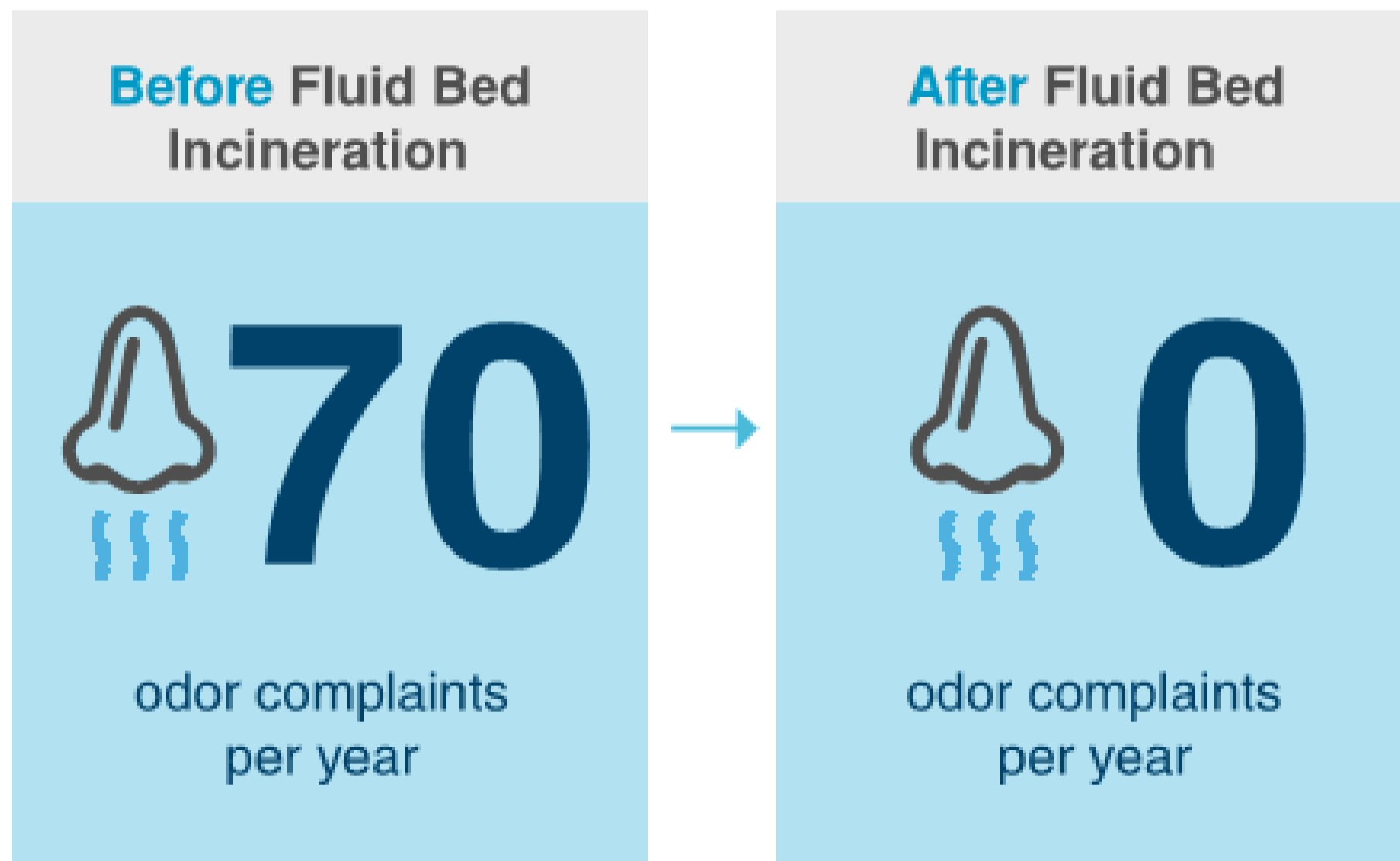
# Greenhouse Gas Emissions

Greenhouse gas emissions from the fourth incinerator are partially offset by energy recovery and are similar to other alternatives evaluated.



**The impact of wastewater treatment GHG emissions is very small accounting for 0.23% of total GHG emissions in Minnesota in 2018.**

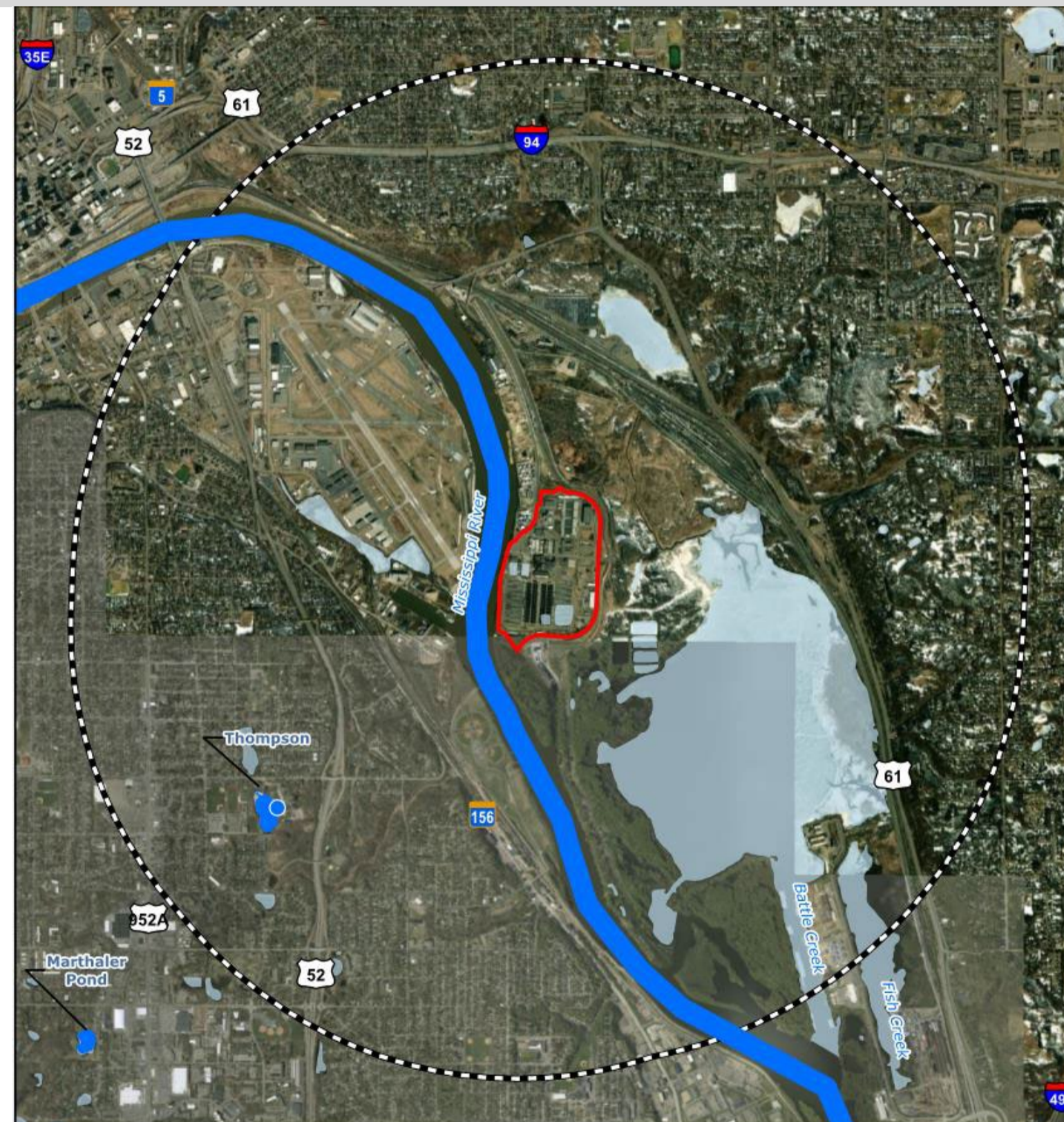
Incineration technology at the Metro Plant has been a key factor in reducing odors from the Metro Plant.



***Adding a fourth incinerator will not create any additional odors and will help MCES continue to be a good neighbor to surrounding communities.***



The Metro Plant is located next to the Mississippi River and Pigs Eye Lake.



### Legend

- Facility Ambient Boundary
- 3-Km Radius
- Non-Fishable Waterbody
- DNR Hydrography - Fishing in the Neighborhood (FIN) Ponds
- Fishing Pier
- Public Fishing Sites in Minnesota

***Nearby water resources will not be impacted by the construction or operation of the fourth incinerator.***

# Air Permitting & Environmental Review

**MCES has submitted a major air permit amendment and will submit a voluntary environmental assessment worksheet (EAW) to the Minnesota Pollution Control Agency (MPCA)**



***MCES will work with the MPCA to complete the air permitting and environmental review for the Fourth Incinerator project.***

# SUMMARY

**Jeannine Clancy**  
**Assistant General Manager**

# Fourth Incinerator Benefits

The fourth incinerator is the most **cost-effective** and **sustainable** alternative to meet the region's wastewater needs.



It will have the **lowest community impact** and will improve the **reliability** of the wastewater treatment system.





# Learn More & Provide Feedback



Web

[www.metrocouncil.org/metrosolids](http://www.metrocouncil.org/metrosolids)



Email

[info@metrosolids.com](mailto:info@metrosolids.com)



Voice

**651-691-9124**



Mail

**Stephen Norton - MCES Project Manager**  
**390 Robert St. North**  
**Saint Paul, MN 55101**



MCPA  
Feedback

**Air Permit Amendment**  
**Environmental Assessment Worksheet**  
**Public Notices**

# Questions & Comments